CATALOG 2020-2021

A Member of Minnesota State

Hennepin Technical College is an affirmative action, equal opportunity educator and employer. Hennepin Technical College is accredited by the Higher Learning Commission.

This document is available in alternative formats to individuals with disabilities, consumers with hearing or speech disabilities may contact us via their preferred Telecommunications Relay Service.

Students are responsible for understanding the information contained in this catalog. Due to changes in conditions beyond the control of Hennepin Technical College, it may be necessary to modify, amend, and/or delete statements appearing in this document without notice. Hennepin Technical College reserves the right to modify any statement herein in accordance with current conditions. Fees, charges, and policies are as of the publication date and are subject to change.

Catalog publication date: 6/8/20

Welcome

Welcome to Hennepin Technical College!

You have chosen Minnesota's largest technical college. All of our students receive a world-class education in a variety of technical fields. Our graduates are changing the face of the state's workforce and economy.

We are proud of our diverse and inclusive college. You will engage with students, faculty, staff and industry partners representing many different cultures. With our steadfast commitment to equity and inclusion, all are welcomed and supported.

As a student, you'll have access to excellent academic programs that prepare you for in-demand and high-paying employment opportunities. We offer more than 45 programs—manufacturing, engineering technology, information technology, practical nursing, dental assistant, and transportation. No matter which program you select—you'll be taught by dedicated faculty who are experts in their field. Hennepin Technical College is a place where staff and faculty know your name, teach with excellence and care about your success.

Classes are offered both day and evening at the Brooklyn Park and Eden Prairie campuses, as well as online. I hope you'll choose to participate in many of the campus events and activities that build leadership skills and connect you with the community.

As part of the Hennepin Technical College community, you are joining a large network of students, faculty, and staff, strengthened by partnerships with school districts, legislators, corporate leaders, and private industry. Our graduates maintain relationships with the college, and many alumni remain active by taking advantage of our career center and life-long learning opportunities.

Thank you for choosing Hennepin Technical College and be the first to say… I MADE IT!

Sincerely,

Merrill Irving Jr., Ed.D.
President

Student Handbook

COVID-19 Notice

Hennepin Technical College (HTC) holds as paramount the health, safety, and welfare of every member of its community. HTC, however, cannot guarantee a COVID-19-free environment. Unfortunately, the risk of COVID-19 exposure exists in all public places where people are present. HTC is taking all recommended steps to mitigate this risk, but we cannot categorically guarantee you will not get sick. Minimizing the risk of COVID-19 infections (or any other spread of disease) at HTC is a shared responsibility. As outlined, every member of our community – including you – must do their part. Understand that if you return to the physical campus of HTC, there is a risk you may contract COVID-19 and that illness, injury, or death is a possible result.

2020-21 Academic Calendar

Fall Term 2020	**August 24 - December 18**
Fall term tuition due	August 3
Workshop Day (College Closed)	August 20
Fall term begins	August 24
Fall Welcome Week Activities	August 24-28
Last day for 5-day add/drop period (100% Refund)	August 28
Federal Pell Grant Census Date	August 28
Labor Day Holiday (College Closed)	September 7
Financial aid disbursement for fall term	September 11
Application for Award forms for students graduating Spring term should be submitted after meeting with your faculty advisor during Advising Month	October 1-31
Spring Advising Month (October 1-31)	October 1-31
Summer 2021 schedule goes online	October 1
Summer 2021 registration begins	October 1
No Classes (Faculty Assigned Duty Day and Education Minnesota Days)	October 14-17
Fall 2021 and Spring 2022 schedules go online	November 16*
Fall 2021 and Spring 2022 registration begins	November 16*
No Classes (Workshop Day, Faculty Assigned Duty Day, & Faculty Holiday)	November 23-25
Thanksgiving Holiday Break (College Closed)	November 26-28
Spring term tuition due	December 17
Fall term ends	December 18

Term Break (No Classes)	December 19-January 10
Spring Term 2021	**January 11 - May 19**
Spring term begins	January 11
Spring Welcome Week Activities	January 11-15
Last day for 5-day add/drop period (100% Refund)	January 15
Federal Pell Grant Census Date	January 15
Martin Luther King Jr. Day Holiday (College Closed)	January 18
Financial aid disbursement for spring term	January 29
No Classes (Faculty Assigned Duty Day)	February 10
President's Day Holiday (College Closed)	February 15
Summer/Fall Advising Month	March 1-31
Application for Award forms for students graduating Summer or Fall term should be submitted after meeting with your faculty advisor during Advising Month	March 1-31
No Classes (Workshop Day)	March 9
Spring Break (No Classes)	March 15-20
Workshop Day (College Closed)	April 1
Application for Award forms for summer/fall graduates due to Registrar	April 2*
Summer term tuition due	May 7*
Commencement and Faculty A Day (No Classes)	May 14
Spring term ends	May19
Term Break (No Classes)	May 20-June 6
Memorial Day Holiday, College Closed	May 31
Summer Term 2021	**June 7–July 30**
Summer term begins	June 7
Last day for 5-day add/drop period (100% Refund)	June 11
Federal Pell Grant Census Date	June 11
Independence Day Holiday Observed (College Closed)	July 5
Summer term ends	July 30

*Dates subject to change

Contact Information

Department	Brooklyn Park		Eden Prairie
Affirmative Action Officer/Human Resources		(763) 488-2633	
Agency Funding		(763) 488-2517	
Campus Store	(763) 488-2638		(952) 995-1529
Career Experiences/Internships		(952) 995-1617	
Career Services		(763) 488-2411	
Clubs		(952) 995-1377	
Disability Services	(763) 488-2477		(952) 995-1544
Health Programming/Insurance Questions		(952) 995-1377	
Instructor	See your syllabus or D2L for instructor contact information		
Library	(763) 488-2929		(952) 995-1650
Office of Equity and Inclusion		(763) 488-2633	
One Stop Center Student Success Advisors Appointment Counseling Appointments		(952) 995-1300	
Public Safety		(952) 995-1525	
Public Safety Desk	(763) 488-2655		(952) 995-1433
Student Computer Lab	(763) 488-2429		(952) 995-1528
Student Life Center	(763) 488-2656		(952) 995-1358
Student Senate Office	(763) 488-2556		(952) 995-1416
Student Senate Advisors	(952) 995-1377		(952) 995-1556
Transfer Center	(763) 488-2747		(952) 995-1455
TRIO Student Support Services		(763) 488-2405	
Tuition Office		(763) 488-2424	
Tutoring Centers			
Learning Resource Center	(763) 488-2451		(952) 995-1548
Math Center	(763) 488-2592		(952) 995-1357
Writing Center	(763) 488-2467		(952) 995-1495
Veterans Certifying Official	(763) 488-2930		(952) 995-1474
Veterans Resource Center	(763) 488-2529		(952) 995-1509

About HTC

Mission

To provide excellence in career and technical education for employment and advancement in an ever-changing global environment.

Our Vision

To be the leader of innovative career and technical education that leads to success for all students.

Our Values

- Excellence: We pursue the highest standards in academic achievement and organization performance.
- Innovation: We value creativity and ingenuity to remain at the forefront of technical education excellence.
- Inclusion: We value an atmosphere of respect, dignity, and acceptance.

Purpose

Hennepin Technical College (HTC) seeks to implement its mission by providing:

- A safe, accessible, and effective teaching and learning environment that supports sensitivity to diverse individuals and groups.
- Individual courses and course sequences which lead to A.S., A.A.S. degrees, diplomas, and certificates, which provide learners the opportunity to maximize their potential through the lifelong learning process.
- Developmental, general education, and technical career education curricula designed to prepare learners for employment in an ever-changing workplace.
- A comprehensive array of student support services and financial assistance.
- Opportunities for students to develop leadership skills through participation in student and professional organizations.
- Positive working relationships with business, industry, and other agencies to ensure that programs and equipment are relevant to emerging technology and occupational innovation.
- Flexible and responsive Customized Training Services to meet the specific needs and expectations of business, industry, and the community.
- Leadership roles that foster professional growth and promotion for a diverse, qualified staff.
- Intercollegiate relationships and cooperative agreements which increase opportunities and maximize resources.
- Organizational structures, which support communication, shared decision making, and quality programs and services.

– The Staff of Hennepin Technical College, an Institution of Higher Education

Learner Outcomes

All HTC students at the time of graduation will demonstrate proficiency in:

- Oral and Written Communication
- Critical Thinking and Problem Solving
- Technological Literacy
- Mathematical and Scientific Reasoning

Learner Values

While students are at HTC they will develop:

- Professionalism
- Cultural and Global Awareness
- Safety and Environmental Responsibility
- Leadership and Self-Direction
- Creativity and Innovation
- Ethical and Social Responsibility

Accreditation

Hennepin Technical College is accredited by the Higher Learning Commission (hlcommission.org), a regional accreditation agency recognized by the U.S. Department of Education.

HLC's website is: hlcommission.org HLC may be reached at 1-800-621-7440, x100.

Program specific documents describing the accreditations and licensures held by HTC are available upon request from the College Registrar.

Accessibility

Hennepin Technical College complies with the Americans with Disabilities Act, the Rehabilitation Act, and the Minnesota Human Rights Act, which provide for accommodations for students with disabilities. Persons needing accommodations should contact Disability Services.

Brooklyn Park/Eden Prairie
Michelle Obergfoll
Director of Academic Support Programs
(952) 952-1544

MN Relay 711

Upon request, this information will be made available in an alternate format by contacting Disability Services.

Diversity

Hennepin Technical College recognizes, respects, and honors diversity existing in society due to an individual's age, ethnicity, national origin, race, color, gender, sexual orientation, gender identity, gender expression, disability, marital status, familial status, religion, creed, or socioeconomic status. The college is committed to creating a curriculum and a learning environment that empowers students to become contributing members of an increasingly multicultural and diverse society. Students are encouraged to explore and to be exposed to diverse cultures and perspectives as an important aspect of their learning experience.

Equal Opportunity and Nondiscrimination in Employment and Education

Hennepin Technical College is committed to a policy of nondiscrimination in education and employment opportunity. No person shall be discriminated against in the terms and conditions of employment, personnel practices, or access to and participation in programs, services, and activities. Harassment of an individual or group on the basis of race, sex, color, creed, religion, age, national origin, disability, marital status, status with regard to public assistance, sexual orientation, gender identity, gender expression, familial status, or membership or activity in a local commission has no place in a learning or work environment and is prohibited.

This policy is directed at verbal and physical conduct that constitutes discrimination/harassment under state and federal law and is not directed at the content of speech. In cases in which verbal statements and other forms of expression are involved, HTC will give due consideration to an individual's constitutionally protected right to free speech and academic freedom. Please refer to policy 1B.1 Equal Opportunity and Nondiscrimination in Employment and Education at: hennepintech.edu/policy

HTC's designated officer for students is Jessica Lauritsen, Vice President of Student Affairs, contact information: jessica.lauritsen@hennepintech.edu or (763) 488-2605. Her office is located at the Brooklyn Park campus, room C115 and Eden Prairie campus, room F151.

Report/Complaint of Discrimination/Harassment Investigation and Resolution

This procedure is designed to further implement Minnesota State policies relating to nondiscrimination by providing a process through which individuals alleging violation of system non-discrimination policies may pursue a complaint. This includes allegations of discrimination or harassment based on sex, race, age, disability, color, creed, national origin, religion, sexual orientation, gender identity, gender expression, familial status, status with regard to public assistance or membership or activity in a local commission. This procedure is not applicable to allegations of sexual violence, which should be handled under appropriate system and college or university policies and procedures.

This procedure shall apply to all individuals affiliated with Minnesota State, including its students, employees, and applicants for employment, and is intended to protect the rights and privacy of both the complainant and respondent and other involved individuals, as well as to prevent retaliation/reprisal. Individuals who violate this procedure shall be subject to disciplinary or other corrective action.

Not every act that may be offensive to an individual or group constitutes discrimination or harassment. In determining whether discrimination or harassment has occurred, the totality of the circumstances surrounding the incident must be carefully reviewed and due consideration must be given to the protection of individual rights, freedom of speech, academic freedom, and advocacy.

Minnesota State shall maintain and encourage full freedom, within the law, of expression, inquiry, teaching, and research. Academic freedom comes with a responsibility that all members of our education community benefit from it without intimidation, exploitation, or coercion. Discrimination and harassment are not within the protections of academic freedom.

To file a complaint, please refer to the “Concern/Complaint/Grievance Form”.

Student complaints are overseen by Jessica Lauritsen, Vice President of Student Affairs, contact information: jessica.lauritsen@hennepintech.edu or (763) 488-2605. Office is located on the Brooklyn Park campus, room C115 and Eden Prairie campus, room F151.

Academic Advising

A primary goal of Hennepin Technical College is to assist students in making progress toward their educational, career, and personal goals. In order to assist students to be successful, the following staff and faculty are available to meet with students:

Counselors

Professional counselors serve the college community by providing academic, career, and personal counseling to students in a confidential setting. Students visit with counselors regarding a wide variety of concerns, including managing stress, developing career goals, creating academic plans, and understanding college policies. Counselors may refer students to the appropriate campus and/or community resources to best serve the needs of the student.

Student Success Advisors

Student Success advisors provide assistance with academic planning, scheduling, and post-test advising. They are available by appointment and on a walk-in basis to help students with the admissions, registration, and financial aid processes. Student Success advisors help prospective students explore the programs offered by HTC and help current students stay on track with their academic plan.

Faculty Advisors

Faculty advisors provide assistance in planning a program of study consistent with the students’ educational and employment objectives. All students with a declared major are encouraged to meet with their faculty advisor during Advising month, which is held each semester prior to registration.

Academic Support

Tutoring Centers

The Learning Resource (LRC), Math and Writing Centers offer free tutoring to registered students on a walk-in basis or by appointment. The centers are staffed by professional tutors and trained peer tutors. Individual and group sessions and workshops are available. Contact the centers for more information.

Learning Resource Centers:

Brooklyn Park Campus	Room G241	Phone- (763) 488-2451
Eden Prairie Campus	Room E150-152	Phone- (952) 995-1548

Math Centers:

Brooklyn Park Campus	Room G227	Phone- (763) 488-2592
Eden Prairie Campus	Room E150-152	Phone- (952) 995-1357

Writing Centers:

Brooklyn Park Campus	Room G221	Phone- (763) 488-2467
Eden Prairie Campus	Room E150-152	Phone- (952) 995-1495

TRIO Student Support Services (SSS) and TRIO Student Support Services-ESL (SSS-ESL)

The TRIO SSS and TRIO SSS-ESL programs help students be academically successful, and acquire the skills, knowledge, values, and attitudes that will enable them to lead creative, productive, and self-fulfilling lives. Eligible participants are first-generation college students, of moderate income, or participants with a disability. The TRIO SSS-ESL program provides additional support to students in ESOL classes at Hennepin Technical College. This free service includes academic advising, tutoring, mentoring, career counseling, financial assistance information, workshops, and cultural events. For more information and to receive an application, contact TRIO Student Support Services.

Student Life and Career Development

Career Preparation Services

Career services provides assistance to students in all areas of the job search process including:

- Resume and cover letter development or review
- Interviewing skills and practice interviews
- Networking with employers
- Mentoring and internship resources
- Workshops and informational sessions

Career Fairs

At Career Fairs, held virtually or in person host employers that recruit students and alumni for jobs and internships. Even if you are not ready to apply now, you can start preparing by networking with recruiters and learning about upcoming opportunities and requirements.

College Central Network

Visit collegecentral.com/hennepintech to:

- Search our exclusive job listings and set up your job agent today
- Create your online resume! It's easy with our resume builder
- Build, update, and forward your online career portfolio to employers
- Read our career-related announcements
- Check out upcoming career events
- Download our schools free career advice documents and podcasts
- Read hundreds of career related articles
- View and apply to jobs on the nations largest entry-level job board

Student Life and Career Center

The Student Life and Career Center is located in room F120 on each campus and offers students a place to relax, socialize, grab coffee, or study between classes. In the Student Life and Career Center, you will find Student Experience Team members as a resource, as well as, the Student Senate office.

Student Activities and Student Experience Team

Student Life offers many student activities that are designed for you to come when you can and leave when you need! The Student Life staff organizes these activities along with the Student Experience Team. The Student Experience Team is a group of student leaders who are dedicated to positively representing Hennepin Technical College as peer mentors and assist in the planning and execution of campus activities and events. The Student Experience Team puts on small weekly events throughout each semester. Staff organize larger events such as Free Yoga, Mindful Meditation, Disc Golf, What's Poppin'?, Welcome Week, Be Healthy HTC, Grad Fest, and many more!

Student Senate and Clubs

Student Senate is the official representation of students at Hennepin Technical College. All students are encouraged to participate in Student Senate meetings. Student Senate meetings are open to every HTC student and are held alternately on Wednesdays at noon (except during breaks and in the summer). The Student Senate Office is located in F121 (inside the Student Life and Career Center) on each campus. Hennepin Technical College also has a number of clubs for students to join. Check out the list at Student Clubs and Organizations

Leadership Series

Leadership is one of the top skills employers are looking for. Gain leadership skills at Hennepin Tech through the Keys to Success, a Leadership for Life Series which are offered several times each semester on important topics that will help you be successful in your career.

Fitness Centers

Fitness Centers are located on each campus for student use. Each fitness center has a mixture of cardio and strength equipment designed for ease of use. Fitness Trainers are available free of charge to help you achieve your goals, no matter what fitness level you are at. The Fitness Centers are located in G115 at Brooklyn Park and F125 in Eden Prairie and are open according to Building Hours. Learn more at: Health and Well-Being

Disc Golf Courses

Each campus has a unique disc golf course available for student and public use. Maps and rules are available on our webpage. Hennepin Tech students are able to check discs out from the library. Tag your photos on social media with #HennepinTechFrolf!

Workshops and Events

Visit our webpage for a list of current workshops and events at: Student Life and Career Development

Contact Student Life and Career Development

Online at:

- hennepintech.edu/studentlife
- facebook.com/hennepintechSLCD/

By email at:

- studentlife@hennepintech.edu
- jobs@hennepintech.edu

Student Resources

Everyone needs help at some point, and those who ask for the help they need are often the most successful. So don't hesitate. Reach out. There are services to keep you on course to success.

Bus Stops and Passes

Bus stops are located at the main entrances to each campus. Metro Transit serves the Brooklyn Park campus and Southwest Transit serves the Eden Prairie campus. A limited amount of bus passes are sold at a reduced rate at the Campus Store a few weeks prior to the start of the semester. They can be purchased by cash, debit card, financial aid, or credit card by currently enrolled students with a current Student ID and HTC school schedule.

Campus Store

The Campus Store is a retail service facility operated to meet the needs of students, faculty, and staff. Textbooks; course-related and reference materials; educational tools, kits, clothing, and supplies; may be purchased at the Campus Store at each campus or online.

Career Exploration

Hennepin Technical College provides services to help students make the right career choice. Whether students are making a career change, returning to the workforce, undergoing a transition, or entering college for the first time, there are options available to help make informed, well-planned decisions, including career assessments. To receive more information about career development services at HTC or to make an appointment with a Career Counselor contact (952) 995-1300.

Disability Services

If you are an individual with a disability, the first step in seeking accommodations at Hennepin Technical College is to contact Disability Services. You may be asked to provide documentation of your disability to assist in the discussion of possible accommodations in cases where your disability or need for accommodations is not evident. Please contact the director below to schedule an appointment.

Brooklyn Park Campus/Eden Prairie Campus
Michelle Obergfoll, Director of Academic Support Programs
(952) 995-1544

MN Relay 711

English Speakers of Other Languages (ESOL)

Hennepin Technical College offers courses for English Speakers of Other Languages (ESOL). The Student Success Advisors offer assistance to English language learners with services such as financial aid, admissions, course placement, and career advising. They can also help in locating services for social and academic support.

Library

The Hennepin Technical College Library provides access to a variety of materials that support the curriculum of the college, including research databases, online and print materials, laptops, research help, and more. Many current course textbooks are also available to students for 4 hours (in-building use only). Our online content can be accessed off-campus, 24/7 through the Library website.

Please visit the Library website for more information about resources and services.

On Campus Food Service

Food is available for purchase on each campus on all days when classes are in session in the Fall and Spring semesters. Hours vary by campus. Vending machines are also available around campus.

Testing Centers

The Testing Centers serve students by providing the College Board Placement Test (ACCUPLACER) for appropriate course placement. The Testing Centers also offer makeup test services for Hennepin Technical College students. This service is only available to those students who, due to unforeseeable circumstances, cannot be present to attend the original exam date. Makeup testing is reserved on an individual basis for students who have prior approval from their course instructor.

The Centers also provides HESI, NOCTI, and Pearson VUE exams for eligible and approved HTC students.

For more information, please visit Testing Services.

Veterans Resources

Veterans Resource Center

The Veterans Resource Center (VRC) is for veterans, current or former military personnel, family members or significant others. You can get information on veterans benefits, relax between classes, go online, study, or just get together and talk.

The VRC is staffed by veteran work study students who can provide information on veterans benefits. VRC hours will be posted on the door.

Veterans Certifying Official

Any questions regarding VA benefits can be directed to the Veterans Certifying Official at veteransco@hennepintech.edu

Beyond the Yellow Ribbon

We are a Beyond the Yellow Ribbon company creating awareness and connecting service members and their families with community support, training, services, and resources.

Students' Rights and Responsibilities

Overviews of highly pertinent policies and procedures are located throughout this catalog. A full listing of the most current and complete official policies and procedures, are available at Policies and Procedures.

Attendance

Instructors may enter a Last Date of Attendance (LDA) (partial attendance or no show) if you are not attending courses:

- Students with an LDA are locked out of their D2L account.
- Students marked with an LDA are unable to drop/withdraw online from their eServices account.
- Students may lose or have to pay back a portion of their financial aid for any LDA courses.

View Policy 3HTC.13 Last Date of Attendance at Policies and Procedures.

Dropping A Class	**Withdrawing From A Class**
From time of registration through the 5th business day of the semester (or day after class starts for late start classes)	After 5th day of semester (free add/drop period) • Through 80% of semester, for semester long courses OR • Through 80% of course, for courses that do not meet entire length of term
Processed online through eServices account	Processed online through eServices account
Does not appear on transcript	Class appears on transcript with a "W" attached
No financial responsibility for course	Financially responsible for the credits
Does not impact satisfactory academic progress	Does not impact GPA Does impact completion rate

Satisfactory Academic Progress

In order to be in Good Standing students must maintain:

- Overall grade point average (GPA) of at least 2.0. This means at least a C average.
- Overall completion rate of at least 66.67%. This means that all the credits attempted must be completed with 66.67%. W, F, NC, and I grades will negatively affect completion rate.

Students who fail to meet the satisfactory academic requirements after one term will be placed on Academic Warning. Failure to meet the requirements while on Academic Warning will result in the student being placed on Academic Suspension. Policy 2.9 Academic Standing and Financial Aid Academic Progress is below and also available at Policies and Procedures.

Academic Standing and Financial Aid Academic Progress Policy

Hennepin Technical College (HTC) requires that all students make satisfactory progress toward a degree, diploma, or certificate to remain in good academic standing. Additionally, federal and state laws require that a recipient of financial aid make satisfactory academic progress toward a degree, diploma, or certificate to remain eligible for financial aid. In compliance with federal and state laws and to implement college policy, HTC has established procedures defining the standards of academic progress for all students.

Students bear the primary responsibility for their own academic progress and for seeking assistance when experiencing academic difficulty. Students are encouraged to keep a file of their grades and transcripts. Admission and faculty advisors are available to review students' academic progress.

Implementation Procedures

Purpose This policy and procedure sets forth the process to be used at HTC concerning satisfactory academic standing. Students bear primary responsibility for their own academic standing and for seeking assistance when experiencing academic difficulty. Students are encouraged to keep a file of their grades, transcripts, and course syllabi.

Requirements The requirements for satisfactory academic standing are based on students meeting both a qualitative and a quantitative measure. Satisfactory progress will be measured after a student has attempted their first course.

Qualitative Measure All students are required to maintain a minimum cumulative 2.0 GPA (Note: A 2.0 GPA is required to graduate.)

Quantitative Measure All students are required to complete a minimum of 66.67% cumulative attempted credits.

Part 1. Implementation The academic standing of all students will be evaluated at the end of each term as follows:

Subpart A. Academic Warning

Students who fail to meet the minimum cumulative academic standing requirements that term will receive a warning letter from the Registrar and will be placed on academic warning for one term, commencing immediately. This allows students making substantial improvement to continue with the educational objectives.

Students experiencing academic difficulties are encouraged to use the resources available in the Tutoring Centers. Academic assistance includes support in: reading, communications, study skills, limited English proficiency, math, tutoring, and special accommodations.

Subpart B. Suspension

Students on warning who fail to meet the minimum cumulative academic standing requirements for a second consecutive term will receive a suspension letter from the Registrar and will be subject to suspension commencing immediately. Suspended students who wish to remain enrolled at the college must successfully appeal the suspension in order to be reinstated. If the appeal is denied or not completed the student's registration will be cancelled. If students continue under an approved appeal, they will be placed on warning until the cumulative GPA reaches a 2.0 and the cumulative completion rate reaches 66.67%. If reinstated students fail to meet the standards for satisfactory academic progress within a term, they will be suspended.

Subpart C. Academic Plan

Students who are reinstated following an academic suspension shall be required to have an academic plan approved by an HTC counselor. Such plans shall specify the required term completion rate, grade point average and registration requirements for the student. Completion of student success education coursework may also be added to the academic plan and shall become a requirement for returning to good standing. If students fail to meet the term standards, they will be suspended.

Subpart D. Appeals

Students who fail to meet academic standing requirements and are suspended from enrollment have the right to appeal based on unusual or extenuating circumstances. Appeals which are denied may be submitted to the satisfactory academic progress appeals review committee for further review.

Subpart E. Reinstatement

Students who have been suspended from enrollment may continue at the college after an appeal has been approved. If at any point it is determined that students will not be able to finish the required courses to graduate from their program within the 150% time frame, financial aid eligibility will be terminated immediately. Note: It is possible to be reinstated to good academic standing without being reinstated to financial aid Satisfactory Progress eligibility

Financial Aid Satisfactory Academic Progress Procedure

Part 1. Purpose

This procedure sets forth the process to be used at HTC concerning financial aid satisfactory academic progress. Students are required to maintain satisfactory academic progress toward the completion of a degree, diploma, or certificate in order to receive financial aid. Federal and state work-study, loans, grants, and some scholarships are covered under this procedure. Students bear primary responsibility for their own academic progress and for seeking assistance when experiencing academic difficulty. Students are encouraged to keep a file of their grades, transcripts, and course syllabi.

NOTE: It is possible for a student to be in financial aid Satisfactory Academic Progress suspension status but not be in an academic standing suspension status at HTC.

HTC reserves the right to withhold financial aid at any time from any students who are not performing satisfactorily at minimal standards due to an attendance pattern, and thus abuses the receipt of financial assistance. For example, financial aid could be withheld from students who withdraw from all classes for two consecutive terms, or students who have previously attended two or more institutions and who have not progressed satisfactorily, or students who do not appear to be pursuing

degree/diploma/certificate completion, etc.

Part 2. Qualitative Measure of Progress

HTC financial aid recipients are required to maintain a cumulative 2.0 or greater Grade Point Average (GPA). Federal Title IV financial aid programs and programs authorized under Minnesota Statutes 136A require HTC to develop satisfactory academic progress procedures that shall apply to all students receiving financial aid under these programs. Monitoring of the quantitative standard is cumulative and will commence with the first credit attempted. All periods of enrollment will be included, regardless of whether a student received financial aid for that period. A cumulative 2.0 GPA is required to graduate.

Part 3. Quantitative Measure of Progress

Subpart A. Required Completion Percentage

Financial aid recipients are required to maintain a cumulative credit completion rate of 66.67% or greater of all credits attempted at HTC. Federal Title IV financial aid programs and programs authorized under Minnesota Statutes 136A require HTC to develop satisfactory academic progress procedures that shall apply to all students receiving financial aid under these programs. Monitoring of the quantitative standard is cumulative and will commence with the first credit attempted. All periods of enrollment will be included, regardless of whether a student received financial aid for the period.

HTC uses cumulative credits completed, divided by credits attempted to measure completion percentage. To remain eligible for financial aid, students are required to progress toward the completion of an academic program by successfully completing 66.67% of all credits attempted at HTC. Courses for which students receive a letter grade of A, B, C, D, and P are included in the calculation of cumulative credit completion percentages as courses successfully completed.

Courses for which students receive a letter grade of I, NC, W, F, FN and FW will be treated as credits attempted but not successfully completed. Audited courses (AU) are not included in the calculation.

Subpart B. Maximum time Frame

The maximum allowable time frame for students to complete an academic program is 150% of the published credit length of the program of study. For example, if the program of study is 60 credits in length, students would be eligible to receive financial aid for up to 90 attempted credits (60 x 1.5 = 90). All cumulative credits attempted are counted, including accepted transfer credits, and consortium credits, regardless of whether financial aid was received for the credits, or the course work was successfully completed. All credits attempted at HTC will be counted, even though a period of time may have elapsed between enrollments and regardless of whether students received financial aid for the terms and credits measured.

Part 4. Evaluation Period

Financial Aid Satisfactory Academic Progress will be evaluated three times each year after Fall and Spring Semester, and Summer Term grades are recorded and prior to the 10th day of the subsequent term.

Part 5. Financial Aid Suspension and Warning

1. **Maximum Time Frame**

   Students who have reached or exceeded the maximum number of credits permitted to complete their program of record will be suspended from financial aid eligibility. Changing majors, withdrawing from courses, and/or repeating courses can contribute to suspension of financial aid based on the standards for maximum time frame. Credits earned in the college's English for Speakers of Other Languages (ESOL) program do not count toward the determination of maximum timeframe. All local attempted credits and transfer credits into Hennepin Technical College count towards the maximum timeframe. Completing a major or changing a major will change timeframe calculation and allow the new count of credits to the new major less any transfer of credit. If courses in the previous major are required in the new major, they will not be counted twice in the new maximum timeframe calculation.

2. **Qualitative Standard (GPA) or Quantitative Standard (Completion Percentage) Failure**

   Students who fail to meet the qualitative or quantitative measure at the time of evaluation will be placed on academic warning. Students will be eligible for financial aid during this period. Students who fail to meet the qualitative or quantitative measures at the end of the warning period will have financial aid eligibility suspended immediately.

3. **Reinstatement of Students on Warning Status**

   At the end of the warning period, students who have met the cumulative qualitative and quantitative standards of the college will have their eligibility for financial aid reinstated by the college.

4. **Suspension of Students on Warning Status**

   At the end of the warning period, students who have not met the cumulative qualitative and quantitative standards of the college will be suspended immediately by the college upon completion of the evaluation.

5. **Continuation of Students Who Successfully Appeal a Suspension**

   Students who fail to make satisfactory academic progress and are suspended from financial aid eligibility have the right to appeal based on extenuating circumstances. Students who are reinstated following an academic suspension shall be

required to have an academic plan approved by an HTC counselor. Such plans shall specify the required term completion rate, grade point average and registration requirements for the student. Completion of student success education coursework may also be added to the academic plan and shall become a requirement for returning to good standing. If students fail to meet the standards documented in the academic plan, they will be suspended.

Part 6. Appeals

Any student who has been suspended from financial aid has the right to appeal their status based on extenuating circumstances.

All appeals must be submitted in writing with supporting documentation attached. Results of an appeal will be sent to the student in writing.

Part 7. Additional Elements

Subpart A. Treatment of Grades

Courses for which students receive a letter grade of A, B, C, D, or P are included in the calculation of cumulative credit completion percentage as courses successfully completed. Courses for which students receive a letter grade of I, NC, W, F, FN or FW will be treated as credits attempted but not successfully completed. All credits and grades in the major are included in the maximum timeframe calculation.

Subpart B. Audited Courses

Audited courses will not be funded by financial aid and are not included in any financial aid satisfactory academic progress measurements.

Subpart C. Consortium Credits

Credits for which financial aid is received under a consortium agreement will be included in cumulative GPA, completion percentage, and maximum time frame calculations.

Subpart D. Developmental Credits

Developmental credits are included in the cumulative GPA and completion percentage measurement of financial aid satisfactory academic progress. Up to 30 developmental credits are excluded from the maximum timeframe calculation.

Subpart E. Repeated Credits

Students are allowed to repeat a course as often as allowed by the academic policies of the college. For a course that is repeated, the original grade will remain on the transcript but will not be used in the GPA calculation. The grade earned for the most recent attempt will be used in the cumulative GPA calculation. The original course credits remain in the number of attempted credits, but are removed from the credits earned calculation. A student may not receive financial aid for more than one repetition of a previously passed course.

Subpart F. Transfer Credits

Transfer credits accepted by HTC and applied toward students' degree, diploma, or certificate requirements to graduate will apply toward the maximum time frame calculation and percent of completion calculation. If at the point of admission transfer students' prior academic record does not meet the college's minimum cumulative qualitative or quantitative satisfactory academic progress standards, HTC may immediately place the student on financial warning or suspend financial aid eligibility, subject to the conditions under which the student is admitted to the institution.

Subpart G. Withdrawals

Credits for which a grade of "W" is received are considered attempted credits but not successfully completed credits. A grade of "W" does not impact GPA, but does negatively impact the cumulative completion percentage and counts toward the maximum time frame.

Student Code of Conduct

Hennepin Technical College recognizes that all students have responsibilities as citizens and as members of the college community. Student responsibilities include regular attendance, punctuality, positive relationships with other students and staff, appropriate behavior and attitude, and acceptable progress, all of which are necessary to assure success in the college. Policy 3.6 Student Code of Conduct is available at Policies and Procedures.

Student Educational Records

The activities of Hennepin Technical College are administered in accordance with a variety of federal and state laws, including The Family Educational Rights and Privacy Act (FERPA), the Minnesota Government Data Practices Act, Minnesota State Board policies, and assorted rules and regulations, as well as staff and student rights and responsibilities, as they relate to student educational records. For more information concerning applicable College and system policy, go to: HTC Policies and Procedures or Minnesota State Board Policies.

The Family Education Rights and Privacy Act (FERPA) protects a student's right to privacy concerning their educational

records. There are some types of information such as grades, financial aid, class schedules, or conduct records that family members might like to receive, but FERPA guidelines prohibit HTC from disclosing information without written consent from a students. This means, that even if a family member or another third party is paying the bills, they cannot access a student's educational or financial records with the student's consent. FERPA affords student certain rights with respect to their education records: They are:

1. **The right to Inspect and review the student's education records within 45 days of the day the College receives a request for access.** Students should submit to the Office of the Registrar or other appropriate official, written requests that identify the record(s) they wish to inspect. The College official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the College official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. **The right to request the amendment of the student's education records that the student believes are inaccurate or misleading.** Students may ask the College to amend a record that they believe is inaccurate or misleading. They should write the College official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the College decides not to amend the record as requested by the student, the College will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. **The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent FERPA authorizes disclosure without consent.** One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the College in an administration, supervisory, academic or research, or support staff position (including health or medical staff) and also clerical staff who transmit the education record; a person or company with whom the College has contracted (such as an attorney, auditor, or collection agent); a person who is employed by Hennepin Technical College Security Department acting in a health or safety emergency; or a student serving on an official committee, such as disciplinary or grievance committee, or assisting school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility. Equal Opportunity and Nondiscrimination in Employment and Education. Min

Student Education Records College Policy. Federal law and state statue allow current and former students access to their education records. While the primary record is located in the Office of the Registrar, other records may be located in Admissions, Financial Aid, Business Office, Student Life and Career Development, Student Affairs and academic departments. For more information refer to policy 3HTC1, Student Data Privacy at: hennepintech.edu/policy

Hennepin Technical College has designated the following items as Directory Information. As such, this information may be released to the public without the consent of the student: name, dates of enrollment and/or registration, major field of study, degree, diploma, certificates earned, and special student recognition/achievements. Directory information does not include identifying data which references religion, race, color, social position or nationality. Students may request that directory information be kept private by contacting the Office of Registrar.

Student Review and Consultation

Students have the right to appropriate levels of participation in college decision making. Each campus' Student Senate appoints students to college committees and meets regularly with college leadership. For details view Minnesota State Policy 2.3 and Procedure 2.3.1 Student Involvement in Decision Making at Minnesota State Board Policies.

Emergency Information

Emergency Closings

In the event of inclement weather or other emergency closings, official Hennepin Technical College closing notifications will be broadcast on all metro area television stations (WCCO, KSTP, KMSP and KARE). Notification of campus closures and emergencies will be posted on the HTC webpage, Facebook and Twitter accounts, and also sent to all Star Alert™ users.

Star Alert™

The Star Alert™ system sends messages to you through cell phone text messaging and email during emergencies that threaten life, safety, or severely impact normal campus operations. These messages may be weather-related alerts, all clear notifications, timely warnings or other situations that impact campus safety.

Enroll on the HTC Public Safety webpage at Star Alert.

Everyone who regularly comes to Hennepin Technical College is urged to register for this valuable service. In addition to sharing emergency information prior to your arrival on campus, it also supports wireless notification in a timely manner in the event that the campus computer and telephone systems are compromised.

Emergency Procedures and Drills

Emergency Response Guides and posters are posted throughout campus. Follow the directions given by HTC faculty and staff during an emergency. All students, staff and faculty are required to evacuate the building when instructed to do so.

Emergency Evacuation Accommodations

If you are a student with a mobility or sensory challenge, please work with your instructors to ensure they are aware of your needs so they may better assist you in the event of emergency evacuations or drills. We also ask that you contact one of the following individuals as soon as you register for classes to discuss safe evacuation practices, and identify areas of rescue assistance.

- Michelle Obergfoll, Interim Director of Academic Support Programs, Brooklyn Park Campus (763) 488-2477
- Campus Public Safety, EPC Campus (952) 995-1433
- Randy Roehrick, Director of Public Safety, Brooklyn Park Campus, Eden Prairie Campus, and Law Enforcement and Criminal Justice Education Center (952) 995-1525

Public Safety and Security

Crime Awareness and Campus Security Act

Hennepin Technical College's Public Safety publishes an Annual Security Report, detailing three years of campus-specific crime statistics, reporting procedures and safety information. This report is made available to the College community as required by the Clery Act and can be found on the HTC Public Safety webpage.

The Annual Security Report is available at each Public Safety office, and copies are available upon request by contacting the HTC Director of Public Safety at 952-995-1525. HTC maintains a Crime log at each Public Safety office, which is available for review on request.

HTC encourages all students and College community members to be fully aware of safety and security issues on and around the campus and to report illegal and inappropriate activities. Personal awareness and applying personal safety practices are the foundation of a safe community.

Security and Safety

In an effort to ensure optimal student safety, all students are expected to comply with instructions from Hennepin Technical College faculty, staff, and emergency responders. Emergency Response Guides and posters are posted throughout the campus. These guides identify actions to take during a fire drill, severe weather, fire, medical emergencies, and lockout/lockdown events. Campus-specific guides can be found on the HTC Public Safety webpage, or a copy can be obtained from the HTC Director of Public Safety.

Abandoned Personal Property

Hennepin Technical College is not responsible for loss of personal property left in classrooms, labs, or in any other area in or around the college. Lost and found is located in the Public Safety Office at each campus. For further details on Policy 6HTC.3 Abandoned Personal Property, visit Policies and Procedures.

Accident Reporting

If an injury should occur at the college, it must be reported to Public Safety personnel and an accident report form must be completed immediately. When emergency medical services are necessary, 911 is called and victims are transported to the nearest emergency treatment facility. Students electing to decline medical treatment must sign a waiver form provided by the emergency responders. Students are responsible for the cost of their medical insurance and treatment while enrolled at Hennepin Technical College.

Alcoholic Beverages or Controlled Substances on Campus

HTC adheres to the federal Drug Free Schools and Campuses Act (DFSCA) and Minnesota State Colleges and Universities Board Policy 5.18 which prohibits the unlawful possession, use, or distribution of alcohol and illicit drugs by students and employees on the college premises, or in conjunction with any college-sponsored activity or event, whether on- or off-campus. View Policy 5.18 Alcoholic Beverages or Controlled Substances on Campus at Policies and Procedures.

For a list of community area substance abuse treatment center referrals, visit Community Resources

Animals on Campus

Animals are not allowed on campus unless there is a valid educational purpose as determined by instructors or authorized college personnel. Service animals are an exception to this policy.

Background Study of Students in Health and Child Care Programs

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents of licensed facilities.

Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Bloodborne Pathogens and Communicable Diseases

Hennepin Technical College will eliminate or minimize student's occupational exposure to blood or other body fluids and comply with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030.

HTC respects the rights of individuals with a communicable disease to education, to privacy, and to be free from discrimination. Hennepin Technical College also acknowledges the rights of others in the system to be educated in a safe environment and the need to educate administrators, faculty, and students about preventing and reducing the risk of transmission of communicable diseases.

Students with communicable diseases will be excluded from attending school in their regular classrooms if their attendance creates a substantial risk of the transmission of illness to other students or employees of the college. View Policy 5HTC.3 Communicable Diseases at Policies and Procedures.

Children on Campus

Due to disruption and possible risk of harm, children may not be left unsupervised on the college campus. This includes areas such as the cafeteria, student common areas, library, Veterans Resource Center, Student Computer Lab, Learning Resource Center, Writing/Math Centers, and hallways. Children are not allowed in classrooms or labs.

Hepatitis

Hepatitis is a serious disease caused by a virus that attacks the liver. There are three different types of Hepatitis, identified as A, B, and C, each one with different symptoms and different levels of seriousness.

Students should be aware of the dangers of this disease and are encouraged to visit the HTC website and the Centers for Disease Control and Prevention website for more information about the disease and how to prevent it.

Immunizations

Minnesota Statute MS. 135A.14 requires all students born after 1956 be immunized against diphtheria, tetanus, measles, mumps, and rubella, allowing for certain specified exceptions. No proof of immunization is needed from students who are assumed to be up-to- date with their immunizations due to requirements imposed by their previous school enrollment, such as students who graduated from a Minnesota high school in 1997 or later.

Insurance

All students are required by federal law to carry health insurance. Students enrolled in some courses will be required to carry liability insurance coverage.

Latex Free

Hennepin Technical College promotes a latex free environment.

Parking

Student parking is available at each campus. Parking fees are included in tuition and fee costs. Parking permits are not issued for students. Each campus has spaces/lots reserved daily for the use of visitors, staff, and faculty. The staff, faculty, and visitor lots/spaces are reserved Monday – Friday between the hours of 7am -4pm. Public Safety actively enforces parking in the reserved spaces/lots, and will issue $25 citations for violations. Handicapped parking spaces are available at each campus. Public Safety provides escorts to all campus parking areas on request.

For more information, visit Public Safety for Parking Guidelines and maps.

Possession or Carry of Firearms and Other Weapons

No student is permitted to carry or possess a firearm on college property except as otherwise provided in the policy. View Policy 5.21 Possession or Carry of Firearms and Other Weapons at Policies and Procedures.

Safety

Safety is a high priority at Hennepin Technical College. Every attempt is made to comply with safety standards. Safety instruction is included in the program curriculum. All students must know the hazards associated with the educational experience and be fully educated on the proper use and operation of any tool before beginning an assignment. Machine guards must be in place and adjusted to safeguard operators from injury. The proper tools must be used to complete a job safely and effectively.

Personal protective equipment (PPE) must be worn and used in designated on-campus and off-campus instructional areas. Protective eyewear must be worn in designated on-campus and off-campus instructional areas and any other locations where grinding, chipping, sandblasting, welding, and/or chemical hazards exist. If you have questions on proper PPE, please consult with your instructor.

Minnesota State Law provides that every person shall wear industrial quality eye protection in designated areas. Students must purchase their own protective eyewear, which is available at the campus bookstore. Contact lenses may not be worn in designated areas without the addition of safety glasses. Approved hard hats must be worn in designated on-campus and off-campus instructional areas and in any location where there is a chance of objects falling from above.

Students who do not comply with safety requirements are subject to disciplinary action.

Sexual Violence

Sexual violence is an intolerable intrusion into the most personal and private rights of an individual, and is prohibited at Hennepin Technical College. HTC is committed to eliminating sexual violence in all forms and will take appropriate remedial action against any individual found responsible for acts in violation of this policy. Acts of sexual violence may also constitute violations of criminal or civil law, or other Minnesota State Colleges and Universities Board Policies that may require separate proceedings. To further its commitment against sexual violence, HTC provides reporting options, an investigative and disciplinary process, and prevention training or other related services as appropriate. View Policy 1B.3 Sexual Violence at Policies and Procedures.

Sexual Violence

Sexual violence includes a continuum of conduct that includes sexual assault, non-forcible sex acts, dating and relationship violence, stalking, as well as aiding acts of sexual violence.

Sexual Assault

Sexual assault means an actual, attempted, or threatened sexual act with another person without that person's consent. Sexual assault is often a criminal act that can be prosecuted under Minnesota law, as well as form the basis for discipline under Minnesota State Colleges and Universities student conduct codes and employee disciplinary standards. Sexual assault includes but is not limited to:

1. Involvement without consent in any sexual act in which there is force, expressed or implied, or use of duress or deception upon the victim. Forced sexual intercourse is included in this definition, as are the acts commonly referred to as "date rape" or "acquaintance rape." This definition also includes the coercing, forcing, or attempting to coerce or force sexual intercourse or a sexual act on another.
2. Involvement in any sexual act when the victim is unable to give consent.
3. The intentional touching or coercing, forcing, or attempting to coerce or force another to touch an unwilling person's intimate parts (defined as primary genital area, groin, inner thigh, buttocks, or breast).

4. Offensive sexual behavior that is directed at another such as indecent exposure or voyeurism.

Dating and Relationship Violence

Dating and relationship violence includes physical harm or abuse, and threats of physical harm or abuse, arising out of a personal intimate relationship. This violence also may be called domestic abuse or spousal/partner abuse and may be subject to criminal prosecution under Minnesota state law.

Stalking

Stalking is conduct directed at a specific person that is unwanted, unwelcome, or unreciprocated and that would cause a reasonable person to fear for her or his safety or the safety of others or to suffer substantial emotional distress.

Affirmative Consent

Consent is informed, freely given, and mutually understood willingness to participate in sexual activity that is expressed by clear, unambiguous, and affirmative words or actions. It is the responsibility of the person who wants to engage in sexual activity to ensure that the other person has consented to engage in the sexual activity. Consent must be present throughout the entire sexual activity and can be revoked at any time. If coercion, intimidation, threats, and/or physical force are used, there is no consent. If the complainant is mentally or physically incapacitated or impaired so that the complainant cannot understand the fact, nature, or extent of the sexual situation, there is no consent; this includes conditions due to alcohol or drug consumption, or being asleep or unconscious. A lack of protest, absence of resistance, or silence alone does not constitute consent, and past consent of sexual activities does not imply ongoing future consent. The existence of a dating relationship between the people involved or the existence of a past sexual relationship does not prove the presence of, or otherwise provide the basis for, an assumption of consent. Whether the respondent has taken advantage of a position of influence over the complainant may be a factor in determining consent.

Reporting Procedure

Complainants of sexual violence may report incidents at any time, but are strongly encouraged to make reports promptly in order to best preserve evidence for a potential legal or disciplinary proceeding.

Complainants are strongly encouraged to report incidents of sexual violence to law enforcement for the location where the incident occurred. Complainants are also encouraged to contact the local victim/survivor services office, counseling and health care providers, campus Title IX coordinator, or HTC Public Safety authorities for appropriate action.

Personal Empowerment

Below are some things to keep in mind to ensure your safety and the safety of others.

- No means no.
- Know that drinking and drug use can impair your judgment.
- If you drink, drink responsibly.
- Listen carefully. If you feel you are getting a mixed message, ask for clarification.
- Remember that sexual assault is a crime.
- Don't assume that someone wants to have sex because of the way they are dressed, they drink (or drink too much), or agree to go to your room.
- Don't assume that if someone has had sex with you before that they are willing to have sex with you again.
- Don't assume that if your partner consents to kissing/other sexual activities, they are consenting to all sexual activities
- Be aware that having sex with someone who is mentally or physically incapable of giving consent is rape.
- If you have sex with someone who is drugged, intoxicated, passed out, or is otherwise incapable of saying no or knowing what is going on around them, you may be guilty of rape.

Don't Be a Bystander

It is everyone's responsibility to make HTC a safe and respectful campus. If you see something that doesn't seem right, don't be a bystander, do something or get help to do something!

Additional resources can be found at Community Resources

Portions of this section are adapted from the Minnesota State Personal Empowerment through Self-Awareness Module.

Tobacco Free Campus

Hennepin Technical College is tobacco free. View Policy 5HTC.6 Tobacco Free Policy at Policies and Procedures.

Technology Services

HTC provides technology resources to all enrolled students, faculty and staff. The college Information Technology Department takes pride in providing high-quality support and service.

For college-related technical assistance, please contact the IT Helpdesk at (952) 995-1411.

College Email Account

College provided email is the official means of student communication from the college. It is also how you are notified of any registration waitlist information and any online class communication. Students will automatically receive an email address when they are enrolled and access to email is through Microsoft Office 365. Technical support for student email is provided from the student computer lab on each campus. Student email will be provided for one year after the last semester a student is enrolled.

College Technology Use Policy

All technology resources are the property of HTC. The use of technology resources is a privilege. Students are required to abide by HTC's Policy 5.22 Acceptable Use of Computers and IT Resources. The policy can be viewed at Policies and Procedures.

D2L

D2L or Desire to Learn is a course management system. A D2L course site allows anytime, any-where access to syllabi, readings, multimedia files, electronic drop boxes, online quizzes, communication, grading, student progress reports, etc. D2L accounts are activated the day after a student registers for a course.

eServices

Using your StarID and password, you have the ability to access a variety of eServices:

- Register for classes
- Update your address, phone numbers, and email address
- View your grades by term
- View your complete HTC academic record
- View your Interactive Degree Audit Report (DARS)
- View the status of your Financial Aid
- View your Financial Aid Award Letter
- Accept awarded student loans
- View your account for any balance due
- Pay your HTC account using a credit card

Visit eServices.

Learning Commons

Each campus has a Learning Commons, with 10 computers. This area is open to all during normal campus hours.

StarID

StarID is a single username login for D2L, eServices, and other services used by HTC students and employees. Student StarID support is available in the Student Computer Lab.

Student Computer Labs

Hennepin Technical College offers students internet access and a variety of software programs in an open lab environment. For assistance with any college technology, you may visit the Student Computer Lab. Only college students with a current HTC student ID card may utilize the Student Computer Lab. Hours for the Student Computer Lab are posted outside of the lab.

Student ID Cards

All students are required to obtain an HTC student ID card. Student ID cards will be required for checkout of library materials and to utilize the Student Computer Labs. Student ID cards are issued by Public Safety staff during New Student Orientation or in the Public Safety Office. To obtain a student ID card, students must provide a current course schedule and photo ID. The first student ID card issued to a student is free; replacement cards and/or name changes are $10 each. The $10 fee must be paid at

the Tuition Office before the replacement card can be issued.

Enrollment Guidelines

Selecting a Major

A major is the specific A.S. degree, A.A.S. degree, diploma, or certificate in which a student is enrolled. Students typically declare a major during the admissions process. HTC grants some or all awards listed below in each program of study. Students who have questions about their major selection or changing their major should meet with a student success advisor for assistance.

- Associate in Science (A.S.) Degree: A.S. degrees prepare students to transfer to a baccalaureate program in a related scientific, technical, or professional field.
- Associate in Applied Science (A.A.S.) Degree: A.A.S. degrees prepare students for positions in specific occupational areas that typically require two years of education with a general education component.
- Diploma: Diplomas prepare students for positions that typically require one to two years of education with general education included.
- Advanced Technical Certificate: Advanced Technical Certificates prepare students for career advancement and enhancement opportunities that require less than one year of education.
- Occupational Certificate: Occupational Certificates prepare students for positions that require less than one year of education. Occupational Certificates have a credit range from 9-30 credits.

Visiting Students/Non-Degree Seeking

Students who wish to enroll in classes at Hennepin Technical College (HTC) but not complete a degree are called visiting students. This would include students seeking to enroll in courses for enrichment purposes or career advancement. Visiting students do not apply to the college.

Visiting students must meet the necessary prerequisites as published on the college website to be eligible for registration. Students who do not complete the placement testing prior to enrolling in courses will be required to do so after attempting four credits.

Visiting students register and pay for classes using the Minnesota State eServices site. To make a payment, click the Bills and Payments link following your completed registration. Any questions regarding payment may be directed to the Business Office. Non-degree seeking students are not eligible for financial aid.

Senior Citizens (62 Years of Age or Older)

Minnesota residents, age 62 or older, are eligible to attend Hennepin Technical College at a reduced fee of $20 per semester credit. The senior rate fee will only apply to courses taken for credit. There is no tuition fee for auditing courses. Seniors must pay for books, supplies, and materials. Seniors will also be charged for specific course fees, student association, technology, and parking (unless online course). Senior rate registrations will be accepted on a space available basis the day of the first class meeting. Senior citizens wishing to guarantee their enrollment in a course may register earlier, but will be required to pay full tuition and fees. Coursework paid by senior citizens at the regular tuition rate prior to the date on which the reduced rate becomes available cannot be dropped and subsequently added in order to receive the reduced rate. All college policies apply to these students including Satisfactory Academic Progress standards.

Post-Secondary Enrollment Options (PSEO) for High School Students

High school students with demonstrated academic achievement and the maturity to succeed in a college environment may be admitted to Hennepin Technical College. Post-Secondary Enrollment Options (PSEO) programs are intended to promote a rigorous curriculum and to provide a wider variety of options to students from public, non-public, home school, or American Indian-controlled tribal contract or grant schools eligible for aid under section 124D.83. The Post-Secondary Enrollment Options program allows sophomores, juniors, and seniors the opportunity to earn college credits or to use those credits toward the completion of high school graduation requirements. Enrollment is required and is determined on a space available basis.

Eligibility Criteria for Juniors and Seniors

- Must be a high school junior or senior in any public, non-public, home school, or American Indian-controlled tribal contract or grant schools eligible for aid under section 124D.83.
- Students must meet the following class rank requirements:
  - Seniors: Class rank at top half of your class

- Juniors: Class rank at top third of your class

OR

- Students who do not meet class rank requirements are asked to submit a letter of recommendation from a high school counselor or teacher.

- Completion of the HTC Accuplacer Test
- Remedial, developmental, and other courses not considered college level will not be paid for by the PSEO program.

Eligibility Criteria for Sophomores:

A student who is in 10th grade must meet or exceed scores on the 8th grade Minnesota Comprehensive Assessment in reading and must meet any the other course prerequisites or course enrollment standards established by the college, including but not limited to assessment test scores, program admission, or other requirements, to enroll in one career or technical education course. If the student receives a grade of "C" or better in the course, the student shall be allowed to take additional career or technical education courses in subsequent terms. A career or technical course is a course that is part of a career and technical education program that provides individuals with coherent, rigorous content aligned with academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current and emerging professions and provides technical skill proficiency, an industry recognized credential, and a certificate, diploma, or an associate degree.

A student who first enrolls in technical courses under this provision while in 10th grade and wishes to enroll in general education courses as an 11th or 12th grade student must achieve the required Accuplacer scores prior to enrollment.

To Apply for PSEO Admission at Hennepin Technical College

- Meet with your high school counselor to see if PSEO is the right fit for you. Then complete the current Notice of Student Registration form and submit it to HTC.
- Apply to HTC online.
- Submit official high school transcript to HTC
  - Home schooled students will also need to submit an Immunization Verification eForm
- Register for an accuplacer placement test online
- Attend a mandatory on campus orientation and register for classes

Testing

Placement Testing

In accordance with Minnesota State's board policy, testing is administered to place students into appropriate courses that ensure the best chance for success in college. Students who declare a major or have attempted four cumulative credits are required to complete the placement test. Students are allowed to retest once in a three year period in reading, writing, computer literacy, and once in a two year period for mathematics. Students are charged a retest fee of $10. Valid picture identification is required to test. If accommodations are needed based on a disability, contact Disability Services prior to testing.

It is recommended that you refresh your skills before you take the placement tests. The tests are meant to indicate your current skill level – not your potential. Study materials are available on the HTC Testing Center website.

Test waivers are based on prior college coursework, ACT/SAT/MCA test scores or acceptable ACCUPLACER test scores from another institution. Students may request a waiver from testing through the HTC Transfer Center, a Student Success Advisor, or Counselor. Students may only enroll in courses appropriate to their assessed skill level and completed prerequisite coursework.

College Level Examination Program

The College-Level Examination Program® (CLEP) helps you receive college credit for what you already know. More information about CLEP testing is available on the HTC Testing Center website.

Transfer of Credit

Transfer of Credit to Hennepin Technical College

Transfer students with prior coursework at another college or university should provide official transcripts to the HTC Transfer Center, Brooklyn Park or Eden Prairie Campus, for transfer evaluation. Any college level course will be considered for transfer at the discretion of the college. For a detailed explanation of the college transfer policy, visit Transfer Your Credits to HTC.

Minnesota Transfer Curriculum (MnTC) at Hennepin Technical College

By completing at least 40 credits from all ten goal areas, a student can finish the MnTC and transfer this entire block to other Minnesota State colleges or universities. A list of the MnTC courses is available on the HTC website at Minnesota Transfer Curriculum.

Residency Requirements

To be eligible for an A.S. degree or A.A.S. degree, 20 of the credits must be earned at Hennepin Technical College. To be eligible for or a diploma or certificate, a student must earn one-third of the credit requirements at Hennepin Technical College.

Transfer of Credit to another Post-Secondary Institution

Credit courses in majors at Hennepin Technical College are intended to provide employment skills and, in some situations, transfer to other colleges. The number of credits that may be accepted in transfer is determined by the receiving institution. Hennepin Technical College has articulation agreements with several universities for transfer of A.S. or A.A.S. degrees toward Bachelor degrees. For additional transfer information, visit www.mntransfer.org

Bachelor Degree Opportunities Available

Hennepin Technical College has 2 + 2 agreements with several universities for transfer of A.S. or A.A.S. degrees toward Bachelor degrees. The number of credits that may be transferred is determined by the receiving institution. Students interested in this option may contact an HTC counselor, student success advisor, or may access the information on the HTC website. For additional transfer information, go to www.mntransfer.org

Partner Institutions

Completing a B.A. or B.A.S. degree can help you increase your earning potential and prepare you for professional advancement, as well as personal growth. Since A.S. and A.A.S. degree credits from HTC have already been approved for transfer at many institutions, continuing your education is easier than ever. Contact an HTC counselor or student success advisor to find a partnering university and to learn about your expanded opportunities.

Partnering Universities:

- University of Minnesota – Crookston
- Metropolitan State University
- Minnesota State University – Mankato
- Minnesota State University – Moorhead
- Cardinal Stritch University
- St. Cloud State University
- St. Mary’s University
- Southwest Minnesota State University

Credit for Prior Learning

Test-out

After being admitted to the college, it may be possible to earn credit for courses offered at Hennepin Technical College by successful completion of an exam. This examination may take the form of a written test, an oral examination, or other demonstration of competency administered by the faculty member who instructs the course.

High School Articulation

Articulated College Credit (ACC) is a way for students in grades 10, 11, or 12 to earn technical or community college credit. High school students who successfully complete ACC courses through their high school and establish a transcript at Hennepin Technical College may request to have the ACC credit entered on their HTC college transcript.

Veterans Military Training

College credit for prior military training and experience may be awarded. The standards of the American Council on Education or equivalent standards for awarding credit and the current Hennepin Technical College transfer policy will be used to determine course transfer.

AP, IB, CLEP and DDST

Credits may be awarded to students who have completed the AP, IB, CLEP, or DSST Exams and have scored at or above the level indicated for specific credit.

Grading

Hennepin Technical College provides students with three grading options. Students must declare a grading option at the time they register. A letter grade will be assigned for all courses unless Pass/No Credit or Audit is declared. Term and cumulative grade point average (GPA) is calculated on A, B, C, D, F, FN and F/W grades and is listed on the student transcript.

Letter Grade

Letter grades will be assigned to each course as an evaluation of student performance.

Letter grades of A, B, C, D, F, FN and FW will be used in computation of GPA. A grade of F (including FN and FW) will not satisfy a graduation requirement nor will it count as a course completion for calculation of satisfactory academic progress.

- A: Performance greatly exceeds course requirements (4 quality points per credit)
- B: Performance surpasses course requirements (3 quality points per credit)
- C: Performance meets course requirements (2 quality points per credit)
- D: Performance minimally meets course requirements (1 quality point per credit)
- F: Performance is unsatisfactory (0 quality points per credit)
- FN: Never participated in the course (0 quality points per credit)
- FW: Participation ceased prior to the end of course (0 quality points per credit)
- P: Pass-performance meets course requirements (C or better)
- NC: No Credit-performance does not meet course requirements
- AU: Audit-student registers, pays and attends, but receives no credit (initiated/declared at registration). A student may not audit the same course more than one time.
- I: Incomplete-temporary grade based on written agreement between student and instructor
- W: Withdrawal-Student initiated by deadlines in course schedule

Repeated Courses: When a course is repeated, both courses and grades earned will be shown on the student's transcript. The course that was previously taken is not counted in GPA calculation but will count as an attempted but not completed course for calculation of satisfactory academic progress. The most recent attempt will be used in the review of award requirements.

Grade Point Average (GPA)

GPA is determined by adding all grade points earned and dividing by the sum of all credits attempted in courses where a letter grade of A, B, C, D, or F (including FN and FW) were received. GPA is computed on a term and a cumulative basis.

GPA calculation does not include test-out grades, transfer grades, advanced placement, portfolio, or articulated courses. Grades of P, NC, W, and AU will not be used in computation of GPA.

Interactive Degree Audit Report (DARS)

DARS is a tool used by students, advisors, and the graduation evaluator. It produces advising information illustrating a student's progress in fulfilling the graduation requirements of their degree, diploma or certificate. DARS will assist the student with the following:

- Identifying all the requirements needed to complete a specific degree, diploma or certificate
- Indicate which courses have already been completed, and how they apply
- Specify which courses are needed to graduate
- Assist the student and advisor with academic and career counseling

The DARS audit is designed to help the student identify and understand current academic requirements for program completion. The DARS audit is not a transcript. It is not intended to report student achievement to outside parties. Federal law prohibits transmission to a third party.

It is the responsibility of the student to complete all requirements for the selected program whether or not they have been identified on the HTC DARS audit. Students are encouraged to review the college catalog or academic planning guide and report any inaccuracies found on the HTC DARS audit to a student success advisor.

To obtain a DARS Audit, a declared major is required.

Visit eServices for your DARS.

Transcripts

A transcript is the official record of a student's academic history. An official transcript contains the Registrar's signature and school seal, and is delivered to the recipient directly from the school either electronically or in a sealed envelope with the schools logo.

Hennepin Technical College has authorized the **National Student Clearinghouse** as our online transcript ordering service. An official transcript release consent will be provided when the order is submitted online. The official academic transcript is available for a fee. There is no fee for an unofficial transcript which may be obtained through eServices or by presenting a picture ID at the OneStop Center.

Grade Appeal

Students who feel their grade is inaccurate and cannot resolve the issue with their instructor may appeal their grade through the use of the grade appeal procedure. Grade appeals are submitted to the program dean only if there is no resolution after meeting and discussing the concerns with the faculty member. Grade appeal forms are available online. Appeals to change grades must be submitted within one term of completion of the course.

Maximum Credit Load

The maximum credit load per term at HTC is 21 credits. The maximum credit load within the Minnesota State system is 22 credits per term. Students may not exceed this limit unless their grades are above average and they have obtained authorization from their faculty advisor or counselor prior to registration.

Student Recognition

President's List

Students who are seeking a degree, diploma, or certificate are eligible for the President's List. The President's List shall be determined each term and noted on the student's transcript based on the following:

- A declared major
- A term GPA of 3.5 or greater
- Enrollment status of 6 or more credits during the term

Only courses with grades A-F (including FN and FW) are considered in the calculation of the GPA and enrollment status.

Graduation

Award

An award is granted for the completion of the requirements of an A.S. degree, A.A.S. degree, diploma, or certificate.

Graduation Checklist

Follow the graduation checklist to file for graduation and to participate in the graduation ceremony. This checklist must be completed to be eligible to participate in the graduation ceremony. Apply early to ensure you receive all of the information for the graduation ceremony.

- Meet with your program faculty advisor to review award requirements and to discuss whether you will complete award requirements at the conclusion of the semester.
- Complete an Application for Award form for each degree, diploma, or certificate you are applying for and have your program faculty advisor sign it. Check with the OneStop Center if you are not sure you have completed an Application for Award.
- Submit the Application for Award form to the OneStop Center. If you would like to participate in the Commencement Ceremony, check the box on the form and your student account will be billed a $10 non-refundable commencement fee.
- Verify that your most current mailing address is on file through your eServices account.
- If you are planning to test out of a course, all test-outs must be scheduled, completed, and transcripted before the deadline.
- Course transfers must be transcripted before the deadline. If you are transferring courses from another college or transferring an articulated course, you should confirm that your transfers have been completed by printing a DARS audit. If you have courses from another Minnesota State institution that have not been transferred, submit an eTranscript Retrieval form. Please contact the Transfer Center with any questions.
- Watch your my.HennepinTech email for a response from the Registrar's Office on your graduation status.
- Refer to the graduation website under Current Students for more information regarding the Commencement Ceremony.

Honors

Students who have a cumulative GPA of 3.5 or greater at the end of the term prior to graduation will be recognized at the graduation ceremony. The cumulative GPA takes into account any credit based course taken at HTC prior to the term of graduation. A student's honor status cannot be changed on the basis of program GPA or grades earned in the final semester.

Paying for College

Financial Aid

To apply for financial aid at Hennepin Technical College, a student must complete the Free Application for Federal Student Aid (FAFSA) at www.fafsa.gov and include HTC's school code, 010491. Once this step is complete, view your eServices account to check your financial aid status. Hennepin Technical College hosts FAFSA Complete sessions designed to assist students, step by step, in completing the FAFSA. Sign up for a FAFSA Complete session on the HTC website at: hennepintech.edu/getstarted

After the Financial Aid Office has all the required paperwork and the student has declared a major that is at least 16 credits in length, a notification email will be sent to the student instructing them to obtain an award letter on eServices.

The award letter shows what the student will receive at each credit level and it also shows how much the student may borrow in Federal Direct Stafford loans. The award letter shows the awards for both fall and spring terms. An award letter will be issued for summer term only if a student enrolls for classes for summer term.

Awards on the award letter may include the following. Not all students will be awarded all awards.

- Federal Pell Grant
- MN State Grant
- Federal Supplemental Educational Opportunity Grant (SEOG)*
- Federal Direct Stafford Loan, Subsidized, and/or Unsubsidized
- Work Study, Federal or State*

*Funds for these programs are limited and are awarded on a first-come basis

Required Semester Credit Level for Federal Grants (all terms)

Full-time	12 or more credits
Three-quarter time	9 to 11 credits
Half-time	6 to 8 credits
Less than half-time	1 to 5 credits

Required Semester Credit Level for Minnesota State Grant (all terms)

Full-time	15 or more credits

Minimum enrollment level for a MN State Grant is 3 credits. Awards vary at each credit level.

Required Semester Credit Level for Federal Direct Stafford Loans

Half-time or greater	6 or more credits

Yearly Federal Direct Stafford Loan Limits

Dependent Student Grade Level One (completed less than 30 credits):	$5,500
Dependent Student Grade Level Two (completed 30 or more credits):	$6,500
Independent Student Grade Level One (completed less than 30 credits):	$9,500
Independent Student Grade Level Two (completed 30 or more credits):	$10,500

Other loan options not listed on the HTC award letter

- Federal Direct PLUS (Parent Loan for Undergraduate Students)
- The SELF Loan (MN State Aid Program)
- Private education loans

Other grant options at HTC but not listed on the HTC award letter

The MN Child Care Grant is available for students with child care costs. A separate application is required for this grant and awarding is based on the availability of funds. Priority is given to returning child care grant recipients.

Transferring Financial Aid to Hennepin Technical College

- The financial aid awards at one school do not automatically transfer to another school.
- The student transferring to our school (010491) must add our school code to their FAFSA.
- All financial aid, including future loan disbursements, at the first school must be cancelled by the student. Failure to cancel loans could result in a delay of receiving loans at HTC.

Pell Census Date (Federal Pell Grant Recipients Only)

Pell Grant awards do not increase automatically for students who add a class after the Pell census date, which is a date where enrollment levels are “locked” for Pell recipients.

Students who add courses after the Pell Census Date are not eligible for the Pell Grant without filing a Pell Census Appeal form with the financial aid office. For unique situations, such as a course cancellation of one section causing enrollment in a different section, there is a Pell Census Date Appeal Form. If the appeal is approved, the late add course will be made Pell eligible.

Aid Disbursement

Financial aid disbursement begins the third week of each term. Disbursements are made weekly in the form of direct deposit or paper check (paper checks are not available for pick up) but are made no later than 14 days after the credit balance ocurrs. Adjustments to aid may be made after disbursement of aid if a student’s course schedule changes. Requests to cancel a loan must be made in writing to the Financial Aid Office and if the loan has been disbursed, the amount to be canceled must be returned to HTC.

Purchasing Textbooks and Required Supplies with Financial Aid

Students who have submitted a FAFSA will be allowed to charge textbooks and required supplies in the Campus Store prior to financial aid disbursement. The amount of eligibility varies by program of study. Students whose FAFSA or academic record indicates significant issues impacting aid eligibility may not receive this service until those issues are resolved.

Withdrawal from College/Return of Title IV Funds

Federal law specifies how the college must determine financial aid eligibility if a student withdraws from the college or does not begin attending a course. If a student completely withdraws from all credits for a term before the 60% point of that term or does not begin attending a class, the financial aid disbursed may be recalculated according to the State and Federal Return of Title IV Funds. Return of financial aid calculations are performed no later than 30 days after determining the student withdrew or stopped attending classes. Funds are returned to the Federal/State Aid Programs no later than 45 days after determining the student withdrew or stopped attending classes.

Students earn financial aid in proportion to the time they are enrolled at the college. The unearned share of financial aid is returned in the following order: Federal Direct Unsubsidized Stafford Loan, Federal Direct Subsidized Stafford Loan, Federal Direct PLUS Loan, Federal Pell Grant, Additional Federal Pell Grant, Federal SEOG. State financial aid programs are refunded to the Minnesota Office of Higher Education/State of Minnesota. The student may need to repay a portion of financial aid he/she received.

Failure to attend a class may lead to the return of Federal financial aid, but it does not qualify as a withdrawal from the college unless the student completes a withdrawal form.

If you do not receive all of the funds that you have earned, you may be due a post-withdrawal disbursement. If the post-withdrawal disbursement includes loan funds, you may choose to decline the loan funds so that you don't incur additional debt. HTC may automatically use all or a portion of your post-withdrawal disbursement (including loans funds if you choose to accept them for tuition and fees). For all other charges, HTC needs your permissioin to use the post-withdrawal disbursement but the funds will be offered. However, it may be in your best interest to keep the funds to reduce your debt at the school.

Attendance and Last Date of Attendance (LDA)

Attendance is required for students receiving financial aid. Financial aid recipients who do not attend their courses will have an adjustment made to their aid. The aid adjustment could result in a balance due to the college and a late charge.

In some cases, there may not be a change in the aid because the student's new credit level is still within the award's credit range. Students who have applied for financial aid and do not plan on attending must drop their courses before the fifth (5th) day of the term.

For students not receiving a passing grade in a course, the financial aid office must determine the last date of attendance (LDA) to be in compliance with federal regulations. To meet this requirement, the school implemented a process for determining why a grade of F was issued.

Below are the reasons for an F and the impact on financial aid:

Reason for F	**Impact on Financial Aid**
Never attended/participated*	Not eligible for financial aid
Stopped attending classes**	Reduction in financial aid
Attended class and didn't pass the class	Financial aid does not change

* Participation, in this context, refers to student involvement in academic activities including, but not limited to, classroom attendance and/or online course activities. Logging into D2L or other online course delivery platforms alone does not constitute participation in an academic activity.

** If a student stops attending one class after aid is disbursed and completes other class(es), adjustments to aid may need to be made.

Third Party Authorization/Agency Funding

The third party billing process allows agencies and employers to pay a student's educational costs. The agency or employer submits a written authorization based on information the student provides to them. Use of the Hennepin Technical College Third Party Authorization for Payment form (available online) is preferred, but the authorization may be in the form of a purchase order or the third party's own form, as long as all required information is provided. A Third Party Authorization must be received by the college by the tuition payment deadline if the student's registration is not to be cancelled. If the third party paperwork cannot be submitted before the tuition payment deadline, the student should pay the outstanding balance or enroll in the NELNET/FACTS tuition payment plan until the third party paperwork is received and processed. Any payments made by the student will be refunded once the third party authorization is in place.

Once the semesters' add/drop period has passed and financial aid has applied to student accounts, the college will invoice the agency or employer. The student is ultimately responsible for their educational costs. If for any reason the third party does not pay all or a portion of the student's charges, the student will need to pay any remaining balance.

The college does not accept authorizations for payment that require a course to be completed or a certain grade to be achieved

before payment is made. Students with this type of authorization will need to pay their tuition by the tuition due date and then seek reimbursement from their agency or employer.

Scholarships

Information about scholarships from HTC and other sources is available on the HTC website at: hennepintech.edu/scholarships

The application form for HTC Foundation Scholarships is available on the HTC website. To be considered for scholarships, a student must complete the FAFSA and be making Satisfactory Academic Progress. Additional information pertaining to scholarship eligibility is listed on the application. HTC Foundation Scholarships are based on both merit and/or financial need. At the time of selection and disbursement, scholarship recipients must be making satisfactory academic progress.

Veterans Education Benefits

Any veteran seeking to utilize their education benefits must submit an application to the Veterans Administration (VA). Each semester the student is planning to receive benefits, the college's certifying official must be notified by Veterans Enrollment Certification-Deferment Request eForm. The college's role is to report to the VA the student's enrollment information. This is called the Enrollment Certification.

The certifying official must report any changes to the student's declared major, credit level, address, course schedule, etc., to the VA. Schedule changes after the initial Enrollment Certification may change the amount of benefits.

Hennepin Technical College complies with Minnesota Statue 197.775 which exceeds all criteria of Title 38 United States Code Section 369(e).

Tuition and Fees

Current tuition and certain fee information (see below) can be found on the HTC website. The college establishes a tuition payment deadline for each semester. Full tuition and fees must be paid by this date. For a list of the most current fee amounts, visit: hennepintech.edu/fees

You may pay your tuition bill in full by one of the following methods:

- Pay online: The College accepts VISA, MasterCard, Discover, and e-checks from checking or savings accounts. Online payments apply immediately to your student account.
- Cash, Check, or Credit Card: In person on campus during regular business hours using cash, check, or credit card (VISA, MasterCard, or Discover). The college does not accept credit card payments over the phone.

Students who do not pay their tuition and fees in full by the tuition payment deadline may have their course registration cancelled unless one or more of the following conditions are true:

- The student is enrolled in the Automated Payment Plan.
- The college has received a Third Party Authorization for Payment from an employer or a funding agency sufficient to cover tuition and fees.
- The college has received the FAFSA information electronically from the Department of Education.
- The college has received an advance payment of a scholarship sufficient to cover tuition and fees.
- The student is enrolled as a high school PSEO student and has submitted a three-part form to the registration office authorizing enrollment.
- The student has made a tuition payment equal to 15% of the term's balance or $300 whichever is less.

If none of the conditions mentioned above are true, the student may be subject to a $50 late fee.

Do not rely on the drop for non-payment process as a way to drop your course(s). You are responsible for paying for your course registration.

Students who add courses after the payment deadline must pay the tuition by the Friday of the week the courses were added. After the fifth day of the semester, tuition must be paid at the time courses are added.

Students may view their account balances and make payments through eServices. For more information about tuition payment methods, including the Automated Payment Plan, visit: hennepintech.edu/tuition

Note: In compliance with Minnesota State Board Procedure 7.6.2 Part 4 Subpart C, invoices are not mailed. Students should check their account balances through eServices.

Tuition invoices are not mailed. You are responsible to monitor your student account balance.

Past Due Accounts/Collections

Students who have not paid the balance owed the college will have their records submitted to the Minnesota Department of Revenue for collection in accordance with Minnesota Statute 16D and Minnesota State Colleges and Universities System Procedure 7.6.2 Accounts Receivable Management. Additional collection fees and interest will be assessed on balances submitted for collection.

Automated Payment Plan

The college offers a payment plan from Nelnet/FACTS Management Company, Inc. Nelnet/FACTS is a tuition management plan that provides students with a low cost option for budgeting tuition and fees. It is not a loan program - therefore, you have no debt, there are no interest or finance charges assessed, and there is no credit check. The only cost to budget monthly payments through Nelnet/FACTS is a $25 per semester nonrefundable enrollment fee. To sign up for this payment plan or for more information, visit: hennepintech.edu/tuition

Tuition Rates

Hennepin Technical College is a member institution of the Minnesota State System. The college, in consultation with the Student Senate, develops proposed tuition and fee rates for the academic year, which are submitted to the Minnesota State Board of Trustees for approval. Tuition rates are available on the HTC website. A limited number of courses, including online courses, have approved differential rates. Courses with differential rates are identified in the online course schedule.

Student Activity Fee/Student Life Fee/Student Association Fee

Each student pays a student activity fee and a student life fee on a per credit basis. This fee supports the activities of the Student Senate and the Student Life Board. Each student also currently pays a state student association fee on a per credit basis. This fee is authorized by MN statute and set each year by the Minnesota State College Student Association (MSCSA). These fees are then remitted to the MSCSA to support their activities.

Student Health Fee

Each student pays a student health services fee on a per credit basis. This fee supports activities related to providing health related programming and services.

Parking Fee

All students who park a vehicle on campus are required to pay a parking fee on a per credit basis. The parking fee includes state sales tax.

Technology Fee

Each student registered for credit courses pays a technology fee on a per credit basis.

Personal Property/Service Charge Fees

Some courses may require personal property/service charge fees.

Books, Tools and Other Costs

Students must purchase books, personal tools, other supplies, and special clothing if required. The college furnishes up-to-date equipment in its lab areas. Materials to work on projects may also be provided.

Late Fees

A late fee will be charged on past due accounts.

Placement Retest Fee

Students are allowed to retest once in a three-year period in reading, writing, and computer literacy and once in a two-year period for mathematics. Students are charged a retest fee for a testing session.

Portfolio Evaluation

The fee for Portfolio Evaluation is based on the lecture/lab breakdown of the course.

Non-Sufficient Funds (NSF) Check and ACH/Direct Deposit Fees

The college will apply a service charge to all checks and ACH/direct deposits returned for non-sufficient funds or other reasons as authorized in Minnesota Statute 604-113 subd. 2(a).

Credit by Examination

The fee for testing out of a course by examination is based on the lecture/lab breakdown.

Transcript Fee

Your official academic transcript is available for a fee. To request an office Transcript, visit the National Student Clearinghouse. There is no fee for an unofficial transcript.

Registration for Credit Courses

Currently enrolled students are expected to meet with their faculty advisor prior to registration. All currently enrolled students will register online through their HTC eServices account. In order to attend/participate in a class, students must be registered.

Students are responsible for meeting course prerequisites and/or placement test score requirements. Course prerequisites are identified in the college catalog and on the HTC online course schedule. Students who have not met the course requirements must receive authorization from a faculty advisor, counselor or enrollment advisor prior to registering.

Students are responsible for all tuition and fees incurred by registering for courses subject to the guidelines for adding, dropping and withdrawing from courses and the refund policy described in this catalog. Students may view their account balances and pay online by accessing eServices.

Course Wait List

A course wait list will be established once a course has filled. Students will be responsible for putting themselves on the wait list. Placement on the wait list will be on a first-come basis. In order to be placed on the wait list, the student must have an active my.HennepinTech email account. All wait list notifications will be sent via email and will include changes in current position, offer of an open seat, and removal from the wait list.

Once an open seat offer is made, the student will have a predetermined amount of time to accept the offer. This will be noted in the email that is sent to the student. If the student accepts the offer by registering, the student accepts all financial obligations. If the student does not accept the offer within the specified time frame, the student will automatically be removed from the wait list.

A student may be on multiple wait lists for the same course (different sections).

The course wait list will become inactive on the last business day prior to the start of the term.

Course Information

Technical Courses

Technical courses lead toward an A.S. degree, A.A.S. degree, diploma, or certificate. These courses prepare students to learn the technical knowledge and skill necessary to perform the tasks required for job entry, job enhancement, or job advancement.

General Education

General education is an essential component of a student's success in technical education as general skills are increasingly required for success and advancement in today's ever-changing global work environment. An integrated approach to technical and general education is applied so that technical and general skills mutually reinforce each other. HTC is committed to integrating into all majors the learner outcomes listed in the learner outcome section of this catalog.

General education courses include instruction that imparts common knowledge, broad applicable skills, perspective, and

attitudes to the students. General education courses contain college-level content in communication, critical thinking, natural sciences, mathematical/logical reasoning, history and the social and behavioral sciences, humanities and fine arts, human diversity, global perspective, ethical and civic responsibility, and people and the environment. All general education courses are college level with the exception of developmental and ESOL courses.

Required Courses

Courses listed as required in an A.S. degree, A.A.S. degree, diploma, or certificate must be successfully completed to meet graduation requirements.

Elective Courses

Courses listed as electives in an A.S. degree, A.A.S. degree, diploma, or certificate provide students with the opportunity to select courses to satisfy graduation requirements.

Course Numbering System

Minnesota Transfer Curriculum

The Minnesota Transfer Curriculum represents a coordinated effort among Minnesota State institutions and the University of Minnesota to offer general education courses that may transfer from one institution to another. Hennepin Technical College's 2000 level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

College Level

College-level courses are numbered 1000 or above. Diplomas require all courses to be college-level. A.S. and A.A.S. degrees require general education courses that are numbered 2000 and above.

Developmental Level

Developmental and ESOL courses are numbered 0999 or lower. These courses may be necessary to prepare students for success in college-level coursework but cannot be applied toward an A.S. degree, A.A.S. degree, diploma, or certificate.

Course Prerequisites/Placement Test Requirements

Course prerequisites/placement test requirements are listed in the course description section of the catalog and on the HTC website. Students are responsible for meeting course prerequisites/minimum qualifying placement test scores or obtaining waiver authorization from program faculty, counselor, or an enrollment advisor. A course taken for audit will not satisfy a prerequisite.

Adding, Dropping, and Withdrawing

Students are responsible for understanding the processes and timelines for adding, dropping, and withdrawing from courses, as well as the difference between dropping and withdrawing. Students are encouraged to meet with a student success advisor if they do not understand this process.

Adding Courses

Adding a course means you are officially registered in a course and you assume the responsibility and financial obligation of being an enrolled student.

- Students may add courses during the Add/Drop period, which is the first five days of the term.
- Students may add courses any time during the term if the course has not started, and there are still open seats in the course.
- Instructor permission is required if a student wishes to add a course after the Add/Drop period or after the start date of a late starting course.
- Adding courses may not be done over the telephone. Students must add courses online or in person.

Dropping Courses

Dropping a course means that it will not appear on the transcript.

- Students may drop courses online without penalty during the Add/Drop period, which is the first five days of the term.

- Some courses begin after the Add/Drop period. Students may drop these courses online through the close of business the day after the first class meets.
- Dropping a course within the Add/Drop period will result in a full refund of tuition and fees. Refund checks will be issued within fifteen business days of the drop.
- Failure to attend class does not qualify as a drop. Unless you officially drop a course, you are responsible for full tuition and fees.

Withdrawing from Courses

Withdrawing from a course occurs after the Add/Drop period has ended. Withdrawing is the official notification to the college that you will no longer be attending the course. The course will remain on the transcript, and a W will appear on the transcript in place of a letter grade. A W does not affect a student's GPA; however, it does affect a student's completion rate and may lead to academic warning or suspension.

- The final date for official course withdrawal is the last day on which students may officially terminate their enrollment in a course, and shall be the date on which eighty percent (80%) of the days in the academic term have elapsed.
- If a course does not meet the entire length of the term, the final date for official course withdrawal shall be established as the date on which eighty percent (80%) of the instructional days for the course have elapsed.
- The last day to withdraw for each course can be found on the online schedule.
- Students may withdraw online through eServices. In some cases a student may be required to submit an Add/Drop/Withdraw form to the Registrar's Office.
- Failure to attend class does not qualify as a withdrawal.
- Withdrawing from a course does not result in a refund.

Important Notes about Dropping/Withdrawing

- Dropping or withdrawing from a course may affect a student's financial aid, and may require the student to repay a portion of that aid.
- Students whose cumulative completion rate falls below 66.67% risk being placed on academic warning or suspension.
- Pell Census Date: Courses added after this date are not considered Pell eligible unless approved through a Pell Census Appeal.

Refunds

If a course is cancelled, the college will refund tuition to the student account.

Some courses are scheduled to meet three or fewer sessions. For those courses, a refund will be issued only if the course is dropped 24 hours prior to the first class session.

In some cases, withdrawing from a class may create a tuition refund. If the withdrawal also leads to the return of State and Federal financial aid, then the tuition refund will be used to pay back the financial aid program.

Dropping a Course (Reduction of Course/Credit Load)

Courses Starting the First Week of the Term

Students may drop any course during the first five days of the term (Add/Drop Period) and receive a 100% refund of tuition and fees.

Courses Starting After the Fifth Day of the Term

Some courses have a published start date that occurs after the fifth day of the term. A student who elects to drop a course in this category will be provided a refund of tuition and fees on the following basis:

Course dropped before scheduled start date	100% Refund
Course dropped by the end of the business day following the start date of the course	100% Refund
Courses dropped after the 100% refund period	NO REFUND

Total Withdrawal from Hennepin Technical College

Students who drop all their credits and formally withdraw from the college will receive a prorated refund of their tuition and fees. A Student Withdrawal form must be submitted to the Registration Office in order to determine eligibility for a refund.

Prorated refunds for total withdrawal are based on the following:

Fall and Spring Term

1st through 5th day of the term	100% Refund
6th through 10th day of the term	75% Refund
11th through 15th day of the term	50% Refund
16th through 20th day of the term	25% Refund
After the 20th day of the term	NO REFUND

Summer Sessions

1st through 5th day of the session	100% Refund
6th through 10th day of the session	50% Refund
After the 10th day of the session	NO REFUND

*** Redirect Link ***
*** General-Education ***

Degrees and Programs

Building and Landscape

Architectural Technology

Architectural Technology (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The primary focus of student training is the preparation of construction documents for projects typically found in the residential and commercial building industry. Students learn how to analyze project requirements and produce construction documents that describe those requirements utilizing the most recent releases of Autodesk's softwares. Other skills developed include the understanding of building science technology, applying sustainable principles, and researching building codes. Students also gain experience in construction cost estimating, basic structural design, office practices and other relevant computer software.

Award Outcomes

Demonstrate proficiency using CAD software and related computer tools.
Demonstrate knowledge of construction process, from design to completion.
Apply building codes and construction standards.
Perform preliminary structural design calculations.
Perform construction material take-offs and cost estimating.
Model effective communication skills.
Produce construction drawings.
Demonstrate knowledge of the materials and methods used in construction.
Model effective problem-solving strategies.

Career Opportunities

Students in the Architectural Technology program are prepared for entry level employment in a design or construction related position within the architecture, engineering or construction industry. Employment opportunities for graduates range from Computer Aided Design (CAD) or Building Information Modeling (BIM) technicians working in architectural, engineering or building firms to estimators working with contractors to detailers and representatives working with material and product suppliers. Hennepin Technical College graduates have advanced to senior positions in many area architecture, engineering or construction offices with experience and continuing education. Articulation agreements with other schools also give students the opportunity to continue their education for advanced degrees in areas such as construction management or operations management.

Program Requirements

Technical Studies Required 53 Credits

ARCH1008	Architectural Residential Technology I	5
ARCH1011	Architectural Residential Technology II	5
ARCH1101	Architectural Residential AutoCAD	5
ARCH1203	Residential Materials and Methods of Construction	3
ARCH1206	Strength of Materials	3
ARCH1340	Building Codes: Commercial	2
ARCH1345	Building Systems	3
ARCH2121	Architectural Commercial Technology I	5
ARCH2141	Architectural Commercial Technology II	5
ARCH2370	Architectural Residential Revit	4
ARCH2466	Commercial Materials and Methods of Construction	2
ARCH2562	Capstone: Project Design and Management	5
ARCH2850	Architectural Technology Advancements	2
ARCH2936	Advanced Revit BIM Technology	4

General Education Required 15 Credits

ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 1	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Area 5	3
	Choose 3 credits from MnTC Goal Areas 9 or 10	3

General Education Elective 0 Credits

Technical Studies Elective 4 Credits

Recommended:

ARCH1505	LEED GA Preparation	2
ARCH2301	Design with SketchUp	2
ARCH2310	Architectural CAD: Introduction to Revit Architecture	2
ARCH2640	Architectural History	3
ARCH2800	Civil Site Plan Development	2
ARCH2900	Internship	2 - 4
ARCH2920	Photoshop for Architecture	4
ARCH2930	Architectural CAD: 3D Studio Max	4

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First-Semester

ARCH1008	Architectural Residential Technology I	5
ARCH1101	Architectural Residential AutoCAD	5
ARCH1203	Residential Materials and Methods of Construction	3
ARCH1345	Building Systems	3

Total Credits 16

Second Semester

ARCH1011	Architectural Residential Technology II	5
ARCH1340	Building Codes: Commercial	2
ARCH2370	Architectural Residential Revit	4
ARCH2466	Commercial Materials and Methods of Construction	2
	Choose 3 credits from MnTC Goal Area 1	3

Total Credits 16

Summer Semester

	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Areas 9 or 10	3

Total Credits 6

Third Semester

ARCH1206	Strength of Materials	3
ARCH2121	Architectural Commercial Technology I	5
ARCH2800	Civil Site Plan Development	2
	Elective	
ARCH2936	Advanced Revit BIM Technology	4
ENGL2125	Technical Writing	3

Total Credits 17

Fourth Semester

ARCH2141	Architectural Commercial Technology II	5
ARCH2301	Design with SketchUp	2
	Elective	
ARCH2562	Capstone: Project Design and Management	5

ARCH2850	Architectural Technology Advancements	2
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 17

Technical Studies Electives

Recommended:

ARCH1505	LEED GA Preparation	2
ARCH2301	Design with SketchUp	2
ARCH2310	Architectural CAD: Introduction to Revit Architecture	2
ARCH2640	Architectural History	3
ARCH2800	Civil Site Plan Development	2
ARCH2900	Internship	2 - 4
ARCH2920	Photoshop for Architecture	4
ARCH2930	Architectural CAD: 3D Studio Max	4

Choose a Total of: 4 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3

PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 9 or 10

	MnTC Goal Area 9	
ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2600	Environmental Ethics	3
SOCI2120	Introduction to Criminal Justice	3
	MnTC Goal Area 10	
BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
PHIL2600	Environmental Ethics	3
SOCI2130	Food, Culture and Society	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 3004 / EP 3005

Architectural Technology (BP/EP) Diploma

Overview and Award Outcomes

Overview

The primary focus of student training is the preparation of construction documents for projects typically found in the residential and commercial building industry. Students learn how to analyze project requirements and produce construction documents that describe those requirements utilizing the most recent releases of Autodesk's softwares. Other skills developed include the understanding of building science technology, applying sustainable principles, and researching building codes. Students also gain experience in construction cost estimating, basic structural design, office practices and other relevant computer software.

Award Outcomes

Demonstrate proficiency using CAD software and related computer tools.
Demonstrate knowledge of construction process, from design to completion.
Apply building codes and construction standards.
Perform preliminary structural design calculations.
Perform construction material take-offs and cost estimating.
Model effective communication skills.
Produce construction drawings.
Demonstrate knowledge of the materials and methods used in construction.
Model effective problem-solving strategies.

Career Opportunities

Students in the Architectural Technology program are prepared for entry level employment in a design or construction related position within the architecture, engineering or construction industry. Employment opportunities for graduates range from Computer Aided Design (CAD) or Building Information Modeling (BIM) technicians working in architectural, engineering or building firms to estimators working with contractors to detailers and representatives working with material and product suppliers. Hennepin Technical College graduates have advanced to senior positions in many area architecture, engineering or construction offices with experience and continuing education. Articulation agreements with other schools also give students the opportunity to continue their education for advanced degrees in areas such as construction management or operations management.

Program Requirements

Technical Studies Required 53 Credits

ARCH1008	Architectural Residential Technology I	5
ARCH1011	Architectural Residential Technology II	5
ARCH1101	Architectural Residential AutoCAD	5
ARCH1203	Residential Materials and Methods of Construction	3
ARCH1206	Strength of Materials	3
ARCH1340	Building Codes: Commercial	2
ARCH1345	Building Systems	3
ARCH2121	Architectural Commercial Technology I	5
ARCH2141	Architectural Commercial Technology II	5
ARCH2370	Architectural Residential Revit	4
ARCH2466	Commercial Materials and Methods of Construction	2
ARCH2562	Capstone: Project Design and Management	5
ARCH2850	Architectural Technology Advancements	2
ARCH2936	Advanced Revit BIM Technology	4

General Education Required 3 Credits

ENGL1026	Writing for Careers	3

General Education Elective 4 Credits

Any HTC college level general education course may be used to satisfy the elective requirement.

Technical Studies Elective 4 Credits

Recommended:

ARCH1505	LEED GA Preparation	2

ARCH1900	Specialized Lab	1 - 4
ARCH2301	Design with SketchUp	2
ARCH2310	Architectural CAD: Introduction to Revit Architecture	2
ARCH2640	Architectural History	3
ARCH2800	Civil Site Plan Development	2
ARCH2900	Internship	2 - 4
ARCH2920	Photoshop for Architecture	4
ARCH2930	Architectural CAD: 3D Studio Max	4

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ARCH1008	Architectural Residential Technology I	5
ARCH1101	Architectural Residential AutoCAD	5
ARCH1203	Residential Materials and Methods of Construction	3
ARCH1345	Building Systems	3

Total Credits 16

Second Semester

ARCH1011	Architectural Residential Technology II	5
ARCH1340	Building Codes: Commercial	2
ARCH2370	Architectural Residential Revit	4
ARCH2466	Commercial Materials and Methods of Construction	2
ENGL1026	Writing for Careers	3

Total Credits 16

Third Semester

ARCH1206	Strength of Materials	3
ARCH2121	Architectural Commercial Technology I	5
ARCH2936	Advanced Revit BIM Technology	4
	Technical Studies Electives	2
	General Education Electives	2

Total Credits 16

Fourth Semester

ARCH2141	Architectural Commercial Technology II	5
ARCH2562	Capstone: Project Design and Management	5
ARCH2850	Architectural Technology Advancements	2
	Technical Studies Electives	2
	General Education Electives	2

Total Credits 16

Technical Studies Electives

Recommended:

ARCH1505	LEED GA Preparation	2
ARCH1900	Specialized Lab	1 - 4
ARCH2301	Design with SketchUp	2
ARCH2310	Architectural CAD: Introduction to Revit Architecture	2
ARCH2640	Architectural History	3
ARCH2800	Civil Site Plan Development	2
ARCH2900	Internship	2 - 4

ARCH2920	Photoshop for Architecture	4
ARCH2930	Architectural CAD: 3D Studio Max	4

Choose a Total of: 4 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 3004 / EP 3005

Cabinetmaking and Wood Product Design

Cabinetmaking (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Cabinetmakers perform hand and machine operations including cutting, shaping and assembly for the construction of store fixtures, office furniture, residential cabinetry, residential furniture and other articles of wood or related materials.

The Cabinetmaking program at Hennepin Technical College is divided into specific courses designed to introduce the many aspects of the cabinetmaking field. Emphasis will be placed on precision manufacturing, safety, traditional and computerized layout and design, blueprint reading and quality.

Award Outcomes

Operate woodworking machinery safely and effectively.
Design cabinetry and furniture.
Lay out cabinetry and furniture.
Determine appropriate materials for project.
Interpret blueprints and shop drawings.
Coordinate production operations.
Produce cabinetry and furniture.
Apply wood finishes.
Fabricate laminate and solid surface materials.
Estimate costs of cabinetry and furniture.

Career Opportunities

Graduates of this program choose careers in many different venues including residential cabinet shops, store fixture shops, furniture manufacturers, millwork shops and plastics industries. Some graduates operate their own businesses or shops.

Program Requirements

Technical Studies Required 57 Credits

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4
CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4
CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5
CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2

General Education Required 9 Credits

	Choose 3 credits from MnTC Goal Area 1	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College’s 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4

Total Credits 16

Second Semester

CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4
	Choose 3 credits from MnTC Goal Area 1	3

Total Credits 18

Summer Semester

	General Education Electives	6

Total Credits 6

Third Semester

CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 16

Fourth Semester

CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

Total Credits 16

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4

BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 3, 4, or 5

	MnTC Goal Area 3	
BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3
	MnTC Goal Area 4	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3
	MnTC Goal Area 5	
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

A complete list of MnTC courses and Goal Area that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3104 / EP

Cabinetmaking (BP) Diploma

Overview and Award Outcomes

Overview

Cabinetmakers perform hand and machine operations including cutting, shaping and assembly for the construction of store fixtures, office furniture, residential cabinetry, residential furniture and other articles of wood or related materials.

The Cabinetmaking program at Hennepin Technical College is divided into specific courses designed to introduce the many aspects of the cabinetmaking field. Emphasis will be placed on precision manufacturing, safety, traditional and computerized layout and design, blueprint reading and quality.

Award Outcomes

Operate woodworking machinery safely and effectively.
Design cabinetry and furniture.
Lay out cabinetry and furniture.
Determine appropriate materials for project.
Interpret blueprints and shop drawings.
Coordinate production operations.
Produce cabinetry and furniture.
Apply wood finishes.
Fabricate laminate and solid surface materials.
Estimate costs of cabinetry and furniture.

Career Opportunities

Graduates of this program choose careers in many different venues including residential cabinet shops, store fixture shops, furniture manufacturers, millwork shops and plastics industries. Some graduates operate their own businesses or shops.

Program Requirements

Technical Studies Required 57 Credits

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4
CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4
CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5
CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2

General Education Required 6 Credits

Choose six credits from the following:

CCDS1040	Job Seeking Skills	2
EMSV1020	CPR/First Aid	1
MATH1007	Math for the Trades	2
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

General Education Elective 0 Credits

Technical Studies Elective 1 Credit

Any Cabinetmaking (CBTG) course not required for this award may be used to satisfy an elective requirement.

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4

Total Credits 16

Second Semester

CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4

Total Credits 15

Third Semester

CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5
	Choose three credits from the following:	
CCDS1040	Job Seeking Skills	2
EMSV1020	CPR/First Aid	1
MATH1007	Math for the Trades	2
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Total Credits 17

Fourth Semester

CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2
	Technical Studies Electives	1
	Choose three credits from the following:	
CCDS1040	Job Seeking Skills	2
EMSV1020	CPR/First Aid	1
MATH1007	Math for the Trades	2
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Total Credits 16

Technical Studies Electives

Any Woodworking Technology (CBTG) course not required for this award may be used to satisfy an elective requirement.

Choose a Total of: 1 Credit

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3106 / EP

CNC Machining for Wood and Plastics (BP) Occupational Certificate

Overview and Award Outcomes

Overview

The CNC Machining for Wood and Plastics certificate is offered at Hennepin Technical College`s Brooklyn Park Campus. The certificate focuses on training individuals in the operation of numerical controlled equipment used for machining wood, plastic and related material.

Participants will refine skills in creating geometry for component parts using AutoCAD. Manual numerical code generation will be taught to reinforce machine manipulation and program knowledge. Computer Aided Machining (CAM) numerical code generation will be accomplished using Router-CIM software. Basic fixturing, controller manipulation, maintenance, tooling and hands-on part manufacturing will be accomplished using KOMO 408 CNC router.

Award Outcomes

Exhibit safety on CNC machinery.
Draw using a CAD program.
Assign tooling using CAM programs.
Set up CNC machines.
Operate CNC machines.
Manufacture parts using CNC machines.
Troubleshoot the manufacturing process of a part.

Career Opportunities

This certificate program prepares individuals to enter the wood and plastics CNC machining industry. The student will gain experience preparing parts drawings, generating machine code and operating a CNC router. This training may lead to entry-level employment in this very exciting and challenging field.

Program Requirements

Technical Studies Required 13 Credits

CBTG1170	AutoCAD	4
CBTG2522	CNC Programming	3
CBTG2532	CNC Router Operation	3
CBTG2552	CNC Wood Product Manufacturing	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 13

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1170	AutoCAD	4
CBTG2552	CNC Wood Product Manufacturing	3

Total Credits 7

Second Semester

CBTG2522	CNC Programming	3
CBTG2532	CNC Router Operation	3

Total Credits 6

Graduation (13 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 3108 / EP

Furniture Fabrication (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate focuses on the design, layout and construction of both furniture and furniture components. Emphasis will be placed on the product design and manufacturing techniques for custom furniture.

Award Outcomes

Operate woodworking machinery safely and effectively.
Design cabinetry and furniture.
Lay out cabinetry and furniture.
Determine appropriate materials for project.
Interpret blueprints and shop drawings.
Coordinate production operations.
Produce cabinetry and furniture.
Apply wood finishes.
Estimate costs of cabinetry and furniture.

Career Opportunities

This certificate will allow individuals to create and manufacture furniture and furniture components to industry standards and specifications.

Program Requirements

Technical Studies Required 24 Credits

CBTG1121	Power Tool Operation	5
CBTG1170	AutoCAD	4
CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2
CBTG2560	AutoCAD Product Fabrication	2

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate 24 Credits

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1121	Power Tool Operation	5
CBTG1170	AutoCAD	4

Total Credits 9

Second Semester

CBTG2410	Furniture Design	2
CBTG2421	Furniture Joinery	4
CBTG2431	Furniture Fabrication	5
CBTG2450	Solid Surface Fabrication	2
CBTG2560	AutoCAD Product Fabrication	2

Total Credits 15

Graduation (24 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3116 / EP

Product Fabrication (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate focuses on production techniques for the manufacturing of wood and wood products. Emphasis will be placed on reading product blueprints, laminations of high pressure laminates and producing wood products in multiples for purpose of time and cost reduction in manufacturing.

Award Outcomes

Operate woodworking machinery safely and effectively.
Lay out cabinetry and furniture.
Determine appropriate materials for project.
Interpret blueprints and shop drawings.
Coordinate production operations.
Produce cabinetry and furniture.
Apply wood finishes.

Career Opportunities

This certificate will allow individuals to enter the wood manufacturing environment with production skills and information for residential and commercial cabinetry and laminated products.

Program Requirements

Technical Studies Required Credits 20 Credits

CBTG1121	Power Tool Operation	5
CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 20

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1121	Power Tool Operation	5

Total Credits 5

Second Semester

CBTG1211	Laminated Product Fabrication	4
CBTG1220	Blueprint Reading and Shop Drawings	3
CBTG1230	Wood Finishing	2
CBTG1240	Millroom Operations	2
CBTG1250	Production Woodwork	4

Total Credits 15

Graduation (20 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3114 / EP

Residential Cabinetry (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate focuses on the design, layout and construction of both framed and frameless residential cabinetry. Emphasis will be placed on the product design and manufacturing techniques for custom cabinetry.

Award Outcomes

Operate woodworking machinery safely and effectively.
Design cabinetry and furniture.
Lay out cabinetry and furniture.
Determine appropriate materials for project.
Interpret blueprints and shop drawings.
Coordinate production operations.
Produce cabinetry and furniture.
Apply wood finishes.
Estimate costs of cabinetry and furniture.

Career Opportunities

This certificate will allow individuals to create and manufacture residential cabinetry to specific industry standards and specification.

Program Requirements

Technical Studies Required 22 Credits

CBTG1121	Power Tool Operation	5
CBTG1170	AutoCAD	4
CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate 22 Credits

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1121	Power Tool Operation	5
CBTG1170	AutoCAD	4

Total Credits 9

Second Semester

CBTG2311	Residential Cabinet Design	3
CBTG2332	Framed Cabinetry Fabrication	5
CBTG2362	Frameless Cabinetry Fabrication	5

Total Credits 13

Graduation (22 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3118 / EP

Wood Machining Fabrication (BP) Occupational Certificate

Overview and Award Outcomes

Overview

Cabinetmakers perform hand and machine operations including cutting, shaping and assembly for the construction of store fixtures, office furniture, residential cabinetry, residential furniture and other articles of wood or related materials.

The Cabinetmaking program at Hennepin Technical College is divided into specific courses designed to introduce the many aspects of the cabinetmaking field. The Wood Machining Fabrication certificate will focus on precision manufacturing, safety, traditional and computerized layout and design, blueprint reading and quality.

Award Outcomes

Operate woodworking machinery safely and effectively.
Layout and stock bill basic cabinetry components.
Determine appropriate material types for cabinetry.
Manipulate materials for woodworking joinery.
Produce basic cabinetry.
Understand physical properties of wood and composite materials.
Fabricate laminate products.
Calculate material costs of cabinetry.
Manipulate CAD software to produce shop drawings.
Draw cabinetry and furniture components.

Career Opportunities

Upon completion of the cabinetmaking certificate, an individual will be prepared for employment in a professional woodworking manufacturing facility with responsibilities focused on the machining and assembly of various components.

Program Requirements

Technical Studies Required 16 Credits

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CBTG1110	Joinery	2
CBTG1121	Power Tool Operation	5
CBTG1130	Materials	1
CBTG1141	Basic Case Construction	4
CBTG1170	AutoCAD	4

Total Credits 16

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 3112 / EP

Carpentry

Residential Remodeling and Design (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Residential Remodeling and Design program prepares students for a career in the remodeling industry. The program is designed to prepare students to take on a renovation project from start to finish, starting with the initial assessment of the property and preparing an estimate, to choosing proper materials, to the actual renovation process. Professional in this field will make improvements, repairs and renovations to homes in order to improve their aesthetics and increase their monetary value. Some Home Remodeling firms invest in old or damaged houses, renovate them and sell them for profit. Home Remodeling professionals need to ensure that the remodeled homes meet specific building code requirements and pass inspection by an authorized agent to ensure safety.

Award Outcomes

Practice Safe Work habits.
Operate tools and equipment correctly.
Interpret blueprints and applicable building codes.
Utilize computers and CAD software for plan development and research.
Identify materials used in residential construction.
Construct floor, wall, and roof systems.
Install interior and exterior finishes.
Apply various moisture and vapor management techniques.
Install doors and windows.
Discuss outmoded building systems.
Apply cabinet design, construction, and installation techniques.
Demonstrate professionalism with clients and the allied trades.
Understand elements of project coordination.

Career Opportunities

This program is designed to prepare students to enter the residential remodeling field. Graduates may find employment with remodeling contractors or weatherization firms. A program graduate may advance to the position of crew supervisor or job superintendent. They may start their own business specializing in general remodeling or in a certain areas of remodeling such as kitchens or bathrooms. Graduates of the program may also go into related fields of work such as sales, lumber yard management, building inspection or factory representative.

Program Requirements

Technical Studies Required 28 Credits

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1180	Stair Framing	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1710	Stair Finishing	2
CARP1720	Interior Trim	4
CARP1810	Residential Blueprint Reading	1
CARP1820	Residential Estimating	2
CARP1830	Building Code	1
	or	
ARCH1340	Building Codes: Commercial	2

General Education Required 15 Credits

	Choose 15 Credits from MnTC General Education in three different Goal Areas.	15

General Education Elective 0 Credits

Technical Studies Elective 17 Credits

Choose 17 Credits from ARCH, CARP, CBTG, HVAC, LNDC or IBEM

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1810	Residential Blueprint Reading	1

Total Credits 17

Second Semester

CARP1180	Stair Framing	2
CARP1710	Stair Finishing	2
CARP1720	Interior Trim	4
CARP1820	Residential Estimating	2
CARP1830	Building Code	1
	or	
ARCH1340	Building Codes: Commercial	2

Total Credits 11

Third Semester

	Technical Studies Electives	8
	Choose 8 Credits from the MnTC Goal Area Courses	8

Total Credits 16

Fourth Semester

	Technical Studies Electives	9
	Choose 7 Credits from the MnTC Goal Area Courses	7

Total Credits 16

Technical Studies Electives

Choose 17 credits from Architectural Technology (ARCH), Carpentry (CARP), Woodworking Technology (CBTG), Heating, Ventilation, and Air Conditioning (HVAC), Landscape and Horticulture Careers (LNDC), or Industrial Building Engineering and Maintenance (IBEM).

Choose a Total of: 17 Credits

Graduation (60 Credits)

The required 15 credits of General Education must satisfy at least 3 different MnTC Goal Areas.

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found on the Hennepin Technical College website at hennepintech.edu, under Future Students and Transfer.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

Carpentry (BP/EP) Diploma

Overview and Award Outcomes

Overview

Carpenters construct, install, erect and repair structures to comply with all existing codes and in a manner that exhibits skill and craftsmanship. They read blueprints, sketches and specifications for information pertaining to dimensions, types of materials required and standards of work. Carpenters work with a variety of hand tools, power tools and equipment. They work in a variety of physically demanding situations including weather extremes, heights and enclosed areas. A carpenter may be skilled in framing, interior and exterior finishing, forming and/or remodeling of residential and commercial buildings.

Award Outcomes

Practice safe work habits.
Develop blueprint reading skills.
Assemble floor, wall, roof and stair systems.
Install windows and doors.
Install interior trim.
Apply sustainable/energy efficient building practices.
Develop an awareness of environmental responsibility.
Exhibit professionalism and related soft skills.

Career Opportunities

A person who has carpenter training may be an all around carpenter or may specialize in areas such as framer, interior finisher, sider, shingler, drywall installer, acoustical ceiling installer, maintenance carpenter, millwright, bridge builder or prefabrication production builder. A carpenter may advance to the position of crew supervisor or job superintendent. Carpenters may go into business for themselves and become contractors for new construction or remodeling work. They may also go into related fields of work such as sales, lumber yard management, building inspection or factory representative.

Program Requirements

Technical Studies Required 28 Credits

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1180	Stair Framing	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1710	Stair Finishing	2
CARP1720	Interior Trim	4
CARP1810	Residential Blueprint Reading	1
CARP1820	Residential Estimating	2
CARP1830	Building Code	1
	or	
ARCH1340	Building Codes: Commercial	2

General Education Required 2 Credits

MATH1007	Math for the Trades	2

General Education Elective 2 Credits

Any HTC college level general education course may be used to satisfy the elective requirement.

Technical Studies Elective 4 Credits

Recommended:

CARP1150	Rafter Framing	3
CARP1190	Deck Construction	1
CARP1420	Concrete Stairs, Walks and Drives	1
CARP1430	Install Concrete Slabs	1
CARP1760	Cabinet Making	3
CARP1900	Specialized Lab	1 - 4

CARP2025	Carpentry Internship	1 - 3

Total Diploma Credits 36

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1810	Residential Blueprint Reading	1
MATH1007	Math for the Trades	2

Total Credits 19

Second Semester

CARP1180	Stair Framing	2
CARP1710	Stair Finishing	2
CARP1720	Interior Trim	4
CARP1820	Residential Estimating	2
CARP1830	Building Code	1
	Technical Studies Electives	4
	General Education Electives	2

Total Credits 17

Technical Studies Electives

Recommended:

CARP1150	Rafter Framing	3
CARP1190	Deck Construction	1
CARP1420	Concrete Stairs, Walks and Drives	1
CARP1430	Install Concrete Slabs	1
CARP1760	Cabinet Making	3
CARP1900	Specialized Lab	1 - 4
CARP2025	Carpentry Internship	1 - 3

Choose a Total of: 4 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3

MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 2 Credits

Graduation (36 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

3/24/2020 : BP 3204 / EP 3205

General Construction Laborer (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

General construction laborers perform a wide variety of activities during all phases of construction. They assist carpenters and other specialized contractors in framing, roofing, and interior and exterior finishing during the building and/or remodeling of residential and commercial structures. They read blueprints, sketches and specifications for information pertaining to dimensions, types of materials required and standards of work. General construction laborers work with a variety of hand tools, power tools and equipment. They work in a variety of physically demanding situations including weather extremes, heights and enclosed areas.

Award Outcomes

Practice safe work habits.
Develop blueprint reading skills.
Assemble floor, wall, roof and stair systems.
Install interior and exterior finishes.
Apply various moisture and vapor management techniques.

Career Opportunities

A person trained as a general construction laborer will support craft workers with their duties. They may assist a general carpenter or someone who specializes in areas such as: framer, interior finisher, sider, shingler, drywall installer, acoustical ceiling installer, maintenance carpenter, millwright, bridge builder or prefabrication production builder. They may also go into related fields of work such as sales, lumber yard management, or factory representative.

Program Requirements

Technical Studies Required 17 Credits

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1810	Residential Blueprint Reading	1

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CARP1101	Introduction to Residential Construction	2
CARP1111	Floor and Wall Framing	5
CARP1140	Engineered Roof Systems	2
CARP1240	Exterior Finishes	4
CARP1511	Insulation and Drywall	3
CARP1810	Residential Blueprint Reading	1

Total Credits 17

Graduation (17 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

3/24/2020 : BP 3213 / EP 3212

Heating, Ventilation and Air Conditioning

Heating, Ventilation, Air Conditioning, and Refrigeration (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Trained personnel are in critical short supply for the demands of the residential and commercial heating and air conditioning industry. With the increased need for energy efficient heating and cooling systems, new energy codes and exploding technology advancements, opportunities in the residential/commercial HVAC field are unlimited. The residential/commercial air conditioning, heating and refrigeration areas include working on heat/cool rooftop units, high-efficiency electronically controlled forced air furnaces and hydronic boilers, chillers and large-building computerized energy management control systems, ice cube machines, walk-in coolers/freezers and display cases. The HVAC technician should have the ability to install, retrofit, service and repair residential/commercial air handling units that have the capabilities of cooling, heating, humidifying, dehumidifying and filtration of air for environmental control.

Award Outcomes

Obtain OSHA 30 Certification.
Obtain the EPS Section 608 Refrigerant Handling License.
Practice human relation skills.
Demonstrate basic tool usage.
Apply mathematical, reading, and communication skills essential to the HVAC industry.
Demonstrate knowledge of International Fuel, Gas and Mechanical codes.
Troubleshoot electrical motors.
Troubleshoot control circuits for refrigeration and A/C equipment.
Troubleshoot gas heating equipment.
Adjust water systems for HVAC and refrigeration equipment.
Troubleshoot airflow systems for HVAC equipment.
Solve problems using analytical thinking.

Career Opportunities

Employment opportunities in the residential/commercial heating, cooling, air conditioning and refrigeration field are based on each individual`s goals and qualifications. Opportunities exist in management, sales, service, installation and maintenance of HVAC and refrigeration equipment. Possible positions include: installer, quality control technician, service technician, manufacturer`s representative, sales consultant, layout person and designer. In addition, the A.A.S. degree will help qualify individuals for management positions in the sales, installation, and service of HVAC equipment.

Program Requirements

Technical Studies Required 55 Credits

HVAC1000	Electrical Circuits	3
HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC1010	1PH Motors and Auxiliary Controls	2
HVAC1020	Tube and Pipe Fabrication	2
HVAC1030	Sheet Metal	2
HVAC1040	Basic Refrigeration	4
HVAC1050	Refrigerant Transition and Recovery	1
HVAC1055	Refrigeration Certification Exam	0
HVAC1071	Gas Heat Systems	4
HVAC1110	Electrical Diagrams	2
HVAC1120	Psychrometrics	1
HVAC1140	Central Air Conditioners	3
HVAC1146	Residential Heat Pumps	2
HVAC1151	Hydronic Heat Systems	2
HVAC2001	Packaged Heating and Cooling Equipment	4
HVAC2005	Commercial HVAC/R Safety and Servicing Procedures	2
HVAC2010	Commercial Heat Pump Systems	2
HVAC2030	Commercial Ice Making Machines	3
HVAC2041	Gas/Refrigeration (Mechanical) Code	1

HVAC2050	Electrical for Commercial HVAC&R Equipment	2
HVAC2111	Low Pressure Steam and Water Boilers	2
HVAC2121	Refrigerated Coolers and Cases	4
HVAC2130	Supermarket Refrigeration	3
MATH1007	Math for the Trades	2

General Education Required 9 Credits

COMM2050	Interpersonal Communication	3
	or	
	Choose one course from MnTC Goal Area 1 (Communication)	3
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3
	or	
	Choose one course from MnTC Goal Area 2 (Critical Thinking)	3
SOCI2100	Introduction to Sociology	3
	or	
	Choose one course from MnTC Goal Area 5 (History and the Social and Behavioral Sciences)	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 2 Credits

Recommended:

HVAC1015	Residential Heat Load Calculation	1
HVAC1025	Mini-Split Air Conditioners	1
HVAC1081	Oil Heat Systems	1
HVAC1100	Service Call Completion	1
HVAC1155	Radiant Heat Systems	1
HVAC1160	Air Quality Systems	1
HVAC1175	R-410A Certification Training	1
HVAC1181	MN Class CBoiler Operator License	3
HVAC1185	R-410A Certification Exam	0
HVAC1190	MN Special Boilers License	1
HVAC2020	Pneumatic Controls	2
HVAC2060	Computer Room Air Conditioning	1
HVAC2100	Water Chiller Machines	3
HVAC2165	Air Handling Units	1

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

HVAC1000	Electrical Circuits	3
HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC1010	1PH Motors and Auxiliary Controls	2
HVAC1020	Tube and Pipe Fabrication	2
HVAC1040	Basic Refrigeration	4
HVAC1050	Refrigerant Transition and Recovery	1
HVAC1055	Refrigeration Certification Exam	0
HVAC1110	Electrical Diagrams	2

Total Credits 16

Second Semester

HVAC1030	Sheet Metal	2
HVAC1071	Gas Heat Systems	4
HVAC1120	Psychrometrics	1
HVAC1140	Central Air Conditioners	3
HVAC1146	Residential Heat Pumps	2
HVAC1151	Hydronic Heat Systems	2
MATH1007	Math for the Trades	2
SOCI2100	Introduction to Sociology	3
	or	
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 19

Summer Semester

	General Education Electives	6

Total Credits 6

Third Semester

(HVAC Courses offered at Eden Prairie only)

HVAC2001	Packaged Heating and Cooling Equipment	4
HVAC2005	Commercial HVAC/R Safety and Servicing Procedures	2
HVAC2010	Commercial Heat Pump Systems	2
HVAC2030	Commercial Ice Making Machines	3
HVAC2041	Gas/Refrigeration (Mechanical) Code	1
HVAC2050	Electrical for Commercial HVAC&R Equipment	2
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3
	or	
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 17

Fourth Semester

(HVAC Courses offered at Eden Prairie only)

HVAC2111	Low Pressure Steam and Water Boilers	2
HVAC2121	Refrigerated Coolers and Cases	4
HVAC2130	Supermarket Refrigeration	3
COMM2050	Interpersonal Communication	3
	or	
	Choose 3 credits from MnTC Goal Area 1	3
	Technical Studies Electives	2

Total Credits 14

Technical Studies Electives

Recommended:

HVAC1015	Residential Heat Load Calculation	1
HVAC1025	Mini-Split Air Conditioners	1
HVAC1081	Oil Heat Systems	1
HVAC1100	Service Call Completion	1
HVAC1155	Radiant Heat Systems	1
HVAC1160	Air Quality Systems	1
HVAC1175	R-410A Certification Training	1
HVAC1181	MN Class CBoiler Operator License	3

HVAC1185	R-410A Certification Exam	0
HVAC1190	MN Special Boilers License	1
HVAC2020	Pneumatic Controls	2
HVAC2060	Computer Room Air Conditioning	1
HVAC2100	Water Chiller Machines	3
HVAC2165	Air Handling Units	1

Choose a Total of: 2 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (72 credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 3304 / EP 3305

Commercial Heating, Ventilation, Air Conditioning and Refrigeration (EP) Diploma

Overview and Award Outcomes

Overview

With the increased need for energy efficient heating and cooling systems, opportunities in the commercial refrigeration field are unlimited. Work in the area of supermarket refrigeration contains perhaps one of the biggest challenges and requires intensive quality training. Ice cube machines, walk-in coolers and display cases require technical service skills. The air conditioning and heating areas include working on heat/cool rooftop units, chillers and large building systems that are controlled by electronic, electric or pneumatic systems. The technician should also have the ability to install and maintain large air handling units which have the capabilities of cooling, heating, humidifying, dehumidifying and cleaning air for human and equipment environmental control. Increasing energy costs have created a great demand for skilled technicians in the area of energy management systems.

Prerequisite: Successful completion of the Residential Heating, Ventilation and Air Conditioning program or a minimum of 2 years related work experience.

Award Outcomes

Obtain OSHA 30 Certification.
Obtain the EPA Section 608 Refrigerant Handling License.
Demonstrate knowledge of International Fuel, Gas and Mechanical codes.
Troubleshoot electrical motors.
Troubleshoot control circuits for refrigeration and A/C equipment.
Troubleshoot gas heating equipment.
Adjust water systems for HVAC and refrigeration equipment.
Troubleshoot airflow systems for HVAC equipment.
Solve problems using analytical thinking.

Career Opportunities

Employment opportunities in the commercial heating, air conditioning and refrigeration field are based on each person`s goals and qualifications. Manufacturing, installation, servicing and engineering firms could employ an individual. Possible positions include: installer, quality control technician, service technician, layout person and designer.

Program Requirements

Technical Studies Required 32 Credits

HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC2001	Packaged Heating and Cooling Equipment	4
HVAC2005	Commercial HVAC/R Safety and Servicing Procedures	2
HVAC2010	Commercial Heat Pump Systems	2
HVAC2020	Pneumatic Controls	2
HVAC2030	Commercial Ice Making Machines	3
HVAC2041	Gas/Refrigeration (Mechanical) Code	1
HVAC2050	Electrical for Commercial HVAC&R Equipment	2
HVAC2060	Computer Room Air Conditioning	1
HVAC2100	Water Chiller Machines	3
HVAC2111	Low Pressure Steam and Water Boilers	2
HVAC2121	Refrigerated Coolers and Cases	4
HVAC2130	Supermarket Refrigeration	3
HVAC2165	Air Handling Units	1

General Education Required 2 Credits

CCDS1040	Job Seeking Skills	2
	or	
COMM1050	Communication in the Workplace	2
	or	
ENGL1026	Writing for Careers	3

General Education Elective 2 Credits

Any HTC college level general education course may be used to satisfy the elective requirement.

Technical Studies Elective 0 Credits

Total Diploma Credits 36

Semester Sequence

Offered at Eden Prairie Only

First Semester

HVAC2001	Packaged Heating and Cooling Equipment	4
HVAC2005	Commercial HVAC/R Safety and Servicing Procedures	2
HVAC2010	Commercial Heat Pump Systems	2
HVAC2020	Pneumatic Controls	2
HVAC2030	Commercial Ice Making Machines	3
HVAC2041	Gas/Refrigeration (Mechanical) Code	1
HVAC2050	Electrical for Commercial HVAC&R Equipment	2
	General Education Electives	2

Total Credits 18

Second Semester

HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC2060	Computer Room Air Conditioning	1
HVAC2100	Water Chiller Machines	3
HVAC2111	Low Pressure Steam and Water Boilers	2
HVAC2121	Refrigerated Coolers and Cases	4
HVAC2130	Supermarket Refrigeration	3
HVAC2165	Air Handling Units	1
	Choose one of the following:	
CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
ENGL1026	Writing for Careers	3

Total Credits 18

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4

MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 2 Credits

Graduation (36 Credits)

Prerequisite: Successful completion of the Residential Heating, Ventilation and Air Conditioning program or a minimum of 2 years related work experience.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP / EP 3308

Residential Heating, Ventilation and Air Conditioning (BP/EP) Diploma

Overview and Award Outcomes

Overview

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential heating, ventilation and air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of residential HVAC equipment. Prospective technicians will also master the intricacies of the newest residential energy management controls and indoor air quality equipment.

Award Outcomes

Obtain OSHA 30 Certification.
Obtain the EPS Section 608 Refrigerant Handling License.
Practice human relation skills.
Demonstrate basic tool usage.
Apply mathematical, reading, and communication skills essential to the HVAC industry.
Troubleshoot electrical motors.
Troubleshoot control circuits for refrigeration and A/C equipment.
Troubleshoot gas heating equipment.

Career Opportunities

Employment is available in management, sales, service and the installation and maintenance of residential HVAC equipment. Qualified graduates can be employed as installers, quality control technicians, service technicians, manufacturer`s representatives, sales consultants, layout persons, and designers.

Program Requirements

Technical Studies Required 30 Credits

HVAC1000	Electrical Circuits	3
HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC1010	1PH Motors and Auxiliary Controls	2
HVAC1020	Tube and Pipe Fabrication	2
HVAC1030	Sheet Metal	2
HVAC1040	Basic Refrigeration	4
HVAC1050	Refrigerant Transition and Recovery	1
HVAC1055	Refrigeration Certification Exam	0
HVAC1071	Gas Heat Systems	4
HVAC1110	Electrical Diagrams	2
HVAC1120	Psychrometrics	1
HVAC1140	Central Air Conditioners	3
HVAC1146	Residential Heat Pumps	2
HVAC1151	Hydronic Heat Systems	2

General Education Required 2 Credits

MATH1007	Math for the Trades	2

General Education Elective 2 Credits

Any HTC college level general education course may be used to satisfy the elective requirement.

Technical Studies Elective 1 Credits

Recommended:

HVAC1015	Residential Heat Load Calculation	1
HVAC1025	Mini-Split Air Conditioners	1
HVAC1081	Oil Heat Systems	1
HVAC1100	Service Call Completion	1
HVAC1155	Radiant Heat Systems	1
HVAC1160	Air Quality Systems	1
HVAC1175	R-410A Certification Training	1

HVAC1181	MN Class CBoiler Operator License	3
HVAC1185	R-410A Certification Exam	0
HVAC1190	MN Special Boilers License	1

Total Diploma Credits 35

Semester Sequence - Full-Time

Offered at Brooklyn Park and Eden Prairie

First Semester

HVAC1000	Electrical Circuits	3
HVAC1005	OSHA 30-Hour Construction Safety Training	2
HVAC1010	1PH Motors and Auxiliary Controls	2
HVAC1020	Tube and Pipe Fabrication	2
HVAC1040	Basic Refrigeration	4
HVAC1050	Refrigerant Transition and Recovery	1
HVAC1055	Refrigeration Certification Exam	0
HVAC1110	Electrical Diagrams	2
MATH1007	Math for the Trades	2

Total Credits 18

Second Semester

HVAC1030	Sheet Metal	2
HVAC1071	Gas Heat Systems	4
HVAC1120	Psychrometrics	1
HVAC1140	Central Air Conditioners	3
HVAC1146	Residential Heat Pumps	2
HVAC1151	Hydronic Heat Systems	2
	General Education Electives	2
	Technical Studies Electives	1

Total Credits 17

Technical Studies Electives

Recommended:

HVAC1015	Residential Heat Load Calculation	1
HVAC1025	Mini-Split Air Conditioners	1
HVAC1081	Oil Heat Systems	1
HVAC1100	Service Call Completion	1
HVAC1155	Radiant Heat Systems	1
HVAC1160	Air Quality Systems	1
HVAC1175	R-410A Certification Training	1
HVAC1181	MN Class CBoiler Operator License	3
HVAC1185	R-410A Certification Exam	0
HVAC1190	MN Special Boilers License	1

Choose a Total of: 1 Credit

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2

CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 2 Credits

Graduation (35 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 3306 / EP 3307

Semester Sequence - Friday/Saturday Students - Fall 2020 Start

Offered at Brooklyn Park Only

Fall 2020

HVAC1140	Central Air Conditioners	3
HVAC1146	Residential Heat Pumps	2
HVAC1151	Hydronic Heat Systems	2

Total Credits 7

Spring 2021

HVAC1030	Sheet Metal	2
HVAC1071	Gas Heat Systems	4
HVAC1120	Psychrometrics	1

Total Credits 7

Fall 2021

HVAC1000	Electrical Circuits	3
HVAC1010	1PH Motors and Auxiliary Controls	2
HVAC1020	Tube and Pipe Fabrication	2

Total Credits 7

Spring 2022

HVAC1040	Basic Refrigeration	4
HVAC1050	Refrigerant Transition and Recovery	1
HVAC1055	Refrigeration Certification Exam	0
HVAC1110	Electrical Diagrams	2
	Technical Studies Electives	1

Total Credits 8

Additional Required Courses

Please note that students must take the following courses in order to graduate. The courses are available both day and evening.

HVAC1005	OSHA 30-Hour Construction Safety Training	2

MATH1007	Math for the Trades	2
	General Education Electives	2

Total Credits 6

Technical Studies Electives

Recommended:

HVAC1015	Residential Heat Load Calculation	1
HVAC1025	Mini-Split Air Conditioners	1
HVAC1081	Oil Heat Systems	1
HVAC1100	Service Call Completion	1
HVAC1155	Radiant Heat Systems	1
HVAC1160	Air Quality Systems	1
HVAC1175	R-410A Certification Training	1
HVAC1181	MN Class CBoiler Operator License	3
HVAC1185	R-410A Certification Exam	0
HVAC1190	MN Special Boilers License	1

Choose a Total of: 1 Credit

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 2 Credits

Graduation (35 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 3306 / EP

Landscape, Horticulture and Greenhouse

Greenhouse Management Technician (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This program of study is for the student seeking a career in the plant production industry. Graduates in this program will have a strong knowledge and skills in greenhouse operation and management; plant production in a variety of ornamentals such as bedding plants, holiday plants (Easter Lilies, Poinsettias, etc.), and interior foliage plants. This degree will allow for advancement to supervisory and management positions.

Award Outcomes

Identify crops to be grown and their cultural needs.
Maintain crops.
Diagnose greenhouse pests using an IPM program.
Design a master plan for a business based on growing or selling crops.
Propagate woody and herbaceous plants sexually and asexually.
Operate greenhouse equipment efficiently.
Select pesticides and fertilizer formulations.
Calculate pesticide and fertilizer formulations.
Select proper media and amendments for plant crops.
Demonstrate technical knowledge of the greenhouse physical structure.
Select proper containers for crops.
Demonstrate technical knowledge of the environmental systems in the greenhouse.
Interpret soil and water tests.
Market crops.

Career Opportunities

Employment options include greenhouse production, plant propagation, greenhouse management and plant brokering.

Program Requirements

Technical Studies Required 37 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1141	Nursery Propagation and Production	3
LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1202	Herbaceous Plant Materials	4
LNDC1220	Integrated Pest Management	2
LNDC1231	Nursery Operations	2
LNDC1242	Plant Biology	4
LNDC1250	Bedding Plant Production	3
LNDC1271	Soil Science	3
LNDC2210	Tropical Plants and Their Uses	2
LNDC2261	Professional Gardening	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 2	3
	Choose one course from MnTC Goal Area 5	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 8 Credits

Recommended:

LNDC1120	Woody Plants I - Trees	4
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1900	Specialized Lab	1 - 4
LNDC2220	Turf Culture and Management	3
LNDC2360	Horticulture Internship	1 - 4

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 14

Second Semester

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3
LNDC2210	Tropical Plants and Their Uses	2
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 15

Summer Semester

LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC2261	Professional Gardening	3

Total Credits 5

Third Semester

LNDC1141	Nursery Propagation and Production	3
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
	Technical Studies Electives	4
	General Education Electives	3

Total Credits 16

Fourth Semester

	Choose 3 credits from MnTC Goal Area 2	3
	Technical Studies Electives	4
	General Education Electives	3

Total Credits 10

Technical Studies Electives

Recommended:

LNDC1120	Woody Plants I - Trees	4
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1900	Specialized Lab	1 - 4
LNDC2220	Turf Culture and Management	3
LNDC2360	Horticulture Internship	1 - 4

Choose a Total of: 8 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guideline of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6112 / EP

Landscape Design and Construction (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This program of study leading to a degree gives the student a basic landscape/horticulture education the first year. The second year focuses on landscape design and landscape construction. The design area will include courses in drafting and graphics, residential design, estimating, presentation techniques and computer drafting. The construction area includes courses in blueprint reading, estimating, surveying, landscape installation and specialized hardscape construction.

Award Outcomes

Identify plants and recommended uses.
Operate landscape equipment safely and efficiently.
Use hand tools safely and efficiently.
Interpret blueprints and landscape plans.
Measure a residential property.
Design a master plan for a residential property.
Complete working drawings with details for a residential property.
Create complete landscape plans using CAD software.
Construct landscape elements from plans and detail drawings.
Layout landscape plans in the field.
Demonstrate presentation techniques for landscape plans.
Diagnose insect and disease problems of landscape plans.
Calculate material quantities from plans.
Determine and set grades and elevations in field.
Communicate effectively with staff and clients.
Analyze customer needs and recommend solutions.

Career Opportunities

Students completing this area of study will have employment options as landscape designers or construction specialists with design/building firms or landscape construction businesses.

Program Requirements

Technical Studies Required 54 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2171	Sustainable Landscape Design II	3
LNDC2241	Landscape Equipment Operation	3
LNDC2271	Landscape Computer Design and Applications I	3
LNDC2280	Landscape Computer Design and Applications II	3
MATH1007	Math for the Trades	2

General Education Required 12 Credits

ENGL2121	Writing and Research	4

	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 1	3
	Choose one course from MnTC Goal Area 2	3
	Choose one course from MnTC Goal Area 5	3

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 3 Credits

Recommended:

LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3
LNDC1900	Specialized Lab	1 - 4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2335	Landscape Construction Internship	1 - 4

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3

Total Credits 18

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1235	Landscape Operations	2
LNDC2110	Introduction to Landscape Construction	2
MATH1007	Math for the Trades	2
	Technical Studies Electives	3

Total Credits 16

Summer Semester

LNDC2241	Landscape Equipment Operation	3
	General Education Electives	3

Total Credits 6

Third Semester

LNDC2120	Landscape Construction I	4

LNDC2160	Sustainable Landscape Design I	4
LNDC2271	Landscape Computer Design and Applications I	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 1	3

Total Credits 17

Fourth Semester

LNDC2131	Landscape Construction II	3
LNDC2171	Sustainable Landscape Design II	3
LNDC2280	Landscape Computer Design and Applications II	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 15

Technical Studies Electives

Recommended:

LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3
LNDC1900	Specialized Lab	1 - 4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2335	Landscape Construction Internship	1 - 4

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6104 / EP

Landscape/Horticulture (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This program of study leading to a degree concentrates on the multi-faceted career opportunities available in the landscape horticulture industry. Students will study a variety of required subjects and elective courses allowing them to customize their program. This is an excellent general program leading to varied opportunities in the landscape or greenhouse/nursery industry.

Award Outcomes

Demonstrate knowledge of greenhouse operation and management.
Demonstrate knowledge of nursery production and nursery crop management.
Demonstrate knowledge of the care and maintenance of trees in the landscape.
Demonstrate knowledge of the care and maintenance of turf.
Demonstrate knowledge of the care and maintenance of landscapes.
Diagnose abiotic and biotic tree problems.
Recommend solutions for tree problems.
Communicate effectively with staff and clients.
Design flowerbeds.
Install landscapes.
Demonstrate knowledge of pesticides and their safe use.
Diagnose abiotic and biotic turf problems.
Recommend solutions for turf problems.
Diagnose abiotic and biotic landscape plant problems.
Recommend solutions for landscape plant problems.
Propagate nursery crops.
Use hand tools safely and efficiently.
Operate landscape and turf equipment safely and efficiently.
Identify plants and recommend uses.

Career Opportunities

Employment options include greenhouse/nursery production, grounds care, retail and wholesale sales, interior landscaping, landscape installation and many specialized areas such as garden design and as municipal tree inspectors.

Program Requirements

Technical Studies Required 49 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1220	Integrated Pest Management	2
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC1242	Plant Biology	4
LNDC1250	Bedding Plant Production	3
LNDC1271	Soil Science	3
LNDC2220	Turf Culture and Management	3
LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3
MATH1007	Math for the Trades	2

General Education Required 15 Credits

CPLT1100	Computer Essentials	3
ENGL2121	Writing and Research	4
	or	

ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 1	3
	Choose one course from MnTC Goal Area 2	3
	Choose one course from MnTC Goal Area 5	3

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 5 Credits

Recommended:

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1900	Specialized Lab	1 - 4
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4
LNDC2350	Grounds Maintenance Internship	1 - 4
LNDC2360	Horticulture Internship	1 - 4

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
MATH1007	Math for the Trades	2

Total Credits 18

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1235	Landscape Operations	2
LNDC1250	Bedding Plant Production	3
CPLT1100	Computer Essentials	3
	Technical Studies Electives	2

Total Credits 17

Summer Semester

LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3

Total Credits 6

Third Semester

LNDC1131	Arboriculture I	3

LNDC1141	Nursery Propagation and Production	3
LNDC1231	Nursery Operations	2
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 1	3
	General Education Electives	3

Total Credits 17

Fourth Semester

LNDC1220	Integrated Pest Management	2
LNDC2220	Turf Culture and Management	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Area 5	3
	Technical Studies Electives	3

Total Credit 14

Technical Studies Electives

Recommended:

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1900	Specialized Lab	1 - 4
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4
LNDC2360	Horticulture Internship	1 - 4

Choose a Total of: 5 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4

BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6105 / EP

Urban Forestry Technician (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This program of study will lead to a degree in the multi-faceted area of Arboriculture. The tree care industry has expanded over the years to include areas of conservation, landscape maintenance and management issues as well. Extensive employment opportunities are available nationwide. Students will study a variety of required subjects and elective courses allowing them to customize their program.

Award Outcomes

Identify Minnesota native woody plants by botanical/common names.
Identify Minnesota natural plant communities.
Select plant needs with proper site characteristics.
Implement proper planting techniques.
Implement proper tree care to potential clients.
Identify common urban tree pests.
Prescribe treatment for common urban tree pests.
Design environmentally sound landscapes.
Integrate a sustainable approach to landscape installation and maintenance.
Prepare to take Minnesota Tree Inspector Certification Test.
Prepare to take ISA Certified Arborist Test (Knowledge Portion).

Career Opportunities

Employment options include career opportunities in municipalities, park districts; utility companies; private residential sites; and commercial tree service companies. Each of these areas utilizes trees for a different purpose. The tree care industry has expanded over the years to include areas of conservation, landscape maintenance and management issues as well.

Program Requirements

Technical Studies Required 39 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1131	Arboriculture I	3
LNDC1145	Tree Climbing Operations	3
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1220	Integrated Pest Management	2
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
LNDC1300	Minnesota Invasive Terrestrial Plants	2
LNDC1315	Minnesota Native Plants and Communities	4
LNDC2165	Advanced Arboriculture	3
LNDC2241	Landscape Equipment Operation	3

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 1	3
	Choose one course from MnTC Goal Area 2	3
	Choose one course from MnTC Goal Area 5	3

General Education Elective 3 Credits

Choose credits from Hennepin Technical College’s 2000-level general education courses.

Technical Studies Elective 6 Credits

Recommended:

LNDC1141	Nursery Propagation and Production	3
LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC2155	Advanced Tree Climbing Operations	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2345	Arboriculture Internship	1 - 4

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 15

Second Semester

LNDC1145	Tree Climbing Operations	3
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1220	Integrated Pest Management	2
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 15

Summer Semester

LNDC1315	Minnesota Native Plants and Communities	4
LNDC2241	Landscape Equipment Operation	3

Total Credits 7

Third Semester

LNDC1131	Arboriculture I	3
LNDC1300	Minnesota Invasive Terrestrial Plants	2
LNDC2155	Advanced Tree Climbing Operations	2
	Elective	
	Technical Studies Electives	2
	Choose 3 credits from MnTC Goal Area 1	3

Total Credits 12

Fourth Semester

LNDC2165	Advanced Arboriculture	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Technical Studies Electives	2
	General Education Electives	3

Total Credits 11

Technical Studies Electives

Recommended:

LNDC1141	Nursery Propagation and Production	3
LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC2155	Advanced Tree Climbing Operations	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2345	Arboriculture Internship	1 - 4

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3

PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6111 / EP

Landscape Design and Construction (BP) Diploma

Overview and Award Outcomes

Overview

This program of study leading to a diploma gives the student a basic landscape/horticulture education the first year. The second year focuses on landscape design and landscape construction. The design area will include courses in drafting and graphics, residential design, estimating, presentation techniques and computer drafting. The construction area includes courses in blueprint reading, estimating, surveying, landscape installation and specialized hardscape construction.

Award Outcomes

Identify plants and recommended uses.
Operate landscape equipment safely and efficiently.
Use hand tools safely and efficiently.
Interpret blueprints and landscape plans.
Measure a residential property.
Design a master plan for a residential property.
Complete working drawings with details for a residential property.
Create complete landscape plans using CAD software.
Construct landscape elements from plans and detail drawings.
Layout landscape plans in the field.
Demonstrate presentation techniques for landscape plans.
Diagnose insect and disease problems of landscape plans.
Calculate material quantities from plans.
Determine and set grades and elevations in field.
Communicate effectively with staff and clients.
Analyze customer needs and recommend solutions.

Career Opportunities

Students completing this area of study will have employment options as landscape designers or construction specialists with design/building firms or landscape construction businesses.

Program Requirements

Technical Studies Required 46 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2171	Sustainable Landscape Design II	3
LNDC2241	Landscape Equipment Operation	3

General Education Required 4 Credits

COMM1050	Communication in the Workplace	2
MATH1007	Math for the Trades	2

General Education Elective 4 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 10 Credits

Recommended:

LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1220	Integrated Pest Management	2
LNDC1900	Specialized Lab	1 - 4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2271	Landscape Computer Design and Applications I	3
LNDC2280	Landscape Computer Design and Applications II	3
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1231	Nursery Operations	2
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3

Total Credits 18

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1235	Landscape Operations	2
LNDC2110	Introduction to Landscape Construction	2
MATH1007	Math for the Trades	2
	Technical Studies Electives	4

Total Credits 17

Summer Semester

LNDC2241	Landscape Equipment Operation	3

Total Credits 3

Third Semester

LNDC2120	Landscape Construction I	4
LNDC2160	Sustainable Landscape Design I	4
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	3

Total Credits 13

Fourth Semester

LNDC2131	Landscape Construction II	3
LNDC2171	Sustainable Landscape Design II	3
	General Education Electives	4
	Technical Studies Electives	3

Total Credits 13

Technical Studies Electives

Any Landscape and Horticulture Career (LNDC) course that is not required for this award may be used as an elective.

Recommended:

LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1220	Integrated Pest Management	2
LNDC1900	Specialized Lab	1 - 4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2220	Turf Culture and Management	3
LNDC2261	Professional Gardening	3
LNDC2271	Landscape Computer Design and Applications I	3
LNDC2280	Landscape Computer Design and Applications II	3
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4

Choose a Total of: 10 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

05/20/2020 : BP 6107 / EP

Landscape/Horticulture (BP) Diploma

Overview and Award Outcomes

Overview

This program of study leading to a diploma concentrates on the multi-faceted career opportunities available in the landscape horticulture industry. Students will study a variety of required subjects and elective courses allowing them to customize their program. This is an excellent general program leading to varied opportunities in the landscape or greenhouse/nursery industry.

Award Outcomes

Demonstrate knowledge of greenhouse operation and management.
Demonstrate knowledge of nursery production and nursery crop management.
Demonstrate knowledge of the care and maintenance of trees in the landscape.
Demonstrate knowledge of the care and maintenance of turf.
Demonstrate knowledge of the care and maintenance of landscapes.
Diagnose abiotic and biotic tree problems.
Recommend solutions for tree problems.
Communicate effectively with staff and clients.
Design flowerbeds.
Install landscapes.
Demonstrate knowledge of pesticides and their safe use.
Diagnose abiotic and biotic turf problems.
Recommend solutions for turf problems.
Diagnose abiotic and biotic landscape plant problems.
Recommend solutions for landscape plant problems.
Propagate nursery crops.
Use hand tools safely and efficiently.
Operate landscape and turf equipment safely and efficiently.
Identify plants and recommend uses.

Career Opportunities

Employment options include greenhouse/nursery production, grounds care, retail and wholesale sales, interior landscaping, landscape installation and many specialized areas such as garden design and as municipal tree inspectors.

Program Requirements

Technical Studies Required 47 Credits

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1220	Integrated Pest Management	2
LNDC1231	Nursery Operations	2
LNDC1235	Landscape Operations	2
LNDC1242	Plant Biology	4
LNDC1250	Bedding Plant Production	3
LNDC1271	Soil Science	3
LNDC2220	Turf Culture and Management	3
LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3

General Education Required 4 Credits

COMM1050	Communication in the Workplace	2
MATH1007	Math for the Trades	2

General Education Elective 4 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 9 Credits

Recommended:

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1900	Specialized Lab	1 - 4
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4
LNDC2350	Grounds Maintenance Internship	1 - 4
LNDC2360	Horticulture Internship	1 - 4

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1110	Introduction to Landscape/Horticulture Careers	1
LNDC1120	Woody Plants I - Trees	4
LNDC1202	Herbaceous Plant Materials	4
LNDC1242	Plant Biology	4
LNDC1271	Soil Science	3
MATH1007	Math for the Trades	2

Total Credits 18

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC1235	Landscape Operations	2
LNDC1250	Bedding Plant Production	3
	Technical Studies Electives	3

Total Credits 15

Summer Semester

LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3

Total Credits 6

Third Semester

LNDC1131	Arboriculture I	3
LNDC1141	Nursery Propagation and Production	3
LNDC1231	Nursery Operations	2
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	3

Total Credits 13

Fourth Semester

LNDC1220	Integrated Pest Management	2
LNDC2220	Turf Culture and Management	3

	General Education Electives	4
	Technical Studies Electives	3

Total Credits 12

Technical Studies Electives

Any Landscape and Horticulture Career (LNDC) course that is not required for this award may be used as an elective.

Recommended:

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1900	Specialized Lab	1 - 4
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2160	Sustainable Landscape Design I	4
LNDC2210	Tropical Plants and Their Uses	2
LNDC2335	Landscape Construction Internship	1 - 4
LNDC2345	Arboriculture Internship	1 - 4
LNDC2350	Grounds Maintenance Internship	1 - 4
LNDC2360	Horticulture Internship	1 - 4

Choose a Total of: 9 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6106 / EP

Landscape Computer Design (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate program focuses on landscape design and landscape construction. The design area will include courses in drafting and graphics, residential design, estimating, presentation techniques and computer drafting. The construction area includes courses in blueprint reading, estimating, surveying, landscape installation and specialized hardscape construction.

Prerequisite: Graduation from a 2-year landscape design and construction program OR a minimum of 2 years related work experience.

Award Outcomes

Identify plants and recommended uses.
Operate landscape equipment safely and efficiently.
Use hand tools safely and efficiently.
Interpret blueprints and landscape plans.
Measure a residential property.
Design a master plan for a residetial property.
Complete working drawings with details for a residential property.
Create complete landscape plans using CAD software.
Construct landscape elements from plans and detail drawings.
Layout landscape plans in the field.
Demonstrate presentation techniques for landscape plans.
Diagnose insect and disease problems of landscape plans.
Calculate material quantities from plans.
Determine and set grades and elevations in field.
Communicate effectively with staff and clients.
Analyze customer needs and recommend solutions.

Career Opportunities

Students completing this area of study will have employment options as landscape designers or construction specialists with design/building firms or landscape construction businesses.

Program Requirements

Technical Studies Required 17 Credits

LNDC1235	Landscape Operations	2
LNDC2110	Introduction to Landscape Construction	2
LNDC2160	Sustainable Landscape Design I	4
LNDC2171	Sustainable Landscape Design II	3
LNDC2271	Landscape Computer Design and Applications I	3
LNDC2280	Landscape Computer Design and Applications II	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1235	Landscape Operations	2
LNDC2110	Introduction to Landscape Construction	2
LNDC2160	Sustainable Landscape Design I	4

LNDC2171	Sustainable Landscape Design II	3
LNDC2271	Landscape Computer Design and Applications I	3
LNDC2280	Landscape Computer Design and Applications II	3

Total Credits 17

Graduation (17 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6116 / EP

Landscape Construction (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This program of study leading to a certificate in landscape construction provides the student with specific courses, each focusing on an individual aspect of landscape construction. Included are decks, fences, retaining walls, patios, construction specifications, estimating and job planning. There is extensive lab time for field projects.

Prerequisite: A minimum of one year experience in the landscape industry.

Award Outcomes

Identify plants and recommended uses.
Operate landscape equipment safely and efficiently.
Use hand tools safely and efficiently.
Interpret blueprints and landscape plans.
Measure a residential property.
Complete working drawings with details for a residential property.
Create complete landscape plans using CAD software.
Construct landscape elements from plans and detail drawings.
Layout landscape plans in the field.
Demonstrate presentation techniques for landscape plans.
Calculate material quantities from plans.
Determine and set grades and elevations in field.
Communicate effectively with staff and clients.
Analyze customer needs and recommend solutions.

Career Opportunities

Completion of the construction certificate will lead directly to opportunities with landscape construction and design/building firms.

Program Requirements

Technical Studies Required 18 Credits

LNDC1235	Landscape Operations	2
LNDC2110	Introduction to Landscape Construction	2
LNDC2120	Landscape Construction I	4
LNDC2131	Landscape Construction II	3
LNDC2241	Landscape Equipment Operation	3
LNDC2330	Landscape Construction Internship Certificate	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 18

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Arboriculture (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This specialized area of study leads to a certificate in arboriculture. Arboriculture is the study of and care of trees and other landscape woody plants. The students will study plant materials, insects, diseases and environmental problems affecting woody plants of the upper midwest. This course of study will also include courses relating to maintenance practices necessary to insure the health and beauty of woody plants in the landscape. Students will have the opportunity to develop field skills in rope and saddle trimming work.

Award Outcomes

Identify Minnesota native woody plants by botanical/common name.
Select plant needs with proper site characteristics.
Implement proper planting techniques.
Implement proper tree care to potential clients.
Identify common urban tree pests.
Prescribe treatment for common urban tree pests.
Integrate a sustainable approach to landscape installation and maintenance.

Career Opportunities

Students completing the arboriculture certificate may be employed in the tree service industry, park systems and ground maintenance businesses.

Program Requirements

Technical Studies Required 23 Credits

LNDC1120	Woody Plants I - Trees	4
LNDC1131	Arboriculture I	3
LNDC1145	Tree Climbing Operations	3
LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC2165	Advanced Arboriculture	3
LNDC2341	Arboriculture Internship Certificate	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 23

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1120	Woody Plants I - Trees	4
LNDC1131	Arboriculture I	3
LNDC1145	Tree Climbing Operations	3

Total Credits 10

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1190	Woody Plants II - Shrubs	4
LNDC2165	Advanced Arboriculture	3
LNDC2341	Arboriculture Internship Certificate	3

Total Credits 13

Graduation (23 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6109 / EP

Greenhouse Technician (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This program of study is for the student seeking a career in the plant production industry. Graduates in this program will have a strong knowledge and skills in greenhouse operation and management; plant production in a variety of ornamentals such as bedding plants, holiday plants (Easter Lilies, Poinsettias, etc.), and interior foliage plants. This degree will allow for advancement to supervisory and management positions.

Award Outcomes

Identify crops to be grown and their cultural needs.
Maintain crops.
Diagnose greenhouse pests using an IPM program.
Design a master plan for a business based on growing or selling crops.
Propagate woody and herbaceous plants sexually and asexually.
Operate greenhouse equipment efficiently.
Select pesticides and fertilizer formulations.
Calculate pesticide and fertilizer formulations.
Select proper media and amendments for plant crops.
Demonstrate technical knowledge of the greenhouse physical structure.
Select proper containers for crops.
Demonstrate technical knowledge of the environmental systems in the greenhouse.
Interpret soil and water tests.
Market crops.

Career Opportunities

Employment options include greenhouse production, plant propagation, greenhouse management and plant brokering.

Program Requirements

Technical Studies Required 22 Credits

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1220	Integrated Pest Management	2
LNDC1231	Nursery Operations	2
LNDC1250	Bedding Plant Production	3
LNDC2210	Tropical Plants and Their Uses	2
LNDC2241	Landscape Equipment Operation	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 2 Credits

Recommended:

LNDC2360	Horticulture Internship	1 - 4

Total Occupational Certificate Credits 24

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1166	Sustainable Food and Plant Production - Fall	3
LNDC1231	Nursery Operations	2

Total Credits 5

Second Semester

LNDC1160	Greenhouse Infrastructure Technology	2
LNDC1176	Sustainable Food and Plant Production - Winter	3
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3
LNDC2210	Tropical Plants and Their Uses	2

Total Credits 12

Summer Semester

LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC2241	Landscape Equipment Operation	3

Total Credits 5

Graduation (24 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6114 / EP

Professional Gardening (BP) Occupational Certificate

Overview and Award Outcomes

Overview

The professional gardener certificate is designed to prepare students to professionally design, install and maintain ornamental and vegetable gardens, container plantings and seasonal displays in residential, commercial and institutional settings. Some of the skills taught include plant production, site preparation, plant selection, pest and weed identification, creating garden maintenance plans, pruning techniques, tool selection and use, and basic business practices.

Award Outcomes

Propagate woody and herbaceous plants sexually and asexually.
Identify plants and recommended uses.
Operate landscape equipment safely and efficiently.
Design flowerbeds.
Diagnose insect and disease problems of landscape plans.
Identify Minnesota natural plant communities.
Communicate effectively with staff and clients.
Use hand tools safely and efficiently.

Career Opportunities

Landscape/Horticulture professionals design, install and care for residential, commercial and public landscapes. They find work with companies that provide landscape design, construction and maintenance services, as well as garden centers, nurseries, golf courses and municipal parks, community gardens and public works departments.

Program Requirements

Technical Studies Required 29 Credits

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC1202	Herbaceous Plant Materials	4
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3
LNDC1271	Soil Science	3
LNDC1300	Minnesota Invasive Terrestrial Plants	2
LNDC2160	Sustainable Landscape Design I	4
LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 29

Semester Sequence

Offered at Brooklyn Park Only

First Semester

LNDC1202	Herbaceous Plant Materials	4
LNDC1271	Soil Science	3
LNDC1300	Minnesota Invasive Terrestrial Plants	2
LNDC2160	Sustainable Landscape Design I	4

Total Credits 13

Second Semester

LNDC1151	Insects and Diseases of Landscape Plants	3
LNDC1220	Integrated Pest Management	2
LNDC1250	Bedding Plant Production	3

Total Credits 8

Summer Semester

LNDC1187	Sustainable Food and Plant Production - Summer	2
LNDC2241	Landscape Equipment Operation	3
LNDC2261	Professional Gardening	3

Total Credits 8

Graduation (29 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 6115 / EP

Plumbing Technology

Plumbing Pre-Apprenticeship (EP) Diploma

Overview and Award Outcomes

Overview

The Plumbing Pre-Apprenticeship program prepares students to begin a career in plumbing and pipefitting at the apprentice level with a plumbing contractor. Coursework provides students with the technical understanding and basic skills development in safety, plumbing codes, material identification, tool usage, piping procedures, blueprint interpretation, and design and installation of plumbing systems.

Award Outcomes

Analyze plumbing codes, rules, and regulations.
Apply proper safety techniques and procedures.
Calculate plumbing measurements.
Complete proper piping procedures.
Interpret blueprints and pipe isometrics.
Design plumbing systems.
Install plumbing systems.

Career Opportunities

Graduating students will be prepared for entry level opportunities as an apprentice plumber in residential, commercial, industrial and service plumbing contractor companies. Further career training can lead to journeyman plumber, master plumber, job foreman, project superintendant, estimator, wholesale distribution, plumbing inspector, plumbing instructor, and plumbing contractor.

Program Requirements

Technical Studies Required 32 Credits

PLBG1000	Iron and Steel Pipe Procedures	2
PLBG1005	Introduction to Plumbing and Safety	2
PLBG1011	Blueprint Reading and Estimating I	3
PLBG1020	Copper Pipe Procedures	2
PLBG1025	Plastic Pipe Procedures	2
PLBG1031	Plumbing Calculations I	3
PLBG1035	Minnesota State Plumbing Code I	3
PLBG1041	Plumbing Systems Design	3
PLBG1045	Minnesota State Plumbing Code II	3
PLBG1050	Plumbing Systems Installation	3
PLBG1060	Plumbing Calculations II	3
PLBG1065	Blueprint Reading and Estimating II	3

General Education Required 4 Credits

EMSV1020	CPR/First Aid	1
PHYS2001	Introductory Physics	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 36

Semester Sequence

Offered at Eden Prairie Only

First Semester

PLBG1000	Iron and Steel Pipe Procedures	2
PLBG1005	Introduction to Plumbing and Safety	2
PLBG1011	Blueprint Reading and Estimating I	3

PLBG1020	Copper Pipe Procedures	2
PLBG1025	Plastic Pipe Procedures	2
PLBG1031	Plumbing Calculations I	3
PLBG1035	Minnesota State Plumbing Code I	3
EMSV1020	CPR/First Aid	1

Total Credits 18

Second Semester

PLBG1041	Plumbing Systems Design	3
PLBG1045	Minnesota State Plumbing Code II	3
PLBG1050	Plumbing Systems Installation	3
PLBG1060	Plumbing Calculations II	3
PLBG1065	Blueprint Reading and Estimating II	3
PHYS2001	Introductory Physics	3

Total Credits 18

Graduation (36 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 3503

Plumbing Pre-Apprenticeship (EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Plumbing Pre-Apprenticeship program prepares students to begin a career in plumbing and pipefitting at the helper level with a plumbing contractor. Coursework provides students with the technical understanding and basic skills development in safety, plumbing codes, material identification, tool usage, piping procedures, and blueprint interpretation.

Award Outcomes

Analyze plumbing codes, rules, and regulations.
Apply proper safety techniques and procedures.
Calculate plumbing measurements.
Complete proper piping procedures.
Interpret blueprints and pipe isometrics.

Career Opportunities

Graduating students will be prepared for entry level opportunities as a plumbers helper in residential, commercial, industrial and service plumbing contractor companies. Further career training can lead to apprentice plumber, journeyman plumber, master plumber, job foreman, project superintendant, estimator, wholesale distribution, plumbing inspector, plumbing instructor, and plumbing contractor.

Program Requirements

Technical Studies Required 17 Credits

PLBG1000	Iron and Steel Pipe Procedures	2
PLBG1005	Introduction to Plumbing and Safety	2
PLBG1011	Blueprint Reading and Estimating I	3
PLBG1020	Copper Pipe Procedures	2
PLBG1025	Plastic Pipe Procedures	2
PLBG1031	Plumbing Calculations I	3
PLBG1035	Minnesota State Plumbing Code I	3

General Education Required 1 Credit

EMSV1020	CPR/First Aid	1

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits

Semester Sequence

Offered at Eden Prairie Only

First Semester

PLBG1000	Iron and Steel Pipe Procedures	2
PLBG1005	Introduction to Plumbing and Safety	2
PLBG1011	Blueprint Reading and Estimating I	3
PLBG1020	Copper Pipe Procedures	2
PLBG1025	Plastic Pipe Procedures	2
PLBG1031	Plumbing Calculations I	3
PLBG1035	Minnesota State Plumbing Code I	3
EMSV1020	CPR/First Aid	1

Total Credits 18

Graduation (18 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 3505

Public Works

Street, Utility, and Park Maintenance Technician (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

Students completing this program will gain the basic skills necessary to work efficiently and safely in a variety of municipal, county and state positions, such as street, utility, and park maintenance.

Award Outcomes

Identify the role of public works agencies in local government.
Identify role in a public safety emergency.
Perform maintenance of surfaces and external grounds.
Demonstrate methods used for water leak detection, system flushing and disinfection.
Appraise construction methods for park and recreation facilities.
Demonstrate effective customer service techniques.
Identify health and safety hazards in accordance with OSHA and industry standards.
Perform repairs to small engines, physical structures and their mechanical systems.
Operate mechanized equipment in accordance with OSHA/industry standards.

Career Opportunities

There are a number of options to choose from in this field. Employees in this field can expect good pay & benefits, year round employment, and challenging outdoor work assignments.

Program Requirements

Technical Studies Required 19 Credits

PWRK1020	Basic Engine Repair	3
PWRK1025	Street Maintenance, Materials and Applications	3
PWRK1045	Practical Skills for Public Works	4
PWRK1050	Introduction to Municipal Utilities	3
PWRK1065	Introduction to Park Maintenance	3
PWRK2000	Public Works Internship	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 19

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

PWRK1020	Basic Engine Repair	3
PWRK1025	Street Maintenance, Materials and Applications	3
PWRK1045	Practical Skills for Public Works	4
PWRK1050	Introduction to Municipal Utilities	3
PWRK1065	Introduction to Park Maintenance	3

Total Credits 16

Second Semester

PWRK2000	Public Works Internship	3

Total Credits 3

Graduation (19 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4908 / EP 4907

Business and Information Technology

Accounting

Accounting Transfer Pathway (EP) Associate of Science

Overview and Award Outcomes

Overview

Accounting Transfer Pathway AS offers students a powerful option: the opportunity to complete an Associate of Science degree with course credits that directly transfer to designated Accounting bachelor's degree programs at Minnesota State universities. The curriculum has been specifically designed so that students completing this pathway degree and transferring to one of the seven Minnesota State universities* enter the university with junior-year status. All courses in the Transfer Pathway associate degree will directly transfer and apply to the designated bachelor's degree programs in a related field. The Accounting Transfer Pathway AS prepares students to advance on to one of the 4-year universities listed below or students are able to enter the workforce right away.

*Universities within the Minnesota State system include Bemidji State University; Metropolitan State University; Minnesota State University, Mankato; Minnesota State University Moorhead; Southwest Minnesota State University; St. Cloud State University, and Winona State University.

Award Outcomes

Analyze financial statements.
Apply professional communication skills.
Demonstrate critical thinking skills.
Demonstrate mathematical skills essential to accounting.
Demonstrate ethical behavior.
Generate accounting financial statements.
Record business transactions.
Utilize current accounting and office software.
Analyze various tax rules and regulations.
Synthesize business information.

Career Opportunities

Job opportunities are available in any organization that conducts financial transactions: private business, non-profit and government organizations. Job titles include accounting clerk, payroll specialist, staff accountant, tax preparer, inventory clerk, associate accountant, and accounting support specialist.

Program Requirements

Technical Studies Required 25 Credits

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
ACCT2155	Financial Accounting	4
ACCT2221	Managerial Accounting	4
ACCT2950	Accounting Skills Assessment	0
BUSN1140	Business Law	3
BUSN2005	Marketing Concepts and Strategies	4
BUSN2055	Principles of Management	4
CCIS1080	Microsoft Office Productivity Apps 1	3

General Education Required 27 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
	or	
ENGL2125	Technical Writing	3
COMM2130	Public Speaking	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
ENGL2121	Writing and Research	4
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4

	Choose 4 credits from MnTC Goal Area 3	4

General Education Elective 3 Credits

Choose an additional 3 credits from at least 1 MnTC Goal Area not listed in the General Education Requirements. Students must ensure that the General Education courses cover at least 6 MnTC Goal Areas.

Technical Studies Elective 5 Credits

Any Accounting (ACCT) course that is not required for this award may be used as an elective.

Total Associate of Science 60 Credits

Semester Sequence

Offered at Eden Prairie Only

First Semester

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
CCIS1080	Microsoft Office Productivity Apps 1	3
COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
	or	
ENGL2125	Technical Writing	3
COMM2130	Public Speaking	3
ECON2200	Principles of Microeconomics	3

Total Credits 15

Second Semester

ACCT2155	Financial Accounting	4
BUSN1140	Business Law	3
ECON2300	Principles of Macroeconomics	3
	Technical Studies Electives	5

Total Credits 15

Third Semester

ACCT2221	Managerial Accounting	4
BUSN2005	Marketing Concepts and Strategies	4
MATH2150	Introduction to Statistics	3
	Choose 4 credits from MnTC Goal Area 3	4

Total Credits 15

Fourth Semester

ACCT2950	Accounting Skills Assessment	0
BUSN2055	Principles of Management	4
ENGL2121	Writing and Research	4
MATH2200	College Algebra	4
	General Education Electives	3

Total Credits 15

Technical Studies Electives

Any Accounting Careers (ACCT) course that is not required for this award may be used as an elective.

Choose a Total of: 5 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum

(MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 3

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP / EP ETAC

Accounting (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The accountant plays a key role in the management of companies by providing financial information for operation and decision making purposes. Your knowledge and skill in the preparation of financial statements, budgets, forecasts, tax analysis and reports is critical to the success of every business. Operation of computerized accounting software, spreadsheets and other data information applications is required. Accountants work in a team environment, which requires the ability to communicate, both orally and in writing, critical information to management. Students entering this field must be self-motivated, clear-thinking, quality conscious and persistent in accomplishing a wide variety of tasks.

Award Outcomes

Analyze financial statements.
Apply professional communication skills.
Demonstrate critical thinking skills.
Demonstrate mathematical skills essential to accounting.
Demonstrate ethical behavior.
Generate accounting financial statements.
Record business transactions.
Utilize current accounting and office software.
Analyze various tax rules and regulations.
Synthesize business information.
Complete payroll activities.

Career Opportunities

Accountants are needed in every type of service or manufacturing operation. You may be employed by financial institutions, governmental agencies, private business or in public accounting firms. America`s continuing shift to a world-wide service-oriented economy has resulted in an accelerating demand for individuals who possess financial knowledge and accounting skills.

Program Requirements

Technical Studies Required 42 Credits

ACCT1102	Principles of Accounting I	4
ACCT1107	Principles of Accounting II	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3
ACCT1130	Microsoft Dynamics GP	3
	or	
ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
ACCT2155	Financial Accounting	4
ACCT2200	Intermediate Accounting I	4
ACCT2206	Intermediate Accounting II	3
ACCT2221	Managerial Accounting	4
ACCT2231	Income Tax	4
ACCT2700	Auditing	3
ACCT2950	Accounting Skills Assessment	0
BUSN1140	Business Law	3

General Education Required 15 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
	or	
COMM2130	Public Speaking	3

ECON2200	Principles of Microeconomics	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2150	Introduction to Statistics	3
	or	
MATH2200	College Algebra	4
	Choose one course from MnTC Goal Area 2	3

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any ACCT, BUSN, or CCIS course that is not required for this award may be used as an elective.

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ACCT1102	Principles of Accounting I	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3
	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4

Total Credits 16

Second Semester

ACCT1107	Principles of Accounting II	4
ACCT1130	Microsoft Dynamics GP	3
	or	
ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
BUSN1140	Business Law	3
ECON2200	Principles of Microeconomics	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 16

Third Semester

ACCT2155	Financial Accounting	4

ACCT2200	Intermediate Accounting I	4
ACCT2221	Managerial Accounting	4
	Technical Studies Electives	3

Total Credits 15

Fourth Semester

ACCT2206	Intermediate Accounting II	3
ACCT2231	Income Tax	4
ACCT2700	Auditing	3
ACCT2950	Accounting Skills Assessment	0
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 13

Technical Studies Electives

Any Accounting Careers (ACCT), Business (BUSN), or Information Technology/Computer Careers (CCIS) course that is not required for this award may be used as an elective.

Choose a Total of: 3 Credits

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHIL2400	Medical Ethics	4
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 2004 / EP 2005

Accounting Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

The accounting technician is a key member in the accounting department who specializes in a certain area of preparing and maintaining the business records. You may be assigned to the accounts receivable, accounts payable, payroll or other accounting areas. Skills in journaling and posting transactions, preparing financial reports or in the preparation of payroll records are necessary. Accounting technicians must be able to use computerized accounting software, spreadsheets, word processing and other data information software. Individuals entering this field must be team players who display a willingness to share their specialized knowledge with other accounting areas.

Award Outcomes

Analyze financial statements.
Apply professional communication skills.
Demonstrate critical thinking skills.
Demonstrate mathematical skills essential to accounting.
Demonstrate ethical behavior.
Generate accounting financial statements.
Record business transactions.
Utilize current accounting and office software.
Complete payroll activities.

Career Opportunities

Accounting Technicians will find high employment demand in both the private and public sectors of business. Large organizations often seek accounting individuals to become specialists in their accounting department. This rapidly growing specialization trend focuses on employing highly trained accounting technicians who can deal with complex problems in their area of expertise.

Program Requirements

Technical Studies Required 24 Credits

ACCT1102	Principles of Accounting I	4
ACCT1107	Principles of Accounting II	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3
ACCT1130	Microsoft Dynamics GP	3
	or	
ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
ACCT2155	Financial Accounting	4
ACCT2950	Accounting Skills Assessment	0
BUSN1140	Business Law	3

General Education Required 3 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
	or	
COMM2130	Public Speaking	3

General Education Elective 1 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 3 Credits

Any ACCT, BUSN or CCIS course that is not required for this award may be used as an elective.

Total Diploma Credits 31

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ACCT1102	Principles of Accounting I	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3
	Technical Studies Electives	3
	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Total Credits 16

Second Semester

ACCT1107	Principles of Accounting II	4
ACCT1130	Microsoft Dynamics GP	3
	or	
ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
ACCT2155	Financial Accounting	4
ACCT2950	Accounting Skills Assessment	0
BUSN1140	Business Law	3
	General Education Electives	1

Total Credits 15

Technical Studies Electives

Any Accounting Careers (ACCT), Business (BUSN), or Information Technology/Computer Careers (CCIS) course that is not required for this award may be used as an elective.

Choose a Total of: 3 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3

MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 1 Credit

Graduation (31 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 2006 / EP 2007

Accounting (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed to allow individuals to enter the accounting profession without the time and effort needed to complete an accounting degree program. It includes instruction that covers the basic accounting and computers skills that are demanded in the accounting profession.

Award Outcomes

Apply professional communication skills.
Demonstrate mathematical skills essential to accounting.
Demonstrate ethical behavior.
Record business transactions.
Utilize current accounting and office software.
Complete payroll activities.

Career Opportunities

Accountants are needed in every type of service or manufacturing operation. You may be employed by financial institutions, governmental agencies, private business or in public accounting firms. America`s continuing shift to a world-wide service-oriented economy has resulted in an accelerating demand for individuals who possess financial knowledge and accounting skills.

Program Requirements

Technical Studies Required 17 Credits

ACCT1102	Principles of Accounting I	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3
ACCT1130	Microsoft Dynamics GP	3
	or	
ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
ACCT1107	Principles of Accounting II	4
	or	
ACCT2155	Financial Accounting	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ACCT1102	Principles of Accounting I	4
ACCT1111	Payroll Accounting	3
ACCT1125	Excel	3

Total Credits 10

Second Semester

ACCT1130	Microsoft Dynamics GP	3
	or	

ACCT1135	QuickBooks	3
	or	
ACCT1150	Sage 50	3
ACCT1107	Principles of Accounting II	4
	or	
ACCT2155	Financial Accounting	4

Total Credits 7

Graduation (17 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 2010 / EP 2011

Business

Business Transfer Pathway (BP/EP) Associate of Science

Overview and Award Outcomes

Overview

The Business Transfer Pathway AS offers students a powerful option: the opportunity to complete an Associate of Science degree with course credits that directly transfer to designated Business bachelor's degree programs at Minnesota State universities. The curriculum has been specifically designed so that students completing this pathway degree and transferring to one of the seven Minnesota State universities* enter the university with junior-year status. All courses in the Transfer Pathway associate degree will directly transfer and apply to the designated bachelor's degree programs in a related field.

*Universities within the Minnesota State system include Bemidji State University; Metropolitan State University; Minnesota State University, Mankato; Minnesota State University Moorhead; Southwest Minnesota State University; St. Cloud State University, and Winona State University.

Award Outcomes

Solve business problems using critical thinking and decision making techniques.
Demonstrate effective oral and written communications skills in business communications.
Practice professional and ethical behavior.
Apply marketing concepts and strategies to business decision making.
Apply management concepts to business problems.
Utilize financial concepts in analysis of business problems.

Career Opportunities

This occupational area includes the following career titles: Business Manager or Business Specialist to name a few. Business Managers work within banks, insurance companies, healthcare facilities, government agencies, educational institutions, retail industries, and various service and manufacturing businesses.

Program Requirements

Technical Studies Required 29 Credits

ACCT1102	Principles of Accounting I	4
ACCT2155	Financial Accounting	4
ACCT2221	Managerial Accounting	4
BUSN1000	Introduction to Business	3
BUSN1140	Business Law	3
BUSN2005	Marketing Concepts and Strategies	4
BUSN2055	Principles of Management	4
CCIS1080	Microsoft Office Productivity Apps 1	3

General Education Required 26 Credits

COMM2050	Interpersonal Communication	3
COMM2130	Public Speaking	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
ENGL2121	Writing and Research	4
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2200	Ethics	3

General Education Elective 5 Credits

Choose five credits from two of the following MnTC

Goal Areas: 2, 3, 8, or 10

Technical Studies Elective 0 Credits

Total Associate of Science Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ACCT1102	Principles of Accounting I	4
BUSN1000	Introduction to Business	3
COMM2050	Interpersonal Communication	3
ENGL2121	Writing and Research	4

Total Credits 14

Second Semester

ACCT2155	Financial Accounting	4
BUSN1140	Business Law	3
ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
	Choose 3 credits from MnTC Goal Area 2, 3, 8, or 10	3

Total Credits 16

Third Semester

BUSN2005	Marketing Concepts and Strategies	4
BUSN2055	Principles of Management	4
CCIS1080	Microsoft Office Productivity Apps 1	3
MATH2200	College Algebra	4

Total Credits 15

Fourth Semester

ACCT2221	Managerial Accounting	4
COMM2130	Public Speaking	3
ECON2300	Principles of Macroeconomics	3
MATH2150	Introduction to Statistics	3
	Choose two credits from MnTC Goal Area 2, 3, 8, or 10	2

Total Credits 15

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 3

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4

BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 8

ARTS2050	Introduction to Art	3
BIOL2003	Nutrition and Health	3
ECON2300	Principles of Macroeconomics	3
PHIL2500	World Religions	3

MNTC Goal Area 10

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
PHIL2600	Environmental Ethics	3
SOCI2130	Food, Culture and Society	3

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP BTBU / EP ETBU

Entrepreneurship (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Entrepreneurship AAS program is designed for students who are interested starting their own business or buying a small business or franchise. The course work will provide students with the innovation, management, marketing, communication and financial skills required to successfully start and run a small business. The program will also give students a solid background in the theory, process and practice of entrepreneurship. Courses for the program are delivered in a mix of classroom and online formats.

Award Outcomes

Solve business problems using critical thinking and decision making techniques.
Demonstrate interpersonal and team building skills.
Demonstrate oral and written communications skills.
Demonstrate professional and ethical behavior.
Apply marketing concepts and strategies to business decision making.
Apply management concepts to business problems.
Analyze business problems using financial tools and concepts.
Demonstrate innovative thinking in the development of business models, products and services.
Apply operations concepts to solving business problems.

Career Opportunities

Starting or buying a business, or managing a small business is a solid career option for students from a variety of technical and skill backgrounds. This occupational area complements any other certificate, diploma or degree. Entrepreneurs work in virtually every industry in the American economy: finance, real estate, insurance, health-care, manufacturing, construction, automotive and retail industries. In recent years, the allure of entrepreneurship has increased, with the results that more people than ever before are choosing to operate their own business. 600,000 – 800,000 new business are created in the US every year, and small businesses provide almost 50% of all private sector jobs in the US.

Program Requirements

Technical Studies Required 45 Credits

ACCT1000	Introduction to Accounting	3
ACCT1135	QuickBooks	3
ACCT1410	Business Finance	3
BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
BUSN1100	Supervision	3
BUSN1140	Business Law	3
BUSN1200	Managerial Communication	3
BUSN1510	Entrepreneurship	3
BUSN2005	Marketing Concepts and Strategies	4
BUSN2055	Principles of Management	4
BUSN2075	Digital Marketing	3
BUSN2085	Small Business Operations	4
BUSN2100	Capstone	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	Choose any course from MnTC Goal Area 4 (Mathematical/Logical Reasoning)	3

Choose one of the following:

	Any course from Goal 5 (History and the Social and Behavioral Sciences) or Goal 9 (Ethics and Civic Responsibility) of the Minnesota Transfer Curriculum	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
BUSN1100	Supervision	3
COMM2130	Public Speaking	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 15

Second Semester

ACCT1000	Introduction to Accounting	3
BUSN1140	Business Law	3
BUSN2005	Marketing Concepts and Strategies	4
PHIL2100	Critical Thinking for College Success	3
	Choose 3 credits from MnTC Goal Area 4	3

Total Credits 16

Third Semester

ACCT1410	Business Finance	3
BUSN1200	Managerial Communication	3
BUSN1510	Entrepreneurship	3
BUSN2055	Principles of Management	4
BUSN2075	Digital Marketing	3

Total Credits 16

Fourth Semester

ACCT1135	QuickBooks	3
BUSN2085	Small Business Operations	4
BUSN2100	Capstone	3
	Choose 3 credits from MnTC Goal Area 5	3
	or	
	Choose three credits from MnTC Goal Area 9	3

Total Credits 13

MnTC Goal Area 4

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5

PHIL2000	Introduction to Logic	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

MnTC Goal Area 9

ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2600	Environmental Ethics	3
SOCI2120	Introduction to Criminal Justice	3

Graduation (60 credits)

This academic planning guide is a tool meant for students to discuss their schedule each semester with their faculty advisor. Some courses may be offered only once per year and only on one campus.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP 2516 / EP 2517

Management (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

There is a need for technical professionals to broaden their horizons and enhance their skills. This flexible award lets you bundle technical courses with business skills courses so you can enhance your technical training with the most relevant soft skills.

There is a demand for people who have the ability to apply business knowledge in solving problems. To be successful in business a person must have qualities that include the ability to work well with others, the desire to be part of a team, and the ability to work in a rapidly changing environment. Others include critical thinking, decision-making, problem-solving, questioning, diplomacy, and negotiation, along with good oral and written communication skills.

Award Outcomes

Solve business problems using critical thinking and decision making techniques.
Demonstrate interpersonal and team building skills.
Demonstrate effective oral and written communications skills in business communications.
Practice professional and ethical behavior.
Apply marketing concepts and strategies to business decision making.
Apply management concepts to business problems.
Utilize financial concepts in analysis of business problems.

Career Opportunities

This occupational area includes the following career titles: Business Manager or Business Specialist. Business managers work in every industry including finance, real estate, insurance, healthcare, manufacturing, construction, automotive and retail.

Program Requirements

Technical Studies Required 35 Credits

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
ACCT1410	Business Finance	3
	or	
ACCT2155	Financial Accounting	4
BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
BUSN1100	Supervision	3
BUSN1140	Business Law	3
BUSN1150	Introduction to Service and Work Team Strategies	3
BUSN1200	Managerial Communication	3
BUSN1510	Entrepreneurship	3
BUSN2005	Marketing Concepts and Strategies	4
BUSN2055	Principles of Management	4

General Education Required 15 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	Choose any course from MnTC Goal Area 4 (Mathematical/Logical Reasoning)	3

Choose one of the following:

COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Choose one of the following:

	Any course from Goal 5 (History and the Social and Behavioral Sciences) or Goal 9 (Ethics and Civic Responsibility) of the Minnesota Transfer Curriculum	3

General Education Elective 0 Credits

Technical Studies Elective 10 Credits

	Recommended:	
BUSN1025	Introduction to Esports Business	3
BUSN1030	Professional Development	3
BUSN1041	Customer Relationship Management (CRM)	3
BUSN1060	Territory/Account Management	3
BUSN1091	Consultative Selling	3
BUSN1300	E-Business	3
BUSN1500	Database Concepts and Data Analysis Tools	3
BUSN2000	Business Analysis	4
BUSN2010	Requirements Management with Use Cases	3
BUSN2015	Marketing Applications	3
BUSN2075	Digital Marketing	3
BUSN2085	Small Business Operations	4
BUSN2100	Capstone	3
BUSN2170	Supervised Occupational Experience	4

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Prerequisite: Qualifying score on Computer Literacy Assessment test

First Semester

BUSN1000	Introduction to Business	3
BUSN1100	Supervision	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Technical Studies Electives	3

Total Credits 12

Second Semester

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
BUSN1020	Introduction to Selling	3
BUSN2055	Principles of Management	4
COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
	or	
COMM2130	Public Speaking	3
	Technical Studies Electives	3

Total Credits 16

Third Semester

BUSN1140	Business Law	3
BUSN1150	Introduction to Service and Work Team Strategies	3

BUSN1200	Managerial Communication	3
BUSN2005	Marketing Concepts and Strategies	4
	Choose 3 credits from MnTC Goal Area 5	3
	or	
	Choose 3 credits from MnTC Goal Area 9	3

Total Credits 16

Fourth Semester

ACCT1410	Business Finance	3
	or	
ACCT2155	Financial Accounting	4
BUSN1510	Entrepreneurship	3
PHIL2100	Critical Thinking for College Success	3
	Choose 3 credits from MnTC Goal Area 4	3
	Technical Studies Electives	4

Total Credits 16

Technical Studies Electives

10 Credits from BUSN courses.

BUSN1025	Introduction to Esports Business	3
BUSN1030	Professional Development	3
BUSN1041	Customer Relationship Management (CRM)	3
BUSN1060	Territory/Account Management	3
BUSN1091	Consultative Selling	3
BUSN1300	E-Business	3
BUSN1500	Database Concepts and Data Analysis Tools	3
BUSN2000	Business Analysis	4
BUSN2010	Requirements Management with Use Cases	3
BUSN2015	Marketing Applications	3
BUSN2075	Digital Marketing	3
BUSN2085	Small Business Operations	4
BUSN2100	Capstone	3
BUSN2170	Supervised Occupational Experience	4

MnTC Goal Area 4

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

	MnTC Goal Area 4	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

Choose a Total of: 3 Credits

MnTC Goal Area 5 or MnTC Goal Area 9

	MnTC Goal Area 5	
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3

SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3
	or	
	MnTC Goal Area 9	
ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2600	Environmental Ethics	3
SOCI2120	Introduction to Criminal Justice	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

This semester sequence is a tool meant for students to discuss their schedule each semester with their faculty advisor. Some courses may be offered only once per year and only on one campus.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP 2512 / EP 2513

Marketing and Sales (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Professionals in marketing and sales are directly involved with helping businesses expand and grow revenue. Marketing covers a broad spectrum of roles including (but not limited to) advertising, promotion, public relations, sales, branding, creative design, research, analysis and consulting. Since every business must engage in some form of marketing, career opportunities are plentiful. The successful marketing and sales professional is an effective communicator, thinks creatively, values teamwork and focuses on the needs of the customer to find the best solutions. In addition, graduates must develop the following skills: critical thinking, decision-making, problem solving, negotiation, plus excellent oral and written communication.

Award Outcomes

Develop marketing strategies based on product, price, promotion and place objectives.
Solve marketing and sales problems using critical thinking and decision making techniques.
Apply strategic marketing concepts to develop and implement a marketing plan.
Demonstrate the steps of an interactive sales process.
Collect and analyze consumer data to make informed marketing decisions.
Demonstrate effective oral and written communications skills.
Apply CRM in the concept of account management.
Utilize financial concepts in analysis of business problems.

Career Opportunities

This occupational area includes the following career titles: Marketing Specialist, Marketing Associate, Account Manager, Sales Professional, Marketing Assistant, Brand Manager, Customer Service Representative, Account Specialist, Client Relations Specialist, Sales Manager, Sales Support Specialist. Marketing and sales professionals work with virtually every industry in the American economy including healthcare, finance, real estate, insurance, manufacturing, construction, automotive and retail industries.

Program Requirements

Technical Studies Required 45 Credits

BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
BUSN1030	Professional Development	3
BUSN1041	Customer Relationship Management (CRM)	3
BUSN1060	Territory/Account Management	3
BUSN1091	Consultative Selling	3
BUSN1150	Introduction to Service and Work Team Strategies	3
BUSN1200	Managerial Communication	3
BUSN2005	Marketing Concepts and Strategies	4
BUSN2015	Marketing Applications	3
BUSN2055	Principles of Management	4
BUSN2075	Digital Marketing	3
BUSN2170	Supervised Occupational Experience	4
CCIS1080	Microsoft Office Productivity Apps 1	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	Choose any course from MnTC Goal Area 4 (Mathematical/Logical Reasoning)	3

Choose one of the following:

	Any course from Goal 5 (History and the Social and Behavioral Sciences) or Goal 9 (Ethics and Civic Responsibility) of the Minnesota Transfer Curriculum	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Prerequisite: Qualifying score on Computer Literacy assessment test

First Semester

BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
CCIS1080	Microsoft Office Productivity Apps 1	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 4	3

Total Credits 15

Second Semester

BUSN1091	Consultative Selling	3
BUSN1150	Introduction to Service and Work Team Strategies	3
BUSN2005	Marketing Concepts and Strategies	4
PHIL2100	Critical Thinking for College Success	3

Total Credits 13

Third Semester

BUSN1030	Professional Development	3
BUSN1200	Managerial Communication	3
BUSN2055	Principles of Management	4
BUSN2075	Digital Marketing	3
	Choose 3 credits from MnTC Goal Area 5	3
	or	
	Choose 3 credits from MnTC Goal Area 9	3

Total Credits 16

Fourth Semester

BUSN1041	Customer Relationship Management (CRM)	3
BUSN1060	Territory/Account Management	3
BUSN2015	Marketing Applications	3
BUSN2170	Supervised Occupational Experience	4
COMM2130	Public Speaking	3

Total Credits 16

MnTC Goal Area 4

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

MATH2050	Applications of Quantitative Reasoning	3

MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

Choose a Total of: 3 Credits

MnTC Goal Area 5 or MnTC Goal Area 9

	MnTC Goal Area 5	
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3
	or	
	MnTC Goal Area 9	
ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2600	Environmental Ethics	3
SOCI2120	Introduction to Criminal Justice	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Possible 55 Credits toward Bachelor of Applied Science in Sales Management at Metro State University.

This semester sequence is a tool meant for students to discuss their schedule each semester with their faculty advisor. Some courses may be offered only once per year and only on one campus.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP 2508 / EP 2509

Entrepreneurship (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate combines a practical, step-by-step approach with a theoretical foundation to form a basic framework for understanding the theory, process, and practice of entrepreneurship. The aim of the certificate is to present the most current thinking in entrepreneurship as well as provide learners the opportunity to apply ideas and develop useful entrepreneurial skills.

Award Outcomes

Solve business problems.
Demonstrate interpersonal skills.
Demonstrate oral and written communications skills.
Demonstrate professional and ethical behavior.
Apply marketing concepts and strategies.
Apply supervision concepts to business problems.
Utilize financial concepts in analysis of business problems.

Career Opportunities

This occupational area complements any other certificate, diploma or degree. Someone with this certificate will work within banks, insurance companies, health care facilities, government agencies, educational institutions, retail industries, and various service and manufacturing businesses. Entrepreneurs work with virtually every industry in the American economy: finance, real estate, insurance, health-care, manufacturing, construction, automotive and retail industries. In recent years, the allure of entrepreneurship has increased, with the results that more people than ever before are choosing to operate their own business.

Program Requirements

Technical Studies Required 19 Credits

ACCT1410	Business Finance	3
BUSN1000	Introduction to Business	3
BUSN1020	Introduction to Selling	3
BUSN1100	Supervision	3
BUSN1510	Entrepreneurship	3
BUSN2005	Marketing Concepts and Strategies	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 19

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ACCT1410	Business Finance	3
BUSN1000	Introduction to Business	3
BUSN2005	Marketing Concepts and Strategies	4

Total Credits 10

Second Semester

BUSN1020	Introduction to Selling	3
BUSN1100	Supervision	3
BUSN1510	Entrepreneurship	3

Total Credits 9

Graduation (19 Credits)

This semester sequence is a tool meant for students to discuss their schedule each semester with their faculty advisor. Some courses may be offered only once per year and only on one campus.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP 2514 / EP 2515

Supervisory Management (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed for current supervisors or employees training for current supervisory management positions who are responsible for managing the performance of others in order to achieve organizational results.

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Demonstrate interpersonal and team building skills.
Demonstrate effective oral and written communications skills in business communications.
Practice effective supervision techniques.
Solve business problems using fundamental business concepts.

Career Opportunities

Someone with this certificate will work in any industry which requires frontline managers to impact employee performance and productivity. Manufacturing businesses, building and construction, banks, insurance companies, healthcare facilities, government agencies, education institutions, retail industries and various service businesses are among industries that hire supervisors.

Program Requirements

Technical Studies Required 16 Credits

BUSN1000	Introduction to Business	3
BUSN1100	Supervision	3
BUSN1140	Business Law	3
BUSN1150	Introduction to Service and Work Team Strategies	3
BUSN2055	Principles of Management	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

BUSN1000	Introduction to Business	3
BUSN1100	Supervision	3
BUSN1140	Business Law	3
BUSN1150	Introduction to Service and Work Team Strategies	3
BUSN2055	Principles of Management	4

Total Credits 16

Graduation (16 Credits)

This semester sequence is a tool meant for students to discuss their schedule each semester with their faculty advisor. Some courses may be offered only once per year and only on one campus.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/25/2020 : BP 2506 / EP 2507

Individualized Studies
Information Technology

Cyber Defense and Network Security (BP/EP) Associate of Applied Science

Overview and Award Outcomes

Overview

Intended for working professionals and students in technology-related fields, this advanced technical certificate provides students the opportunity to utilize the tools and systems to monitor, mitigate, and prevent threats to computer networks. With content developed by security professionals, the curriculum is based on a foundation of industry-relevant topics including: network and host security, modern vulnerabilities and threats, internet security, software security, and legal issues surrounding information assurance. In addition, students will explore ethical hacking, penetration testing, and multi-vendor firewall configurations. Through hands-on experience, this degree prepares individuals to become a skilled network security professional.

Learning outcomes for this program are based on the NSA and the Department of Homeland Security guidelines. The curriculum in this award is aligned with the globally recognized CompTIA Security+ and Cisco CCNA Security certifications. Both certifications are valuable for students either entering into the information security field or advancing one's career with a Cyber Defense specialization.

Award Outcomes

Identify security threats and attacks facing modern networks.
Describe issues surrounding computer security.
Analyze tools and technologies to prevent and detect cyber-attacks.
Apply cyber defense strategies to secure an organization's computer network.
Identify requirements needed for developing secure software systems.
Describe best practices for developing a security policy.
List the applicable laws and policies related to cyber defense.

Career Opportunities

Network and Firewall Security Technician, Security Analyst, Security Specialist/Administrator, Security Operations Specialist, Network Administrator, Penetration Tester, Security Engineer, Cyber Defense Analyst.

Program Requirements

Technical Studies Required 45 Credits

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS1505	Fundamentals of Programming	4
CCIS2122	Linux Admin 2	4
CCIS2415	IT Security Management and Compliance	3
CCIS2422	CCNA Security	2
CCIS2505	Cybersecurity Essentials	3
CCIS2510	Software and System Security	3
CCIS2515	Firewall Essentials	2
CCIS2525	Modern Cryptography	1
CCIS2535	Ethical Hacking and Cyber Defense	2

General Education Required 9 Credits

COMM2060	Small Group Communication	3
ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 3, 4, or	3

5

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
COMM2060	Small Group Communication	3
	General Education Electives	3

Total Credits 16

Second Semester

CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1505	Fundamentals of Programming	4
CCIS2505	Cybersecurity Essentials	3
ENGL2125	Technical Writing	3

Total Credits 17

Third Semester

CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2122	Linux Admin 2	4
CCIS2415	IT Security Management and Compliance	3
CCIS2510	Software and System Security	3
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

Total Credits 17

Fourth Semester

CCIS2422	CCNA Security	2
CCIS2515	Firewall Essentials	2
CCIS2525	Modern Cryptography	1
CCIS2535	Ethical Hacking and Cyber Defense	2
	General Education Electives	3

Total Credits 10

MnTC Goal Area 3

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4

BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (60 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 2184 / EP 2185

SQL Software Developer (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This degree offers the skills necessary for computer application development and design. The .NET framework will be used to design, code, document, and implement computer applications. Exposure to database management systems and Client/Server Computing will further familiarize students with the current trends in distributed processing.

Award Outcomes

Construct web based applications.
Write an application that makes use of common business information systems environments.
Create graphical user interfaces.
Create an application that demonstrates the principles of object oriented design.
Design and code business applications.
Develop code using software and languages common to the industry.
Generate data structures using relational databases.
Use a structured approach to solving business problems using a SDLC Methodology.
Analyze business communication systems.
Demonstrate knowledge of program flow and control by writing appropriate application code.

Career Opportunities

Positions are available as Computer Programmers.

Program Requirements

Technical Studies Required 43 Credits

CCIS1301	HTML & CSS	3
CCIS1505	Fundamentals of Programming	4
CCIS2500	Mobile Application Development	4
CCIS2575	.NET Programming I	4
CCIS2585	.NET Programming II	4
CCIS2591	JavaScript	4
CCIS2645	Introduction to ASP.NET	4
CCIS2701	Database Design and SQL	4
CCIS2781	SQL Server - TransactSQL	4
CCIS2801	Systems Analysis	4
CCIS2841	Client/Server Computing	4

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Choose one of the following:

COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Choose one of the following:

	Any course from Goal 2 (Critical Thinking) or Goal 4 (Mathematical/Logical Reasoning) of the Minnesota Transfer Curriculum	3

Choose one of the following:

	Any course from Goal 5 (History and the Social and Behavioral Sciences) or Goal 9 (Ethics and Civic Responsibility) of the Minnesota Transfer Curriculum	3

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 2 Credits

Any BUSN or CCIS course that is not required for this award may be used as an elective.

Recommended:

CCIS1000	Information Systems	3
CCIS2055	Project Management	3
CCIS2385	IT Internship	2 - 8
CCIS2786	SQL Server - System Administration	4

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1301	HTML & CSS	3
CCIS1505	Fundamentals of Programming	4
	General Education Electives	3
	Choose 3 credits from MnTC Goal Area 2	3
	or	
	Choose 3 credits from MnTC Goal Area 4	3
	Choose 3 credits from MnTC Goal Area 5	3
	or	
	Choose 3 credits from MnTC Goal Area 9	3

Total Credits 16

Second Semester

CCIS2575	.NET Programming I	4
CCIS2591	JavaScript	4
CCIS2701	Database Design and SQL	4
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 15

Third Semester

CCIS2500	Mobile Application Development	4
CCIS2585	.NET Programming II	4
CCIS2781	SQL Server - TransactSQL	4
	Technical Studies Electives	2

Total Credits 14

Fourth Semester

CCIS2645	Introduction to ASP.NET	4
CCIS2801	Systems Analysis	4
CCIS2841	Client/Server Computing	4
	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Total Credits 15

Technical Studies Electives

Any Business (BUSN) or Information Technology/Computer Careers (CCIS) course that is not required for this award may be used as an elective.

CCIS1000	Information Systems	3
CCIS2055	Project Management	3
CCIS2385	IT Internship	2 - 8
CCIS2786	SQL Server - System Administration	4

Choose a Total of: 2 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 2 or MnTC Goal Area 4

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

	MnTC Goal Area 2	
BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

	MnTC Goal Area 4	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

Choose a Total of: 3 Credits

MnTC Goal Area 5 or MnTC Goal Area 9

	MnTC Goal Area 5	
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3

SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3
	MnTC Goal Area 9	
ECON2200	Principles of Microeconomics	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2600	Environmental Ethics	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/21/2020 : BP 2152 / EP 2153

Organizational Support (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This program prepares students for a career in organizational support with marketable job skills that are highly valued by many businesses. Coursework will focus heavily on computer training and other office technologies. It is important that students pursuing a career in organizational support are able to keep pace in a busy office environment and adapt to constantly changing technology including an awareness of the issues surrounding computer security in today's highly technological world. Excellent interpersonal skills are necessary. Upon completing the degree program, students have the opportunity to undertake a variety of tasks and responsibilities and work in a professional office environment.

Prerequisite Knowledge: Qualifying score on keyboarding assessment test or CPLT1000, qualifying score on math assessment test or MATH1700, qualifying score on reading assessment test or ENGL0921, and qualifying score on writing assessment test or ENGL1021 or ENGL1026.

Award Outcomes

Record business transactions.
Compare decision making solutions.
Describe issues surrounding computer security.
Construct relational databases with an efficient design.
Produce business documents.
Create dynamic presentations.
Perform basic operating system functions.
Create publications.
Make decisions regarding project task management.
Demonstrate integration features of office suite.
Utilize office suite personal information manager.
Identify communication styles.
Compose business documents.
Utilize proofreading and editing skills.
Exhibit detail-oriented skills.
Demonstrate effective written communication skills.
Demonstrate effective oral communication skills.

Career Opportunities

Positions are available in organizational support. Organizational support careers rank among the largest occupations in the U.S. economy. Salaries vary by skill, experience, and level of responsibility. Employment may be found with banks, insurance companies, health care facilities, government agencies, educational institutions, retail industries and various service and manufacturing businesses. Information on careers, salary, and employment outlook is available on the Minnesota State Careerwise and Bureau of Labor Statistics websites: www.careerwise.minnstate.edu and www.bls.gov.

Program Requirements

Technical Studies Required 44 Credits

ACCT1000	Introduction to Accounting	3
ACCT1125	Excel	3
BUSN1000	Introduction to Business	3
CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CCIS1310	Microsoft Publisher	3
CCIS2055	Project Management	3
CCIS2090	Microsoft Office Integration	3
CCIS2875	Workplace Readiness Skills Assessment	0

CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3

General Education Required 9 Credits

ENGL2125	Technical Writing	3
COMM2060	Small Group Communication	3
MATH2200	College Algebra	4
	or	
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 1 Credit

Any Accounting (ACCT), Business (BUSN), IT/Computer Careers (CCIS), or Universal Technical Elective course that is not required for this award may be used as an elective.

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Prerequisite: Qualifying score on the computer literacy assessment test and 20 net words a minute on keyboarding assessment test or CPLT1000 and CPLT1100.

First Semester

CCIS1000	Information Systems	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CPLT1100	Computer Essentials	3
MATH2200	College Algebra	4
	or	
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3
	Any Accounting (ACCT), Business (BUSN), IT/Computer Career (CCIS), or Universal Technical Elective course that is not required for this award may be used as an elective	1

Total Credits 15

Second Semester

ACCT1000	Introduction to Accounting	3
CCIS1005	Computer Security Awareness	3
CCIS1035	Microsoft Word	3
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL2125	Technical Writing	3

Total Credits 15

Third Semester

ACCT1125	Excel	3
CCIS1032	Microsoft Access	3
CCIS1042	Microsoft PowerPoint	3
COMM2060	Small Group Communication	3

	General Education Electives	3

Total Credits 15

Fourth Semester

BUSN1000	Introduction to Business	3
CCIS1310	Microsoft Publisher	3
CCIS2055	Project Management	3
CCIS2090	Microsoft Office Integration	3
CCIS2875	Workplace Readiness Skills Assessment	0
COMM2060	Small Group Communication	3
	General Education Electives	3

Total Credits 15

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

MnTC Goal Area 3

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (60 Credits)

Prerequisite: CPLT1000 Computer Keyboarding or comparable course. Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/27/2020 : BP 2150 / EP 2151

IT Support (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

IT Support will train the student for employment providing service to computer users, including hardware and software installation and technical assistance. Coursework includes experiences and instruction in communication and problem-solving skills as well as technical training with hardware, software, operating systems, application software and network operations.

IT Support will prepare the student to select, maintain, configure and oversee the installation of business-oriented computers and software. Students will also know how to train and support users to include skills to analyze problems and resolve recurring difficulties such as issues surrounding computer security in today's highly technological world. This person must be an excellent communicator and troubleshooter who can excel in fast paced environment.

Award Outcomes

Compare decision making solutions.
Understand changing role of IS Professionals.
Describe issues surrounding computer security.
Construct relational databases with an efficient design.
Produce variety of business documents.
Create dynamic presentations.
Perform basic operating system functions.
Apply basic networking functions.
Administer a network operating system.
Make decisions regarding project task management.
Exhibit customer service skills.
Demonstrate integration features of office suite.
Utilize office suite personal information manager.
Apply problem-solving methodologies.
Provide critical-thinking solution strategies.
Demonstrate effective written communication skills.
Demonstrate effective oral communication skills.

Career Opportunities

Positions are available as IT Support Specialist, IT Trainer, IT Coordinator, Help Desk and Computer Lab Assistant.

Program Requirements

Technical Studies Required 42 Credits

CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS2055	Project Management	3
CCIS2065	Help Desk/User Support	3
CCIS2090	Microsoft Office Integration	3
CCIS2675	A+ Hardware Support	3
CCIS2680	A+ Software Support	3
CCIS2885	IT Support Skills Assessment	0

General Education Required 9 Credits

ENGL2125	Technical Writing	3
COMM2060	Small Group Communication	3

Choose one of the following:

	Any course from Goal 3 (Natural Sciences),	3

	Goal 4 (Mathematical/Logical Reasoning), or Goal 5 (History and the Social and Behavioral Sciences) of the Minnesota Transfer Curriculum	

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 3 Credits

Any CCIS Course that is not required for this award may be used as an elective.

Recommended:

CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1301	HTML & CSS	3
CCIS1310	Microsoft Publisher	3
CCIS1515	Programming Overview	3
CCIS2122	Linux Admin 2	4
CCIS2150	Windows Admin 2	4
CCIS2385	IT Internship	2 - 8
CCIS2685	A+ Exam Prep	1

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor

Prerequisite: Qualifying score on computer literacy assessment test or CPLT1000 or CPLT1100 or METS1000

First Semester

CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1102	PC Operating Systems	3
	General Education Electives	3

Total Credits 15

Second Semester

CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
CCIS1105	Network Essentials	4
CCIS2675	A+ Hardware Support	3
ENGL2125	Technical Writing	3

Total Credits 15

Third Semester

CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS2680	A+ Software Support	3
	General Education Electives	3
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

Total Credits 15

Fourth Semester

CCIS2055	Project Management	3
CCIS2065	Help Desk/User Support	3

CCIS2090	Microsoft Office Integration	3
CCIS2875	Workplace Readiness Skills Assessment	0
	Technical Studies Electives	3
COMM2060	Small Group Communication	3

Total Credits 15

Technical Studies Electives

Recommended:

CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1301	HTML & CSS	3
CCIS1310	Microsoft Publisher	3
CCIS1515	Programming Overview	3
CCIS2122	Linux Admin 2	4
CCIS2150	Windows Admin 2	4
CCIS2385	IT Internship	2 - 8
CCIS2685	A+ Exam Prep	1

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

MnTC Goal Area 3

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3

PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (60 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/21/2020 : BP 2108 / EP 2165

Network Administrator/Analyst (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This degree provides the skills needed to design, manage, troubleshoot and secure a network environment. Platforms include Windows, Windows Server, Linux, Cisco, Cloud and the Internet. Skill development includes data communications, TCP/IP, hardware, software, network operating systems, cloud solutions, virtualization, and security.

Award Outcomes

Install hardware and software to meet enterprise needs.
Perform tasks required of a Windows network administrator.
Provide Technical Support for customers.
Set up computer networks.
Perform preventative maintenance.
Demonstrate safe service of system operation.
Explain principles of system operation.

Career Opportunities

The following positions are available with this degree:
• Network Administrator
• Network Developer
• Network Technician
• Network Analyst
• IT Analyst
• Cisco Network Engineer
• Windows Server Administrator
• Linux Server Administrator
• System Administrator
• Computer Network Support Specialist
• Network and Computer Systems Administrator

Program Requirements

Technical Studies Required 43 Credits

CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
	or	
CCIS1490	CCNA Specialty Fields	3
CCIS1505	Fundamentals of Programming	4
CCIS2122	Linux Admin 2	4
CCIS2150	Windows Admin 2	4
CCIS2161	Linux Admin 3	3
	or	
CCIS2270	Windows Admin 3	4
CCIS2675	A+ Hardware Support	3
CCIS2841	Client/Server Computing	4

CCIS2880	Network Admin Technical Skills Assessment	0

General Education Required 9 Credits

ENGL2125	Technical Writing	3
COMM2060	Small Group Communication	3

Choose one of the following:

	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 2 Credits

Any CCIS course that is not required for this award may be used as an elective.

Recommended:

CCIS1005	Computer Security Awareness	3
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS2055	Project Management	3
CCIS2065	Help Desk/User Support	3
CCIS2680	A+ Software Support	3
CCIS2685	A+ Exam Prep	1

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Prerequisite: Qualifying score on the computer literacy assessment test OR CPLT1000 and CPLT1100 OR CCIS1000 and CCIS1101

First Semester

CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1505	Fundamentals of Programming	4
CCIS2675	A+ Hardware Support	3
COMM2060	Small Group Communication	3

Total Credits 17

Second Semester

CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS2150	Windows Admin 2	4
ENGL2125	Technical Writing	3

Total Credits 14

Third Semester

CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2122	Linux Admin 2	4
CCIS2841	Client/Server Computing	4
	Choose one of the following:	
CCIS2161	Linux Admin 3	3
CCIS2270	Windows Admin 3	4

Total Credits 15

Fourth Semester

	Choose one of the following:	
CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
CCIS1490	CCNA Specialty Fields	3
CCIS2880	Network Admin Technical Skills Assessment	0
	Technical Studies Electives	2
	General Education Electives	6
	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3

Total Credits 14

Technical Studies Electives

Any Computer Careers/Information Technology (CCIS) course that is not required for this award may be used as an elective.

Recommended:

CCIS1005	Computer Security Awareness	3
CCIS1102	PC Operating Systems	3
CCIS1301	HTML & CSS	3
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS2385	IT Internship	2 - 8
CCIS2680	A+ Software Support	3
CCIS2685	A+ Exam Prep	1

Choose a Total of: 2 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 3

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5

PHIL2000	Introduction to Logic	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/21/2020 : BP 2104 / EP 2105

SQL Software Developer (BP/EP) Diploma

Overview and Award Outcomes

Overview

This degree offers the skills necessary for computer application development and design. The .NET framework will be used to design, code, document and implement computer applications. Exposure to database management systems and client/server theory will further familiarize students with the current trends in distributed processing.

Award Outcomes

Construct web based applications.
Write an application that makes use of common business information systems environments.
Create graphical user interfaces.
Create an application that demonstrates the principles of object oriented design.
Design and code business applications.
Develop code using software and languages common to the industry.
Generate data structures using relational databases.
Use a structured approach to solving business problems using a SDLC Methodology.
Analyze business communication systems.
Demonstrate knowledge of program flow and control by writing appropriate application code.

Career Opportunities

Positions are available as Computer Programmers.

Program Requirements

Technical Studies Required 35 Credits

CCIS1301	HTML & CSS	3
CCIS1505	Fundamentals of Programming	4
CCIS2500	Mobile Application Development	4
CCIS2575	.NET Programming I	4
CCIS2585	.NET Programming II	4
CCIS2645	Introduction to ASP.NET	4
CCIS2701	Database Design and SQL	4
CCIS2781	SQL Server - TransactSQL	4
CCIS2841	Client/Server Computing	4

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
	or	
ENGL2001	Workplace Correspondence	2
ENGL1021	Essay Fundamentals	3
	or	
ENGL1026	Writing for Careers	3
MATH1500	Beginning Algebra	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 43

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1301	HTML & CSS	3
CCIS1505	Fundamentals of Programming	4

MATH1500	Beginning Algebra	3
ENGL1021	Essay Fundamentals	3
	or	
ENGL1026	Writing for Careers	3

Total Credits 13

Second Semester

CCIS2575	.NET Programming I	4
CCIS2701	Database Design and SQL	4
COMM1050	Communication in the Workplace	2
	or	
ENGL2001	Workplace Correspondence	2

Total Credits 10

Third Semester

CCIS2500	Mobile Application Development	4
CCIS2585	.NET Programming II	4
CCIS2781	SQL Server - TransactSQL	4

Total Credits 12

Fourth Semester

CCIS2841	Client/Server Computing	4
CCIS2645	Introduction to ASP.NET	4

Total Credits 8

Graduation (43 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/22/2020 : BP 2154 / EP 2155

IT Support Specialist (BP/EP) Diploma

Overview and Award Outcomes

Overview

IT Support will train the student for employment providing service to computer users, including hardware and software installation and technical assistance. Coursework includes experiences and instruction in communication and problem-solving skills as well as technical training with hardware, software, operating systems, application software and network operations.

IT Support will prepare the student to select, maintain, configure and oversee the installation of business-oriented computers and software. Students will also know how to train and support users to include skills to analyze problems and resolve recurring difficulties such as issues surrounding computer security in today's highly technological world. This Student must be an excellent communicator and troubleshooter who can excel in fast paced environment.

Award Outcomes

Compare decision making solutions.
Understand changing role of IS Professionals.
Describe issues surrounding computer security.
Construct relational databases with an efficient design.
Produce variety of business documents.
Create dynamic presentations.
Perform basic operating system functions.
Apply basic networking functions.
Make decisions regarding project task management.
Exhibit customer service skills.
Demonstrate integration features of office suite.
Utilize office suite personal information manager.
Apply problem-solving methodologies.
Provide critical-thinking solution strategies.
Identify communication styles.
Demonstrate effective written communication skills.

Career Opportunities

Positions are available as IT Support Specialist, IT Trainer, IT Coordinator, Help Desk and Computer Lab Assistant

Program Requirements

Technical Studies Required 42 Credits

CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS2055	Project Management	3
CCIS2065	Help Desk/User Support	3
CCIS2090	Microsoft Office Integration	3
CCIS2675	A+ Hardware Support	3
CCIS2680	A+ Software Support	3

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
ENGL1026	Writing for Careers	3
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 50

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Qualifying score on the computer literacy assessment test or CPLT1000 or CPLT1100 or METS1000.

First Semester

CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1105	Network Essentials	4
CCIS1102	PC Operating Systems	3

Total Credits 16

Second Semester

CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
CCIS1110	Windows Admin 1	3
CCIS2675	A+ Hardware Support	3
ENGL1026	Writing for Careers	3

Total Credits 14

Third Semester

CCIS1121	Linux Admin 1	3
CCIS2090	Microsoft Office Integration	3
CCIS2680	A+ Software Support	3
COMM1050	Communication in the Workplace	2
	Choose one of the following:	
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3

Total Credits 14

Fourth Semester

CCIS2055	Project Management	3
CCIS2065	Help Desk/User Support	3

Total Credits 6

Graduation (50 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/22/2020 : BP 2111 / EP 2167

Network Support Specialist (BP/EP) Diploma

Overview and Award Outcomes

Overview

This degree provides the skills needed to design, manage, troubleshoot and secure wired and wireless network environments. Students will gain technical skills through hardware installation, software configuration and management of computers, servers and networking devices. Microsoft Windows, Linux, Cisco, and other multi-vendor and cloud-based platforms relevant for today's networks are explored.

Award Outcomes

Install hardware and software to meet enterprise needs.
Perform tasks required of a network administrator.
Provide Technical Support for computers.
Set up computer networks.
Perform preventative maintenance.
Demonstrate safe service and repair practices.
Explain principles of network operation.

Career Opportunities

Positions are available as Network Support Specialists, Network Analysts, Network Administrators.

Program Requirements

Technical Studies Required 34 Credits

CCIS1000	Information Systems	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1102	PC Operating Systems	3
CCIS1105	Network Essentials	4
CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1505	Fundamentals of Programming	4
CCIS2675	A+ Hardware Support	3

Choose one of the following:

CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2122	Linux Admin 2	4
CCIS2150	Windows Admin 2	4

General Education Required 7 Credits

Choose two of the following:

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Choose one of the following:

ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any CCIS course that is not required for this award may be used as an elective.

Recommended:

CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS1490	CCNA Specialty Fields	3
CCIS2161	Linux Admin 3	3
CCIS2270	Windows Admin 3	4
CCIS2680	A+ Software Support	3
CCIS2685	A+ Exam Prep	1

Total Diploma Credits 44

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Prerequisite: Qualifying score on the computer literacy assessment test or CPLT1000 and CPLT1100

First Semester

CCIS1000	Information Systems	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1102	PC Operating Systems	3
	Choose two of the following:	
CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Total Credits 13

Second Semester

CCIS1105	Network Essentials	4
CCIS1505	Fundamentals of Programming	4
CCIS2675	A+ Hardware Support	3
	Choose one of the following:	
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3

Total Credits 14

Third Semester

CCIS1110	Windows Admin 1	3
CCIS1121	Linux Admin 1	3
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4

Total Credits 10

Fourth Semester

	Choose one of the following:	
CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2122	Linux Admin 2	4
CCIS2150	Windows Admin 2	4
	Technical Studies Electives	3

Total Credits 7

Technical Studies Electives

Any Computer Careers/Information Technology (CCIS) course that is not required for this award may be used as an elective.

Recommended:

CCIS1301	HTML & CSS	3
CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS1490	CCNA Specialty Fields	3
CCIS2385	IT Internship	2 - 8
CCIS2680	A+ Software Support	3
CCIS2685	A+ Exam Prep	1

Choose a Total of: 4 Credits

Graduation (44 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2112 / EP 2113

Organizational Specialist (BP/EP) Diploma

Overview and Award Outcomes

Overview

The organizational specialist is a key member of the office team. This individual will use current software applications in word processing, spreadsheets, databases, and presentations. As an organizational specialist, you may have the opportunity to serve as a communications liaison to the technology staff. Excellent interpersonal skills and the ability to assume additional responsibility are essential including an awareness of the issues surrounding computer security in today's highly technological world. Upon completing the diploma program, students will have the knowledge to undertake a variety of tasks and responsibilities within a professional office environment.

Prerequisite Knowledge: Qualifying score on keyboarding assessment test or CPLT1000, qualifying score on math assessment test, and qualifying score on reading assessment test or ENGL0921.

Award Outcomes

Record business transactions.
Compare decision making solutions.
Describe issues surrounding computer security.
Construct relational databases with an efficient design.
Produce business documents.
Create dynamic presentations.
Provide solutions using office suite.
Perform basic operating system functions.
Utilize office suite personal information manager.
Compose business documents.
Differentiate desktop vs. cloud apps.
Identify communication styles.
Utilize proofreading and editing skills.
Exhibit detail-oriented skills.

Career Opportunities

Positions are available in organizational support. Organizational support careers rank among the largest occupations in the U.S. economy. Salaries vary by skill, experience, and level of responsibility. Employment may be found with banks, insurance companies, health care facilities, government agencies, educational institutions, retail industries and various service and manufacturing businesses. Information on careers, salary, and employment outlook is available on the Minnesota State Careerwise and Bureau of Labor Statistics websites: www.careerwise.minnstate.edu and www.bls.gov.

Program Requirements

Technical Studies Required 38 Credits

ACCT1000	Introduction to Accounting	3
ACCT1125	Excel	3
CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CCIS1310	Microsoft Publisher	3
CCIS2090	Microsoft Office Integration	3
CPLT1100	Computer Essentials	3
CPLT1005	Advanced Keyboarding and Document Processing	3

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
	or	
COMM2050	Interpersonal Communication	3

ENGL1010	Business English	3
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 46

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Qualifying score on the computer literacy assessment test or CPLT1000 and CPLT1100.

First Semester

CCIS1000	Information Systems	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CPLT1100	Computer Essentials	3
	Choose one of the following:	
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3
	Choose one of the following:	
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3

Total Credits 16

Second Semester

ACCT1000	Introduction to Accounting	3
CCIS1005	Computer Security Awareness	3
CCIS1035	Microsoft Word	3
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL1010	Business English	3

Total Credits 15

Third Semester

ACCT1125	Excel	3
CCIS1032	Microsoft Access	3
CCIS1042	Microsoft PowerPoint	3
CCIS1310	Microsoft Publisher	3
CCIS2090	Microsoft Office Integration	3

Total Credits 15

Graduation (46 Credits)

Prerequisite: CPLT1000 Computer Keyboarding or comparable course. Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

Cybersecurity (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Intended for working professionals and students in technology-related fields, this 100% online certificate prepares individuals for an entry-level career in the computer security field. With content developed by security professionals, the curriculum is based on a foundation of industry-relevant topics including: network and host security, modern vulnerabilities and threats, cryptography, internet security, software security, and legal issues surrounding information assurance.

The curriculum in this award is aligned with the globally recognized CompTIA Security+ certification. The Security+ certification is an excellent starting point for information security professionals.

Enrollment Requirements: Qualified students must have one of the following: 1) a minimum of two years of computer-related work experience or 2) a two/four year degree in a computer-related field or 3) be currently enrolled in a two/four year computer-related degree.

Award Outcomes

Describe issues surrounding computer security.
Explain the function of each layer of the OSI model.
Identify security threats and attacks facing modern networks.
Configure mitigation techniques for known threats to home and business devices.
Identify requirements needed for developing secure software systems.
Describe best practices for developing a security policy.
List the applicable laws and policies related to cyber defense.

Career Opportunities

Security Support Technician, Information Security Specialist, Security Analyst, IT Security Consultant, Network Technician

Program Requirements

Technical Studies Required 16 Credits

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4
CCIS2415	IT Security Management and Compliance	3
CCIS2505	Cybersecurity Essentials	3
CCIS2510	Software and System Security	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 16

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4

Total Credits 7

Second Semester

CCIS2415	IT Security Management and Compliance	3

CCIS2505	Cybersecurity Essentials	3
CCIS2510	Software and System Security	3

Total Credits 9

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2180 / EP 2181

Cyber Defense and Network Security (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Intended for working professionals and students in technology-related fields, this advanced technical certificate provides students the opportunity to utilize the tools and systems to monitor, mitigate, and prevent threats to computer networks. With content developed by security professionals, the curriculum is based on a foundation of industry-relevant topics including: network and host security, modern vulnerabilities and threats, internet security, software security, and legal issues surrounding information assurance. In addition, students will explore ethical hacking, penetration testing, and multi-vendor firewall configurations. Through hands-on experience, this degree prepares individuals to become a skilled network security professional.

Learning outcomes for this program are based on the NSA and the Department of Homeland Security guidelines. The curriculum in this award is aligned with the globally recognized CompTIA Security+ and Cisco CCNA Security certifications. Both certifications are valuable for students either entering into the information security field or advancing one's career with a Cyber Defense specialization.

Award Outcomes

Identify security threats and attacks facing modern networks.
Describe issues surrounding computer security.
Analyze tools and technologies to prevent and detect cyber-attacks.
Apply cyber defense strategies to secure an organization's computer network.
Identify requirements needed for developing secure software systems.
Describe best practices for developing a security policy.
List the applicable laws and policies related to cyber defense.

Career Opportunities

Network and Firewall Security Technician, Security Analyst, Security Specialist/Administrator, Security Consultant, Network Administrator, Penetration Tester, Security Engineer, Cyber Vulnerability Analyst.

Program Requirements

Technical Studies Required 28 Credits

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2415	IT Security Management and Compliance	3
CCIS2422	CCNA Security	2
CCIS2505	Cybersecurity Essentials	3
CCIS2510	Software and System Security	3
CCIS2535	Ethical Hacking and Cyber Defense	2

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 28

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1005	Computer Security Awareness	3
CCIS1105	Network Essentials	4

Total Credits 7

Second Semester

CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS2505	Cybersecurity Essentials	3

Total Credits 7

Third Semester

CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS2415	IT Security Management and Compliance	3
CCIS2510	Software and System Security	3

Total Credits 10

Fourth Semester

CCIS2422	CCNA Security	2
CCIS2535	Ethical Hacking and Cyber Defense	2

Total Credits 4

Graduation (28 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 2182 / EP 2183

SQL Software Developer (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate is designed to enable computer professionals to acquire knowledge to be a contributor in a client server environment. The skills include client server concepts, database and analysis and design.

Award Outcomes

Construct web based applications.
Write an application that makes use of common business information systems environments.
Create graphical user interfaces.
Create an application that demonstrates the principles of object oriented design.
Design and code business applications.
Develop code using software and languages common to the industry.
Generate data structures using relational databases.
Use a structured approach to solving business problems using a SDLC Methodology.
Analyze business communication systems.
Demonstrate knowledge of program flow and control by writing appropriate application code.

Career Opportunities

Positions are available as Computer Programmers and Application Designers.

Program Requirements

Technical Studies Required 24 Credits

CCIS2575	.NET Programming I	4
CCIS2585	.NET Programming II	4
CCIS2645	Introduction to ASP.NET	4
CCIS2701	Database Design and SQL	4
CCIS2781	SQL Server - TransactSQL	4
CCIS2841	Client/Server Computing	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 24

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS2575	.NET Programming I	4
CCIS2701	Database Design and SQL	4
CCIS2841	Client/Server Computing	4

Total Credits 12

Second Semester

CCIS2585	.NET Programming II	4
CCIS2645	Introduction to ASP.NET	4
CCIS2781	SQL Server - TransactSQL	4

Total Credits 12

Graduation (24 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is

subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2156 / EP 2157

Cisco Networking (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

After successful completion of this award, students will be prepared to support and manage computer networks. Students will gain an understanding of the skills required to install, operate and troubleshoot network environments. Network fundamentals, LAN switching technologies, IPv4 and IPv6 routing protocols, WAN technologies, infrastructure services, infrastructure security, and infrastructure management will be explored through hands-on equipment and virtual environments.

The curriculum in this award is aligned with the globally recognized CompTIA Network+ certification, the Cisco Certified Entry Networking Technician (CCENT) certification, and the Cisco Certified Network Associate (CCNA) certification. These industry certifications validate an IT networking professional's knowledge and skill ability and open doors to beginning or advancing a career in networking.

Award Outcomes

Describe how a network works.
Implement an IP addressing scheme and IP services.
Configure VLANS and interswitch communications.
Configure basic and intermediate router operations.
Implement WAN links.
Troubleshoot network malfunctions.
Explain the function of QoS.
Monitor network performance.
Discuss current hardware and software trends impacting modern networks.

Career Opportunities

The following positions are available with this degree:
• Network Technician
• Network Administrator
• Network Analyst
• Network Engineer
• Cisco Network Infrastructure Analyst
• Cisco Network Engineer

Program Requirements

Technical Studies Required 20 Credits

CCIS1105	Network Essentials	4
CCIS1421	CCNA 2: Basic Router and Switch Configuration	4
CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4
CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS1490	CCNA Specialty Fields	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 20

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1105	Network Essentials	4

Total Credits 4

Second Semester

CCIS1421	CCNA 2: Basic Router and Switch Configuration	4

Total Credits 4

Third Semester

CCIS1431	CCNA 3: Intermediate Router and Switch Configuration	4

Total Credits 4

Fourth Semester

CCIS1443	CCNA 4: WANs, VPNs, and Enterprise Networks	4
CCIS1480	CCNA (Cisco Certified Network Associate) Exam Prep	1
CCIS1490	CCNA Specialty Fields	3

Total Credits 8

Graduation (20 Credits)

Prerequisite: Strong foundation in computer concepts or coursework required. Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in algebra. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/22/2020 : BP 2164 / EP 2136

Linux Networking (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate is designed to enable the Linux/Unix computer professional to learn the fundamentals of networking and data communication and to know how to incorporate the latest data communications equipment in the enterprise.

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Install hardware and software to meet customer needs.
Perform tasks required of a Linux network administrator.
Set up computer networks.
Perform preventative maintenance.

Career Opportunities

The following positions are available with this degree:
• Network Administrator
• Network Developer
• Linux Server Administrator

Program Requirements

Technical Studies Required 15 Credits

CCIS2122	Linux Admin 2	4
CCIS2135	PowerShell and Bash Scripting	4
CCIS2161	Linux Admin 3	3
CCIS2841	Client/Server Computing	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 15

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS2122	Linux Admin 2	4

Total Credits 4

Second Semester

CCIS2161	Linux Admin 3	3

Total Credits 3

Third Semester

CCIS2135	PowerShell and Bash Scripting	4

Total Credits 4

Fourth Semester

CCIS2841	Client/Server Computing	4

Total Credits 4

Graduation (15 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/22/2020 : BP 2130 / EP 2131

Microsoft Database Specialist (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate is designed for computer professionals to learn the fundamentals of database application development and database administration in a Microsoft environment.

Prerequisite: Strong foundation in computer concepts or coursework required. Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in algebra. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Modify databases.
Test programs and make modifications.
Coordinate security measures to safeguard information.
Calculate values for database parameters.
Create user access levels.
Develop data model describing data elements.
Revise data definitions as defined in data dictionary.

Career Opportunities

Positions are available as Microsoft SQL Server Database Administrators and Microsoft Application Developers.

Program Requirements

Technical Studies Required 23 Credits

CCIS1032	Microsoft Access	3
CCIS2575	.NET Programming I	4
CCIS2701	Database Design and SQL	4
CCIS2781	SQL Server - TransactSQL	4
CCIS2786	SQL Server - System Administration	4
CCIS2841	Client/Server Computing	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 23

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1032	Microsoft Access	3
CCIS2575	.NET Programming I	4

Total Credits 7

Second Semester

CCIS2701	Database Design and SQL	4
CCIS2781	SQL Server - TransactSQL	4

Total Credits 8

Third Semester

CCIS2786	SQL Server - System Administration	4

CCIS2841	Client/Server Computing	4

Total Credits 8

Graduation (23 Credits)

Prerequisite: Strong foundation in computer concepts or coursework required. Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in algebra. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2148 / EP 2133

Windows Networking (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate is designed to enable the Windows computer professional to learn the fundamentals of networking and data communication and to know how to incorporate the latest data communications equipment in the enterprise.

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Install hardware and software to meet enterprise needs.
Perform tasks required of a Windows network Administrator.
Set up computer networks.
Perform preventative maintenance.

Career Opportunities

The following positions are available with this degree:
• Network Administrator
• Network Developer
• Windows Server Administrator

Program Requirements

Technical Studies Required 16 Credits

CCIS2135	PowerShell and Bash Scripting	4
CCIS2150	Windows Admin 2	4
CCIS2270	Windows Admin 3	4
CCIS2841	Client/Server Computing	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 16

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS2150	Windows Admin 2	4

Total Credits 4

Second Semester

CCIS2270	Windows Admin 3	4

Total Credits 4

Third Semester

CCIS2135	PowerShell and Bash Scripting	4

Total Credits 4

Fourth Semester

CCIS2841	Client/Server Computing	4

Total Credits 4

Graduation (16 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2128 / EP 2129

IT Service Desk Technician (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The IT Service Desk Technician is responsible for taking calls, troubleshooting, tracking and resolving issues for customers. This person must be an excellent communicator and troubleshooter who can excel in a fast paced environment. This certificate is designed for the individual seeking a position in the computer service desk environment. Students gain the skills necessary to operate, configure, and troubleshoot including an awareness of issues surrounding computer security in today's highly technological world. Students are also introduced to the concepts and practices required of an entry-level technology professional in an effort to prepare them to become service providers.Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Understand changing role of IS Professionals.
Describe issues surrounding computer security.
Provide solutions using office suite.
Perform basic operating system functions.
Exhibit customer service skills.
Utilize office suite personal information manager.
Apply problem-solving methodologies.
Provide critical-thinking solution strategies.
Differentiate desktop vs. cloud apps.

Career Opportunities

Positions are available as an IT Service Desk Technician, IT System Specialist, and PC Technician.

Program Requirements

Technical Studies Required 23 Credits

CCIS1000	Information Systems	3
CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1095	Microsoft Office 365	2
CCIS1102	PC Operating Systems	3
CCIS2065	Help Desk/User Support	3
CCIS2675	A+ Hardware Support	3
CCIS2680	A+ Software Support	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 23

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

First Semester

CCIS1000	Information Systems	3
CCIS1095	Microsoft Office 365	2
CCIS2675	A+ Hardware Support	3
CCIS1102	PC Operating Systems	3

Total Credits 11

Second Semester

CCIS1005	Computer Security Awareness	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS2065	Help Desk/User Support	3
CCIS2680	A+ Software Support	3

Total Credits 12

Graduation (23 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/22/2020 : BP 2123 / EP 2124

Microsoft Office Applications (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed for the business professional who needs to become competent in business software most in demand at the personal computer level. This certificate provides in-depth technical computer skills needed in industry today. Students will use the Microsoft Office Suite of products that can be applied in business situations. Some courses can be taken online. A course completed while earning a certificate may also be applied to the Desktop Support or Executive Administrative Professional A.A.S. degrees or diplomas.

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Compare decision making solutions.
Construct relational databases with an efficient design.
Produce variety of business documents.
Create dynamic presentations.
Create variety of publications.
Demonstrate integration features of office suite.
Utilize office suite personal information manager.
Provide solutions using office suite.
Differentiate desktop vs. cloud apps.

Career Opportunities

This certificate is designed to improve the computer skills of office personnel.

Program Requirements

Technical Studies Required 20 Credits

ACCT1125	Excel	3
CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1095	Microsoft Office 365	2
CCIS1310	Microsoft Publisher	3
CCIS2090	Microsoft Office Integration	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 20

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Qualifying score on the computer literacy assessment test or CPLT1000 and CPLT1100 or CPLT1200.

First Semester

ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
CCIS1095	Microsoft Office 365	2

Total Credits 9

Second Semester

CCIS1032	Microsoft Access	3
CCIS1310	Microsoft Publisher	3
CCIS2090	Microsoft Office Integration	3

Total Credits 11

Graduation (20 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics. All students must pass the computer literacy assessment test before registering for these courses.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/20/2020: BP 2120 / EP 2175

Microsoft Office Generalist (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate provides students with Microsoft Office computer skills expected by most employers for an entry-level position in a general office setting. Communication styles in the workplace will also be addressed. Students may apply this certificate towards advanced certificates, diplomas or A.A.S. degrees in Workplace and Desktop careers. Courses for this certificate may be delivered in the classroom and/or online. Certificate qualifies for the Workforce Innovation and Opportunity Act (WIOA).

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Compare decision making solutions.
Produce variety of business documents.
Provide solutions using office suite.
Identify communication styles.

Career Opportunities

Information on careers, salary, and employment outlook is available on the Minnesota State Careerwise and Bureau of Labor Statistics websites: www.careerwise.minnstate.edu and www.bls.gov. Search suggestion: Receptionist

Program Requirements

Technical Studies Required 9 Credits

ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3

General Education Required 2 Credits

COMM1050	Communication in the Workplace	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 11

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Qualifying score on the computer literacy assessment test or CPLT1100 or CPLT1200 or METS1000.

First Semester

ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3
COMM1050	Communication in the Workplace	2

Total Credits 11

Graduation (11 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics.

Note: This certificate qualifies for the Workforce Innovation and Opportunity Act (WIOA).

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/20/2020 : BP 2176 / EP 2177

Microsoft Office Specialist (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate provides students with Microsoft Word, Excel, PowerPoint and Access computer skills expected by most employers in a variety of business and industry office settings. These courses create a pathway for the Microsoft Office Specialist (MOS) certification exams, as well as address communication styles in the workplace. Students may apply this certificate towards advanced certificates, diplomas or A.A.S. degrees in Workplace and Desktop careers. Courses for this certificate may be delivered in the classroom and/or online. Certificate qualifies for the Workforce Innovation and Opportunity Act (WIOA).

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics. All students must pass the Computer Literacy assessment test before registering for these courses.

Award Outcomes

Compare decision making solutions.
Construct relational databases with an efficient design.
Produce variety of business documents.
Create dynamic presentations.
Identify communication styles.

Career Opportunities

Information on careers, salary, and employment outlook is available on the Minnesota State Careerwise and Bureau of Labor Statistics websites: www.careerwise.minnstate.edu and www.bls.gov. Search suggestion: General Office Clerk

Program Requirements

Technical Studies Required 12 Credits

ACCT1125	Excel	3
CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3

General Education Required 2 Credits

COMM1050	Communication in the Workplace	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 14

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty program advisor.

Qualifying score on the computer literacy assessment test or CPLT1100 or CPLT1200 or METS1000.

First Semester

ACCT1125	Excel	3
CCIS1032	Microsoft Access	3
CCIS1035	Microsoft Word	3
CCIS1042	Microsoft PowerPoint	3
COMM1050	Communication in the Workplace	2

Total Credits 14

Graduation (14 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics.

Note: This certificate qualifies for the Workforce Innovation and Opportunity Act (WIOA).

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/20/2020 : BP 2178 / EP 2179

Organizational Assistant (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The organizational assistant is a valuable member of the office team who is responsible for a variety of activities that support the day-to-day office operations. Organizational assistants will use current software applications in preparing business documents. Basic accounting procedures and excellent interpersonal skills are essential.

Prerequisite Knowledge: Qualifying score on keyboarding assessment test or CPLT1000.

Award Outcomes

Record business transactions.
Compare decision making solutions.
Produce business documents.
Provide solutions using office suite.
Utilize office suite personal information manager.
Differentiate desktop vs. cloud apps.
Compose business documents.
Identify communication styles.
Utilize proofreading and editing skills.
Exhibit detail-oriented skills.

Career Opportunities

Positions are available in organizational support. Organizational support careers rank among the largest occupations in the U.S. economy. Salaries vary by skill, experience, and level of responsibility. Employment may be found with banks, insurance companies, health care facilities, government agencies, educational institutions, retail industries and various service and manufacturing businesses. Information on careers, salary, and employment outlook is available on the Minnesota State Careerwise and Bureau of Labor Statistics websites: www.careerwise.minnstate.edu and www.bls.gov.

Program Requirements

Technical Studies Required 20 Credits

ACCT1000	Introduction to Accounting	3
ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
CPLT1005	Advanced Keyboarding and Document Processing	3

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
	or	
COMM2050	Interpersonal Communication	3
ENGL1010	Business English	3
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 28

Semester Sequence

Completion of this award may require taking courses at both campuses. For more information, please contact your faculty

program advisor.

Qualifying score on keyboarding assessment test or CLPT1000.

All students must pass the computer literacy assessment test before registering for these courses.

First Semester

CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL1010	Business English	3
	Choose one of the following:	
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3

Total Credits 15

Second Semester

ACCT1000	Introduction to Accounting	3
ACCT1125	Excel	3
CCIS1090	Microsoft Office Productivity Apps 2	3
CCIS1095	Microsoft Office 365	2
	Choose one of the following:	
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3

Total Credits 13

Graduation (28 Credits)

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading ability, and proficiency in basic mathematics.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/28/2020 : BP 2121 / EP 2122

Emergency and Public Service

Emergency Medical Services

Community Paramedic Clinician (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Community Paramedic Clinician navigates and establishes systems to better serve the citizens of their communities. They help individuals and communities overcome barriers that prevent them from accessing and benefitting from health services. They serve as advocates, facilitators, liaisons, community brokers and resource coordinators. Community Paramedic Clinicians also trained as direct service providers which will ensure basic and advanced levels of care appropriate to prevention, emergencies, evaluation, triage, disease management, and basic oral and mental health.

Prerequisite: Currently certified as an Emergency Medical Technician (EMT-P) and have two (2) years of full-time service as an EMT-P, or its part-time equivalent.

Award Outcomes

Explain the scope of service for the role of the Community Paramedic (CP).
Differentiate between the role of the Community Paramedic, traditional community health care workers and the emergency medical personnel.
Demonstrate knowledge and skills required to perform clinical interventions.
Evaluate treatment and referral programs according to policies and protocols.
Evaluate the characteristics of health in the community.
Identify relevant health and welfare services.
Characterize the role of the CP as a liaison between patients, health and welfare service providers and community advocates.

Career Opportunities

Job opportunities are available in any organization that provides community health care, emergency medical services, and public health.

Program Requirements

Technical Studies Required 14 Credits

EMSV2001	Role Advocacy and Outreach	3
EMSV2005	Community Assessment	2
EMSV2011	Care and Prevention Development Strategies	4
EMSV2025	Care Coordination Practicum	1
EMSV2035	Core Concepts in Primary Care	1
EMSV2040	Needs Assessment Implementation Internship	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 14

Semester Sequence

First Semester

EMSV2001	Role Advocacy and Outreach	3
EMSV2011	Care and Prevention Development Strategies	4

Total Credits 7

Second Semester

EMSV2005	Community Assessment	2
EMSV2025	Care Coordination Practicum	1
EMSV2035	Core Concepts in Primary Care	1
EMSV2040	Needs Assessment Implementation Internship	3

Total Credits 7

Graduation (14 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 7210 / EP 7211

Community Paramedic Technician (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Community Paramedic Technician navigates and establishes systems to better serve the citizens of their communities. They help individuals and communities overcome barriers that prevent them from accessing and benefiting from health services. They serve as advocates, facilitators, liaisons, community brokers and resource coordinators. Community Paramedic Technicians also trained as direct service providers which will ensure basic and advanced levels of care appropriate to prevention, emergencies, evaluation, triage, disease management, and basic oral and mental health.

Prerequisite: Currently certified as a Paramedic without experience or an AEMT with two (2) years of full-time service as an AEMT, or its part-time equivalent.

Award Outcomes

Explain the scope of service for the role of the Community Paramedic Technician (CPT).
Differentiate between the role of the Community Paramedic Technician, traditional community health care workers and the emergency medical personnel.
Demonstrate knowledge and skills required to perform clinical interventions.
Evaluate treatment and referral programs according to policies and protocols.
Evaluate the characteristics of health in the community.
Identify relevant health and welfare services.
Characterize the role of the CP as a liaison between patients, health and welfare service providers and community advocates.

Career Opportunities

Job opportunities are available in any organization that provides community health care, emergency medical services, and public health.

Program Requirements

Technical Studies Required 11 Credits

EMSV2001	Role Advocacy and Outreach	3
EMSV2005	Community Assessment	2
EMSV2011	Care and Prevention Development Strategies	4
EMSV2025	Care Coordination Practicum	1
EMSV2035	Core Concepts in Primary Care	1

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 11

Semester Sequence

First Semester

EMSV2001	Role Advocacy and Outreach	3
EMSV2011	Care and Prevention Development Strategies	4

Total Credits 7

Second Semester

EMSV2005	Community Assessment	2
EMSV2025	Care Coordination Practicum	1

EMSV2035	Core Concepts in Primary Care	1

Total Credits 4

Graduation (11 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 7216 / EP 7215

Primary Care Technician (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Primary Care Technician (PCT) navigates and establishes systems to better serve the citizens of their communities. They help individuals and communities overcome barriers that prevent them from accessing and benefitting from health services. They serve as advocates, facilitators, liaisons, community brokers and resource coordinators. Primary Care Technicians are also trained as direct service providers which will ensure basic levels of care according to an established Plan of Care appropriate to prevention, emergencies, evaluation, and triage.

Award Outcomes

Explain the scope of service for the role of the Primary Care Technician.
Differentiate between the role of the Primary Care Technician, traditional community health care workers and the emergency medical personnel.
Demonstrate knowledge and skills required to assist the patient with the established Plan of Care.
Evaluate treatment and referral programs according to policies and protocols.
Evaluate the characteristics of health in the community.
Identify relevant health and welfare services.
Characterize the role of the PCT as a liaison between patients, health and welfare service providers and community advocates.

Career Opportunities

Job opportunities are available in any organization that provides community health care, emergency medical services, and public health.

Program Requirements

Technical Studies Required 13 Credits

EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1100	Emergency Medical Technician - Basic	6
EMSV2001	Role Advocacy and Outreach	3
EMSV2025	Care Coordination Practicum	1

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 13

Semester Sequence

First Semester

EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1100	Emergency Medical Technician - Basic	6

Total Credits 9

Second Semester

EMSV2001	Role Advocacy and Outreach	3
EMSV2025	Care Coordination Practicum	1

Total Credits 4

Graduation (13 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020 : BP 7218 / EP 7217

Emergency Medical Services Specialist (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The EMS Certificate provides enhanced entry-level job training for employment in a Basic Life Support (BLS) ambulance service and the EMS ride-along experience requirements for persons interested in entering a paramedic program. Included in the program is an 80 hour ride-along clinical with Metro Ambulance Services. Areas covered are special transportation training, an ambulance service operations and run simulation course, behind-the-wheel emergency driving course, proper lifting techniques plus interpersonal communication skills that paramedic schools and employers are seeking. Cleared criminal background check and completed TB skin test required.

Award Outcomes

Demonstrate his/her role and responsibilities as a member of the emergency medical team.
Apply emergency medical safety principles in the work place.
Apply critical thinking skills in care management.
Assess patient for traumatic injuries.
Assess patient for medical illnesses.
Demonstrate clear oral communications.
Exhibit personal, professional and academic ethics.
Apply quality improvement concepts.
Classify patient conditions for treatments needed.
Demonstrate effective treatment skills.
Demonstrate safe transport of patients.
Demonstrate skills for the National Registry of EMT's.

Career Opportunities

The EMS Certificate prepare and enhances a person`s job opportunities for work as an EMT in a BLS medical transportation service or in a ALS service that combines EMT`s and paramedics. The certificate meets several prerequisites in course work and the ride-along ambulance experience required for entry into paramedic programs.

Program Requirements

Technical Studies Required 25 Credits

EMSV1000	Introduction to EMS Systems	1
EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1070	Pediatric Education for Prehospital Providers	1
EMSV1100	Emergency Medical Technician - Basic	6
EMSV1105	Ambulance Operations	2
EMSV1110	Lifting Techniques for Health Professionals	1
EMSV1115	Passenger Assistant Technician	1
EMSV1120	Ambulance Clinical	2
EMSV1136	Understanding EKGs	2
EMSV1146	Medical Terminology for EMS/ER Personnel	3
EMSV1190	Intravenous (IV) Access	1
EMSV1195	International Trauma Life Support (ITLS)	1
EMSV1225	Advanced Cardiac Life Support (ACLS) for EMT	1

General Education Required 3 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 28

Semester Sequence

First Semester

EMSV1000	Introduction to EMS Systems	1
EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1146	Medical Terminology for EMS/ER Personnel	3
COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3

Total Credits 10

Second Semester

EMSV1100	Emergency Medical Technician - Basic	6
EMSV1110	Lifting Techniques for Health Professionals	1
EMSV1115	Passenger Assistant Technician	1
EMSV1190	Intravenous (IV) Access	1

Total Credits 9

Third Semester

EMSV1070	Pediatric Education for Prehospital Providers Fall BPC or Spring EPC	1
EMSV1105	Ambulance Operations Fall EPC or Spring BPC	2
EMSV1120	Ambulance Clinical	2
EMSV1136	Understanding EKGs	2
EMSV1195	International Trauma Life Support (ITLS) Fall EPC or Spring BPC	1
EMSV1225	Advanced Cardiac Life Support (ACLS) for EMT Fall EPC or Spring BPC	1

Total Credits 9

Graduation (28 Credits)

Students must clear a criminal background study during the 1st Semester. Students must complete a mantoux TB skin test during the 1st Semester.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/2/2020: BP 7208 / EP 7206

Emergency Medical Technician (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Emergency Medical Technician (EMT) Certificate provides entry-level job training for employment in a Basic Life Support (BLS) ambulance service or satisfies Fire and Police Department requirement for training at the Emergency Medical Technician (EMT) level. Included in the program is the opportunity for 10 patient contacts as required by the Minnesota EMS Regulatory Board. Areas covered include those identified in the National Emergency Medical Services Education Standards for Emergency Medical Responder and EMT. Cleared criminal background check and completed Mantoux skin test required for clinical training.

Award Outcomes

Demonstrate his/her role and responsibilities as a member of the emergency medical team.
Apply emergency medical safety principles in the work place.
Apply critical thinking skills in care management.
Assess patient for traumatic injuries.
Assess patient for medical illnesses.
Demonstrate clear oral communications.
Exhibit personal, professional and academic ethics.
Apply quality improvement concepts.
Classify patient conditions for treatments needed.
Demonstrate effective treatment skills.
Demonstrate safe transport of patients.
Demonstrate skills for the National Registry of EMT's.

Career Opportunities

The EMT Certificate prepares students for job opportunities as an EMT in a BLS medical transportation service or in an Advanced Life Support ambulance service that combines EMT`s and paramedics. Many Fire and Police Departments require EMT certification as a job requirement. EMT's are also currently being hired as Emergency Room Technicians in hospitals across Minnesota and the US. The certificate meets prerequisites in course work for the EMS and ER Tech Certificates.

Program Requirements

Technical Studies Required 9 Credits

EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1100	Emergency Medical Technician - Basic	6

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 9

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Emergency Room Technician (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Emergency Room Technician (ER Tech) Certification prepares you to be part of the health care team in an Emergency Department (ED) or Urgent Care setting. This certificate will enhances your job opportunities because of the knowledge and skills acquired in the classroom plus the supervised clinical in a metro hospital Emergency Department. Some of the courses and skills taught are EMT, administering a 12-lead EKG test, venipuncture techniques (blood drawing), splinting and casting, urinary catheterization, wound cleaning, IV set-up and proper lifting techniques. Cleared criminal background check and completed TB skin test required.

Award Outcomes

Demonstrate his/her role and responsibilities as a member of the emergency medical team.
Apply emergency medical safety principles in the work place.
Apply critical thinking skills in care management.
Assess patient for traumatic injuries.
Assess patient for medical illnesses.
Demonstrate clear oral communications.
Exhibit personal, professional and academic ethics.
Apply quality improvement concepts.
Classify patient conditions for treatments needed.
Demonstrate effective treatment skills.
Demonstrate safe transport of patients.
Demonstrate skills for the National Registry of EMT's.

Career Opportunities

The new ER Tech Certification provides a standard that Hospital ED`s and Urgent Care Centers and clinics are seeking in this entry-level position for a health care career. This training and work experience will expose you and prepare you for other health care careers in hospitals and clinics.

Program Requirements

Technical Studies Required 21 Credits

EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1100	Emergency Medical Technician - Basic	6
EMSV1110	Lifting Techniques for Health Professionals	1
EMSV1136	Understanding EKGs	2
EMSV1146	Medical Terminology for EMS/ER Personnel	3
EMSV1155	Phlebotomy Techniques	3
EMSV1170	ER Procedures and Clinical	3

General Education Required 3 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 24

Semester Sequence

First Semester

EMSV1050	Emergency Medical Responder (First Responder)	3
EMSV1146	Medical Terminology for EMS/ER Personnel	3

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3

Total Credits 9

Second Semester

EMSV1100	Emergency Medical Technician - Basic Students must be 18 years of age before registering for EMSV1100	6
EMSV1155	Phlebotomy Techniques	3

Total Credits 9

Third Semester

EMSV1110	Lifting Techniques for Health Professionals	1
EMSV1136	Understanding EKGs	2
EMSV1170	ER Procedures and Clinical Offered Spring Only at BPC and EPC	3

Total Credits 6

Graduation (24 Credits)

Students must clear a criminal background study during the 1st Semester.

Students must complete a mantoux TB skin test during the 1st Semester.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

1/24/2020 : BP 7212 / EP 7207

Environmental Health and Safety

Hazardous Materials Technology (EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed to develop basic applied skills required for management of hazardous materials and wastes in the industrial environment. This program is designed to develop minimum entry-level skills and knowledge for individuals working with these materials.

Award Outcomes

Select safe work practices.
Recognize compliance with relevant regulations.
Compare technical and procedural information.
Categorize chemical/physical properties.
Resolve unanticipated or changing conditions.
Resolve hazardous materials release.
Utilize response principles.
Select personal protective equipment.

Career Opportunities

Hazardous Materials Technology graduates find employment in the areas of emergency response and hazardous materials/waste management.

Program Requirements

Technical Studies Required 10 Credits

ENHS1020	Hazard Recognition and Control	3
ENHS1110	Chemistry of Hazardous Materials	3
ENHS1120	Hazardous Materials Management and Handling	1
ENHS1130	Personal Protective Equipment	2
ENHS1140	Incident Management for Business and Industry	1

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 10

Semester Sequence

First Semester

ENHS1020	Hazard Recognition and Control	3
ENHS1120	Hazardous Materials Management and Handling	1
ENHS1140	Incident Management for Business and Industry	1

Total Credits 5

Second Semester

ENHS1110	Chemistry of Hazardous Materials	3
ENHS1130	Personal Protective Equipment	2

Total Credits 5

Graduation (10 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is

subject to change without notice.

4/14/2020 : BP / EP 7905

Safety Coordinator (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

Safety Coordinators are a key position with great responsibility within many organizations. Safety Coordinators can save companies tens of thousands of dollars while protecting their most important asset, their employees. Safety Coordinators are responsible for the health and safety of employees, which includes organizational safety policies, procedures, practices and administrative controls for safety. Safety Coordinators are responsible for employee training and compliance in such areas as hazard recognition and control, industrial hygiene, fire protection, accident investigations, regulatory inspections, and laws, regulations, and standards.

Award Outcomes

Select safe work practices.
Recognize compliance with relevant regulations.
Compare technical and procedural information.
Categorize chemical/physical properties.
Resolve unanticipated or changing conditions.
Manage hazardous materials release.
Utilize response principles.
Select personal protective equipment.
Recognize compliance with relevant regulations.

Career Opportunities

This program will prepare individuals to understand, implement, and lead organizations in the area of Occupational compliance. There is a wide range of employment as well as advancement opportunities for the individual who seeks a career in becoming a Safety Coordinator. Graduates of this program will be able to advance or enter a career path in the safety fields.

Program Requirements

Technical Studies Required 30 Credits

ENHS1005	Introduction to Industrial Processes	3
ENHS1010	Introduction to Safety and Health	3
ENHS1015	Fire Protection	3
ENHS1020	Hazard Recognition and Control	3
ENHS1025	Industrial Hygiene	3
ENHS1030	Ergonomics	3
ENHS1035	Safety and Health Program Management	3
ENHS1040	Safety Laws, Regulations, and Standards	3
ENHS1045	Modern Theories of Safety Programming	3
ENHS1050	Internship	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

First Semester

ENHS1005	Introduction to Industrial Processes	3
ENHS1020	Hazard Recognition and Control	3
ENHS1025	Industrial Hygiene	3
ENHS1040	Safety Laws, Regulations, and Standards	3

Total Credits 12

Second Semester

ENHS1010	Introduction to Safety and Health	3
ENHS1045	Modern Theories of Safety Programming	3
ENHS1050	Internship	3

Total Credits 9

Summer Semester

ENHS1015	Fire Protection	3
ENHS1030	Ergonomics	3
ENHS1035	Safety and Health Program Management	3

Total Credits 9

Graduation (30 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/14/2020 : BP 7906 / EP 7907

Fire Protection

Fire Science Technology (EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The A.A.S. degree in Fire Science Technology prepares students to perform the duties of a line officer. As students progress, they will also complete the requirements for two certificates; Fire Suppression Technician and Company Officer. Students typically complete the Fire Suppression Technician certificate first which qualifies them for a lead firefighter position with most fire departments. As students gain experience and continue their education they will earn a Company Officer certificate. The course work also prepares students to take promotional exams.

Student must be 18 years of age or meet the requirements for eligibility under Hennepin Technical College's Post-Secondary Enrollment Options (PSEO) standards.

Award Outcomes

Analyze principles of fire control.
Utilize personnel, equipment and extinguishing agents on the fire ground.
Demonstrate an understanding of the principle of fire development.
Apply knowledge of hydraulic principles for water supply.
Identify principles for leadership.
Utilize knowledge of building construction principles, fire protection systems and fire prevention codes to affect a safe community.
Identify hazardous materials and properties.
Outline effective emergency scene operations.
Apply information management concepts to fire protection administration.
Utilize effective written communication.
Demonstrate effective incident management practices.

Career Opportunities

Fire Science graduates may perform a variety of jobs in the fire protection family. Titles may include Firefighter, Driver Operator, Inspector or Fire Investigator. Higher level positions, requiring experience and exams, are Fire Marshal, Lieutenant, Captain, District Chief, Deputy Chief, Assistant Chief and Chief of Department.

Program Requirements

Technical Studies Required 40 Credits

FRPT1060	Fire Department Occupational Health and Safety	2
FRPT1100	Fire Fighter I	5
FRPT1105	Fire Fighter II	2
FRPT1110	Fire Instructor I	2
FRPT1120	Fire Officer I	2
FRPT1125	Fire Investigation I	2
FRPT1130	Fire Inspector I	2
FPRT1136	Principles of Emergency Services	2
FRPT1155	Fire Protection Systems	2
FRPT1161	Building Construction for the Fire Service	3
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2

FRPT2110	Strategy and Tactics	2
FRPT2115	Fire Officer II	2
EMSV1050	Emergency Medical Responder (First Responder)	3
CCDS1020	Interviewing Skills	1
CPLT1100	Computer Essentials	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	or	
	Choose 1 course from MnTC Goal Area 2	3
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
	Choose 1 course from MnTC Goal Area 5	3

General Education Elective 0 Credits

Technical Studies Elective 5 Credits

	Recommended:	
EMSV1100	Emergency Medical Technician - Basic	6
FRPT1240	Emergency Response Operations	1
FRPT2105	Fire Instructor II	2
FRPT2120	Fire Investigation II	2
FRPT2125	Fire Inspector II	2
FRPT2130	Fire Officer III	2
FRPT2140	Personnel Management for Fire Department Services	3

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

FRPT1060	Fire Department Occupational Health and Safety	2
FRPT1100	Fire Fighter I	5
FPRT1136	Principles of Emergency Services	2
FRPT1161	Building Construction for the Fire Service	3
CPLT1100	Computer Essentials	3

Total Credits 15

Second Semester

EMSV1050	Emergency Medical Responder (First Responder)	3
FRPT1105	Fire Fighter II	2
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2
FRPT2110	Strategy and Tactics	2
COMM2130	Public Speaking	3

Total Credits 15

Third Semester

FRPT1110	Fire Instructor I	2
FRPT1120	Fire Officer I	2
FRPT1130	Fire Inspector I	2
FRPT1155	Fire Protection Systems	2
PHIL2100	Critical Thinking for College Success	3
	or	
	Choose 1 course from MnTC Goal Area 2	3
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
	Choose 1 course from MnTC Goal Area 5	3

Total Credits 17

Fourth Semester

FRPT1125	Fire Investigation I	2
FRPT2115	Fire Officer II	2
	Technical Studies Electives	5
CCDS1020	Interviewing Skills	1
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 13

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Technical Studies Electives

	Recommended:	
FRPT1240	Emergency Response Operations	1
FRPT2105	Fire Instructor II	2
FRPT2120	Fire Investigation II	2
FRPT2125	Fire Inspector II	2
FRPT2130	Fire Officer III	2
FRPT2140	Personnel Management for Fire Department Services	3
EMSV1100	Emergency Medical Technician - Basic	6

Choose a Total of: 5 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/16/2020 : BP / EP 7410

Fire Protection Technician (EP) Diploma

Overview and Award Outcomes

Overview

The Fire Protection Technician diploma is designed to provide students with the skills necessary to progress in the fire service field. Fire suppression techniques and company officer training will be covered.

Student must be 18 years of age or meet the requirements for eligibility under Hennepin Technical College's Post-Secondary Enrollment Options (PSEO) standards.

Award Outcomes

Demonstrate full-range of fire fighter skills.
Operate fire apparatus.
Exhibit basic supervisory skills.
Identify how fire affects construction systems of buildings.
Demonstrate effective oral and written communication.

Career Opportunities

Students who complete this diploma will have the knowledge and skills necessary to serve as a lead firefighter, apparatus operator and line officer.

Program Requirements

Technical Studies Required 32 Credits

FRPT1060	Fire Department Occupational Health and Safety	2
FRPT1100	Fire Fighter I	5
FRPT1105	Fire Fighter II	2
FRPT1110	Fire Instructor I	2
FRPT1120	Fire Officer I	2
FRPT1130	Fire Inspector I	2
FPRT1136	Principles of Emergency Services	2
FRPT1155	Fire Protection Systems	2
FRPT1161	Building Construction for the Fire Service	3
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2
FRPT2110	Strategy and Tactics	2
EMSV1050	Emergency Medical Responder (First Responder)	3

General Education Required 8 Credits

CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
CPLT1100	Computer Essentials	3

General Education Elective 0 Credits

Technical Studies Elective 8 Credits

	Recommended:	
EMSV1100	Emergency Medical Technician - Basic	6
FRPT1240	Emergency Response Operations	1
FRPT2105	Fire Instructor II	2
FRPT2120	Fire Investigation II	2
FRPT2125	Fire Inspector II	2
FRPT2130	Fire Officer III	2

FRPT2140	Personnel Management for Fire Department Services	3

Total Diploma Credits 48

Semester Sequence

Offered at Eden Prairie Only

First Semester

FRPT1060	Fire Department Occupational Health and Safety	2
FRPT1100	Fire Fighter I	5
FPRT1136	Principles of Emergency Services	2
FRPT1161	Building Construction for the Fire Service	3
CPLT1100	Computer Essentials	3

Total Credits 15

Second Semester

Total Credits 16

EMSV1050	Emergency Medical Responder (First Responder)	3
FRPT1105	Fire Fighter II	2
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2
FRPT2110	Strategy and Tactics	2
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	2

Third Semester

Total Credits 17

FRPT1110	Fire Instructor I	2
FRPT1120	Fire Officer I	2
FRPT1130	Fire Inspector I	2
FRPT1155	Fire Protection Systems	2
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
	Technical Studies Electives	6

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3

CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 2 Credits

Technical Studies Electives

	Recommended:	
FRPT1240	Emergency Response Operations	1
FRPT2105	Fire Instructor II	2
FRPT2120	Fire Investigation II	2
FRPT2125	Fire Inspector II	2
FRPT2130	Fire Officer III	2
FRPT2140	Personnel Management for Fire Department Services	3
EMSV1100	Emergency Medical Technician - Basic	6

Choose a Total of: 8 Credits

Graduation (48 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/16/2020 : BP / EP 7411

Fire Suppression Technician (EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Fire Suppression Technician certificate will prepare the student to perform lead firefighter and apparatus operator functions. Students learn firefighter techniques, company functions, hazardous materials functions and emergency medical procedures. Team work is emphasized throughout the program.

Student must be 18 years of age or meet the requirements for eligibility under Hennepin Technical College's Post-Secondary Enrollment Options (PSEO) standards.

Award Outcomes

Demonstrate full-range of fire fighter skills.
Perform the duties of an emergency medical responder.
Operate fire apparatus.
Demonstrate tactical firefighting skills.
Perform effective response to hazardous materials.

Career Opportunities

This certificate completes the job entry requirements as a firefighter for most fire departments.

Program Requirements

Technical Studies Required 15 Credits

EMSV1050	Emergency Medical Responder (First Responder)	3
FRPT1100	Fire Fighter I	5
FRPT1105	Fire Fighter II	2
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2

General Education Required 1 Credit

CCDS1020	Interviewing Skills	1

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

First Semester

EMSV1050	Emergency Medical Responder (First Responder)	3
FRPT1100	Fire Fighter I	5

Total Credits 8

Second Semester

FRPT1105	Fire Fighter II	2
FRPT1165	Apparatus Operator	3
FRPT1176	Hazardous Materials First Responder Operational	2
CCDS1020	Interviewing Skills	1

Total Credits 8

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice. This listing is to be used strictly as an advising tool.

4/16/2020 : BP / EP 7412

NFPA 1001 Firefighting (EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide the student with the required entry level skills to become employed as a firefighter. The courses meet the National Fire Protection Associations standard 1001 for entry level firefighter. Completion of this certificate will make the student eligible to take the Minnesota Fire Service Certification Board exams for certification at the Firefighter 1 and 2 certification levels.

Award Outcomes

Demonstrate firefighting skills.
Perform basic hazardous materials skills.
Demonstrate tactical firefighting skills.

Career Opportunities

The student will have the required knowledge and skills to be employed as an entry level firefighter with career and paid on call fire departments throughout Minnesota and on a national level.

Program Requirements

Technical Studies Required 9 Credits

FRPT1100	Fire Fighter I	5
FRPT1105	Fire Fighter II	2
FRPT1176	Hazardous Materials First Responder Operational	2

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 9

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Law Enforcement

Law Enforcement (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The law enforcement training program at Hennepin Technical College is accredited by the Minnesota Peace Officer Standards and Training Board (POST). The Law Enforcement certificate program is designed to prepare students to become professional law enforcement officers who have the ability to think clearly, apply communication and human behavior principles, and effectively use hands on skills as the situation requires. This certificate program provides the final skills component of the law enforcement curriculum mandated by the POST Board.

Award Outcomes

Identify the skills required to perform the duties of a police officer.
Utilize command presence and officer safety techniques.
Apply tactics to control subjects in field encounter situations.
Justify lawful use of force with applicable MN state statutes, Federal Case law and established Use of Force continuum.
Demonstrate proficiency with hand guns and long guns.
Employ tactics and procedures to detain and control suspects.
Demonstrate concepts and techniques to conduct vehicle contacts.
Demonstrate emergency vehicle operations.
Identify federal and state statutes pertaining to the duties and responsibilities of a police officer.
Distinguish among diverse groups which make up MN communities.
Assess methods to meet the needs of domestic needs victims.
Express core ethical principles.
Compose police reports.
Describe crime scene techniques.
Demonstrate officer interactions with crime victims.
Articulate different approaches to persons and situations involving crisis.
Identify the importance of Blood Borne Pathogens, Hazmat, and Fire investigations as applied to law enforcement.

Career Opportunities

Upon successful completion of the program the student will be eligible to take the Minnesota State Peace Officer License Examination. Completion of this Examination is required in order to obtain entry law enforcement positions with state, county, or local agencies.

Program Requirements

Technical Studies Required 22 Credits

LAWE2225	Criminal Investigation	3
LAWE2230	Legal Issues for Law Enforcement	3
LAWE2231	MN Criminal and Traffic Codes	3
LAWE2235	Police Report Writing/Interview	2
LAWE2241	Police Response and Human Behavior	3
LAWE2261	In Progress Response	2
LAWE2275	Traffic	1
LAWE2280	Defensive Tactics	2
LAWE2285	Crime Scene and Evidence	1
LAWE2290	Firearms	2
LAWE2300	Tactical Driving for Law Enforcement Students	0

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 22

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Health

Dental Assistant

Dental Assistant (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Dental Assistant is an important member of a professional health team. As a Dental Assistant, the student will perform many chairside procedures, assist the dentist during patient treatment and complete records. The assistant must also be competent in the knowledge and skill required for business office and laboratory procedures. Upon completion of this program, the dental assistant graduate will be eligible to take the Minnesota State Board of Dentistry's Licensure Exam and the Dental Assisting National board exams. Passing this exam allows a dental assistant to perform the expanded functions on patients.

Personal qualities considered essential for this occupation are the ability to work well with others, the desire to be a part of a professional team, manual dexterity, good communication skills, ability to follow direct supervision and to be sensitive to others` needs.

The Dental Assistant program at Hennepin Technical College is approved by the Minnesota Board of Dentistry, www.dentalboard.state.mn.us.

The program in Dental Assisting is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of Approval without Reporting Requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: http://www.ada.org/en/coda.

The A.A.S. degree plan is designed for students who are interested in continuing their educational career.

Information is available thru the HTC web site and dental assistant program counselors which state the risks of entering this profession in regards to bloodborne pathogens and disease transmission, including needlesticks.

Prerequisite: Pre-Dental Health Requirements (Mantoux test and Hepatitis B vaccine) CPLT1100, COMM2050 or COMM2060, DNTL1121, ENGL2050 or ENGL2121, EMSV1020 or currently certified in CPR for the Healthcare Provider.

Award Outcomes

Demonstrate an understanding of dental sciences.
Facilitate effective communication with patients and dental team members.
Perform clinical, laboratory and administrative procedures in various dental environments.
Apply current concepts of infection control and occupational safety.
Demonstrate the legal and ethical Minnesota Board of Dentistry statutes.
Exhibit organizational skills.

Career Opportunities

Dental Assistants are employed in private and group practices, government public health clinics, dental sales, insurance companies, educational facilities, and the armed forces.

Program Requirements

Technical Studies Required 42 Credits

DNTL1000	Dental Team/Practice Management	2
DNTL1121	Dental Science	4
DNTL1140	Dental Materials	3
DNTL1160	Preclinical Chairside Assisting	3
DNTL1180	Chairside Assisting I	4
DNTL1200	Dental Health	2
DNTL1220	Chairside Assisting II	4
DNTL1241	Dental Radiology	4
DNTL1261	Expanded Functions	7
DNTL1305	Externship Seminar	1
DNTL1321	Clinical Externship I	4
DNTL1325	Clinical Externship II	4

General Education Required 10 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3

ENGL2050	Short Form Composition and Reporting	4
	or	
ENGL2121	Writing and Research	4
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4

General Education Elective 8 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Pre-Dental Assistant Requirements

All Pre-Dental courses must be completed with a grade of "C" or better.

	Score of 70% on Computer Literacy Basic Test	
	or	
CPLT1100	Computer Essentials	3
EMSV1020	CPR/First Aid	1
	or	
	Current CPR for Health Care Provider or Professional Rescuer	
COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
DNTL1121	Dental Science	4
	(may be repeated only once)	
ENGL2050	Short Form Composition and Reporting	4
	or	
ENGL2121	Writing and Research	4

Total Credits 11

Students are required to complete the following prior to program application:

* Hepatitis B Vaccination (2 vaccinations of a series of 3 must be completed)

* Tetanus vaccination (TDAP) (within last 10 yrs)

* High School Diploma or GED Required

REQUIRED within two weeks after beginning the program:

*Mantoux (PPD Test)

* Background study through the MN Department of Human Services 651-431-2000. Contact DHS with questions.

First Semester

DNTL1000	Dental Team/Practice Management	2
DNTL1140	Dental Materials	3
DNTL1160	Preclinical Chairside Assisting	3
DNTL1180	Chairside Assisting I	4
DNTL1241	Dental Radiology	4

Total Credits 16

Second Semester

DNTL1200	Dental Health	2
DNTL1220	Chairside Assisting II	4

DNTL1261	Expanded Functions	7

Total Credits 13

Summer Semester

DNTL1305	Externship Seminar	1
DNTL1321	Clinical Externship I	4
DNTL1325	Clinical Externship II	4

Total Credits 9

Additional Required General Education Courses

PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
	General Education Electives	8

Total Credits 11

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guideline of the Minnesota Transfer Curriculum (MnTC).

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Total Credits 8

General Information

• The Dental Assistant program at Hennepin Technical College is approved by the Minnesota Board of Dentistry, www.dentalboard.state.mn.us.

• The program in Dental Assisting is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of Approval without Reporting Requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: http://www.ada.org/en/coda.

• All Dental Assistant students must earn a C or better in all DNTL (Dental Assistant) courses to continue in the Dental program. In the event that a student earns a D, F or W grade in a DNTL course, the student may repeat that course only one time the next semester that the course is offered.

• Current certification in CPR is mandatory throughout the entire program, including externship. Proof of current CPR certification is also required in order to take the Dental Assistant National Board (DANB) examination.

• Students who have earned their Dental Assisting diploma or degree are eligible to take the Dental Assistant National Board (DANB) and the Minnesota State Licensure Exam. Successful completion of the Minnesota State Licensure Exam allows the individual to practice as a Licensed Dental Assistant (LDA).

• A written notification is required from a physician/obstetrician for a pregnant student to continue enrollment in DNTL1241 Dental Radiology, DNTL1261 Expanded Functions, DNTL1321 Clinical Externship I, and DNTL1325 Clinical Externship II.

• Information is available on the HTC website and from the Enrollment Advisors, HTC Counselors, and the dental assistant program faculty which state the risks of entering this profession in regard to bloodborne pathogens and disease transmission, including needlesticks.

Criminal Background Studies

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Additional Program Costs

Books - $450
Program Kit (Typondonts) - $700
Scrub uniforms, lab coat, white shoes - $125
Membership in ADAA and Liability Insurance - $45
Student name tag - $10
MN Jurisprudence Exam - $60
MN Licensure Exam (DASLE) - $70
Board of Dentistry Application - $123
Dental Assistant National Board (DANB) - $450
Approx. Total for Additional Program Costs - $2,033

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 7608 / EP 7609

Dental Assistant (BP/EP) Diploma

Overview and Award Outcomes

Overview

The Dental Assistant is an important member of a professional health team. As a Dental Assistant, the student will perform many chairside procedures, assist the dentist during patient treatment and complete records. The assistant must also be competent in the knowledge and skill required for business office and laboratory procedures. Upon completion of this program, the dental assistant graduate will be eligible to take the Minnesota State Board of Dentistry's Licensure Exam and the Dental Assisting National Board exam. Passing these exams will allow a dental assistant to perform the MN expanded functions on patients.

Personal qualities considered essential for this occupation are the ability to work well with others, the desire to be a part of a professional team, manual dexterity, good communication skills, ability to follow direct supervision and to be sensitive to others` needs.

The Dental Assistant program at Hennepin Technical College is approved by the Minnesota Board of Dentistry, www.dentalboard.state.mn.us.

The program in Dental Assisting is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of Approval without Reporting Requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: http://www.ada.org/en/coda.

Information is available thru the HTC web site and dental assistant program counselors which state the risks of entering this profession in regards to bloodborne pathogens and disease transmission, including needlesticks.

Prerequisite: Pre-Dental Health Requirements (Mantoux test and Hepatitis B vaccine) CPLT1100, COMM2050 or COMM2060, DNTL1121, ENGL2050 or ENGL2121, EMSV1020 or currently certified in CPR for the Healthcare Provider.

Award Outcomes

Demonstrate an understanding of dental sciences.
Facilitate effective communication with patients and dental team members.
Perform clinical, laboratory and administrative procedures in various dental environments.
Apply current concepts of infection control and occupational safety.
Demonstrate the legal and ethical Minnesota Board of Dentistry statutes.

Career Opportunities

Dental Assistants are employed in private and group practices, government public health clinics, dental sales, insurance companies, educational facilities, and the armed forces.

Program Requirements

Technical Studies Required 42 Credits

DNTL1000	Dental Team/Practice Management	2
DNTL1121	Dental Science	4
DNTL1140	Dental Materials	3
DNTL1160	Preclinical Chairside Assisting	3
DNTL1180	Chairside Assisting I	4
DNTL1200	Dental Health	2
DNTL1220	Chairside Assisting II	4
DNTL1241	Dental Radiology	4
DNTL1261	Expanded Functions	7
DNTL1305	Externship Seminar	1
DNTL1321	Clinical Externship I	4
DNTL1325	Clinical Externship II	4

General Education Required 7 Credits

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
ENGL2050	Short Form Composition and Reporting	4
	or	

ENGL2121	Writing and Research	4

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 49

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Pre-Dental Assistant Requirements

All Pre-Dental courses must be completed with a grade of "C" or better.

	Score of 70% on Computer Literacy Basic Test or	
CPLT1100	Computer Essentials	3
EMSV1020	CPR/First Aid or Current CPR for Health Care Provider or Professional Rescuer	1
COMM2050	Interpersonal Communication or	3
COMM2060	Small Group Communication	3
DNTL1121	Dental Science (may be repeated only once)	4
ENGL2050	Short Form Composition and Reporting or	4
ENGL2121	Writing and Research	4

Total Credits 11

Students are required to complete the following prior to program application:
* Hepatitis B Vaccination (2 vaccinations of a series of 3 must be completed)
* Tetanus vaccination (TDAP) (within last 10 yrs)
* High School Diploma or GED Required

REQUIRED within two weeks after beginning the program:
* Mantoux (PPD Test)
* Background study through the MN Department of Human Services, 651-431-2000. Contact DHS with questions.

First Semester

DNTL1000	Dental Team/Practice Management	2
DNTL1140	Dental Materials	3
DNTL1160	Preclinical Chairside Assisting	3
DNTL1180	Chairside Assisting I	4
DNTL1241	Dental Radiology	4

Total Credits 16

Second Semester

DNTL1200	Dental Health	2
DNTL1220	Chairside Assisting II	4
DNTL1261	Expanded Functions	7

Total Credits 13

Summer Semester

DNTL1305	Externship Seminar	1
DNTL1321	Clinical Externship I	4
DNTL1325	Clinical Externship II	4

Total Credits 9

General Information

• The Dental Assistant program at Hennepin Technical College is approved by the Minnesota Board of Dentistry, www.dentalboard.state.mn.us.

• The program in Dental Assisting is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of Approval without Reporting Requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: http://www.ada.org/en/coda.

• All Dental Assistant students must earn a C or better in all DNTL (Dental Assistant) courses to continue in the Dental program. In the event that a student earns a D, F or W grade in a DNTL course, the student may repeat that course only one time the next semester that the course is offered.

• Current certification in CPR is mandatory throughout the entire program, including externship. Proof of current CPR certification is also required in order to take the Dental Assistant National Board (DANB) examination.

• Students who have earned their Dental Assisting diploma or degree are eligible to take the Dental Assistant National Board (DANB) and the Minnesota State Licensure Exam. Successful completion of the Minnesota State Licensure Exam allows the individual to practice as a Licensed Dental Assistant (LDA).

• A written notification is required from a physician/obstetrician for a pregnant student to continue enrollment in DNTL1241 Dental Radiology, DNTL1261 Expanded Functions, DNTL1321 Clinical Externship I, and DNTL1325 Clinical Externship II.

• Information is available on the HTC website and from the Enrollment Advisors, HTC Counselors, and the dental assistant program faculty which state the risks of entering this profession in regard to bloodborne pathogens and disease transmission, including needlesticks.

Criminal Background Studies

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Additional Program Costs

Books - $450
Program Kit (Typondonts) - $700
Scrub uniforms, lab coat, white shoes - $125
Membership in ADAA and Liability Insurance - $45
Student name tag - $10
MN Jurisprudence Exam - $60
MN Licensure Exam (DASLE) - $70
Board of Dentistry Application - $123
Dental Assistant National Board (DANB) - $450
Approx. Total for Additional Program Costs - $2,033

Graduation (49 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 7610 / EP 7611

Health Science (Broad Field)

Health Science (Broad Field) (BP/EP) Associate of Science

Overview and Award Outcomes

Overview

This AS degree provides students a broad base of general education coursework relevant to the field of health sciences. Students who have chosen a career path or have not yet decided upon a specific course of study may elect to complete the foundational coursework in the health sciences coupled with a range of general education courses. The degree is designed to transfer to all MnSCU system universities offering related baccalaureate programs through a statewide articulation agreement. Students are encouraged to consult with both Hennepin Technical College and transfer university counselors/advisors early and often, for guidance and planning regarding the requirements of the various health sciences baccalaureate programs to facilitate the most efficient transition and transfer.

Award Outcomes

Develop as writers and speakers who use the English language effectively and who read, write, speak and listen critically.
Apply mathematical, scientific and logical modes of thinking.
Develop the ability to use technology to improve and facilitate their learning.
Explain processes of humans and other biological systems.
Demonstrate safe, environmentally responsible procedures in varied situations.
Expand their ability to identify, discuss and reflect upon social, ethical and behavioral issues.
Extend their awareness of cultural, global and environmental topics.

Career Opportunities

Obtaining a Health Science Broad Field degree at HTC opens the door to transfer opportunities in your program of study and others as well: Allied Health Biology; Athletic Training; Cardiopulmonary Rehabilitation; Communication Disorders; Community Health; Corrections; Dietetics; Exercise Science; Foods and Nutrition; Health Education; Health, Exercise and Rehabilitative Services; Health Promotion; Health Science; Movement Sciences; Nursing (limited seats available on a competitive basis); Psychology; Social Work; and Therapeutic Recreation.

Program Requirements

Technical Studies Required 0 Credits

General Education Required 55 Credits

Science Core Courses

BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
	or	
CHEM2201	General, Organic, and Biological Chemistry Foundations	4

General Education Core Courses

COMM2020	Intercultural Communication	3
	or	
COMM2050	Interpersonal Communication	3
ENGL2121	Writing and Research	4
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
PSYC2300	General Psychology	3

PSYC2310	Psychology Throughout the Lifespan	3
SOCI2100	Introduction to Sociology	3
	Choose one course from MnTC Goal Area 1 (Communication)	3
	Choose 3 credits from MnTC Goal Area 6	3

General Education Elective 0 Credits

Technical Studies Elective 5 Credits

Technical Studies Courses may be used to satisfy elective credits

OR

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Total Associate of Science Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

BIOL2005	General Biology I	4
ENGL2121	Writing and Research	4
MATH2200	College Algebra	4
SOCI2100	Introduction to Sociology	3

Total Credits 15

Second Semester

BIOL2125	Anatomy and Physiology I	4
MATH2150	Introduction to Statistics	3
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
PSYC2300	General Psychology	3

Total Credits 13

Third Semester

BIOL2225	Anatomy and Physiology II	4
CHEM2000	Introduction to Chemistry	4
	or	
CHEM2200	Essentials of General, Organic and Biochemistry - Replaced by CHEM2201 - FY21	5
COMM2020	Intercultural Communication	3
	or	
COMM2050	Interpersonal Communication	3
	Choose 3 credits from MnTC Goal Area 6	3

Total Credits 14

Fourth Semester

BIOL2003	Nutrition and Health	3
BIOL2235	Microbiology	4
PSYC2310	Psychology Throughout the Lifespan	3
	Choose 3 credits from MnTC Goal Area 1	3
	Technical Studies Electives	5
	or	
	General Education Electives	5

Total Credits 18

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

MnTC Goal Area 6

ARTS2000	Elements of Design	3
ARTS2120	Photographic Arts	3
ARTS2130	Digital Photography I	3
ENGL2130	Introduction to Creative Writing	3
ENGL2140	Topics in Literature: Trades and Industry	3
ENGL2200	Introduction to Cinema	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2500	World Religions	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 8702 / EP 8703

Health Unit Coordinator & Nursing Station

Health Unit Coordinator (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Health Unit Coordinator (HUC) Certificate concentrates on coursework directly related to working on the nursing unit in health care facilities. The Health Unit Coordinator is an important member of the professional health care team. HUC's provide a crucial role in disseminating communication throughout the nursing unit and assisting the nursing staff by performing non-clinical duties, as directed.

The professional responsibilities of Health Unit Coordinators include answering the telephone and intercom, initiating records for new patients, performing patient admission, transfer and discharge procedures, operating unit equipment, ordering daily diets and laboratory tests, scheduling diagnostic studies, recording patient data for departmental records into the patient's record and ordering of unit supplies. In the work place, the HUC communicates with various departments within the facility via the telephone, fax machine, pagers, pneumatic tube systems and computers.

This program will consist of an internship at a local health care facility. Required coursework will focus on HUC practices and procedures, health care core concepts, computer operations, communication skills and medical terminology. Graduates are eligible to sit for the National Association of Health Unit Coordinators (NAHUC) certification exam.

Personal qualities considered essential for this occupation are the ability to detail oriented with a high degree of accuracy while managing the workload in a very busy environment. The HUC should be able to solve problems logically and critically, be self-motivated, conscientious and demonstrate good customer service skills. Health Unit Coordinators are expected to protect the confidentiality of patient information, demonstrate a high degree of ethics, and exhibit professionalism.

Prerequisite: Student must achieve a score of 78 or above on the reading assessment test or successfully complete ENGL0921 prior to entering the Health Unit Coordinator Program. A score of 74 or above on the writing test is recommended.

Students are required to maintain a "C" (80%) or above in all Health Unit Coordinator courses to remain in the program.

Award Outcomes

Demonstrate knowledge of medical terms needed to perform job duties.
Differentiate between hospital departments.
Exhibit professionalism.
Utilize computer software effectively.
Demonstrate skills and knowledge needed to process physician orders.
Demonstrate customer service and telephone etiquette skills.
Function as a member of the health care team.
Operate unit equipment.
Manage clerical duties on the nursing unit.
Understand HIPAA and patient confidentiality requirements.

Career Opportunities

At the completion of the HUC Certificate the graduate may be employed in a hospital, extended care facility or medical office or other health care setting.

Program Requirements

Technical Studies Required 14 Credits

HLUC1002	Health Unit Coordinator Fundamentals	4
HLUC1020	Medical Terminology	2
HLUC1061	Diagnostic and Therapeutic Procedures	3
HLUC1101	Processing Physician`s Orders	2
HLUC1200	Health Unit Coordinator Internship	3

General Education Required 3 Credits

CPLT1100	Computer Essentials	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Student must achieve a score of 78 or above on the reading assessment test or successfully complete ENGL0921 prior to entering the Health Unit Coordinator Program. A score of 74 or above on the writing test is recommended.

Students are required to maintain a “C” (80%) or above in all Health Unit Coordinator courses in the program.

First Semester

HLUC1002	Health Unit Coordinator Fundamentals	4
HLUC1020	Medical Terminology	2
HLUC1061	Diagnostic and Therapeutic Procedures	3
HLUC1101	Processing Physician`s Orders	2
HLUC1200	Health Unit Coordinator Internship	3
CPLT1100	Computer Essentials	3

Total Credits 17

Graduation (17 Credits)

Criminal Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 7306 / EP 7307

Nursing Station Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

The Nursing Station Technician diploma program is designed for Health Unit Coordinator (HUC) students who wish to obtain the skills necessary to assist nurses with hands on patient care and/or advanced administrative duties. A Nursing Station Technician (NST) is responsible for coordination of communications and procedures to the nursing unit, processing admissions, discharge and transfers, transcribing orders and updating patient records. NST's work under the direction of a nurse to assist in delivery of patient care including personal hygiene, clients nutritional requirements, daily activities, monitoring of patient vital signs, transporting patients and equipment, setting up and maintaining patient rooms, reordering and stocking supplies.

The Nursing Station Technician is an important member of the professional health care team. NST's provide a crucial role in disseminating communication throughout the nursing unit and assisting the nursing staff. The professional responsibilities include answering the telephone and intercom, initiating records for new patients, performing patient admission, transfer and discharge procedures, operating unit equipment, ordering daily diets and laboratory tests, scheduling diagnostic studies, recording patient data from departmental records into the patient's record and ordering of unit supplies. In the work place, the NST communicates with various departments within the facility via the telephone, fax machine, pagers, pneumatic tube systems and computers

This program will include two clinical experiences. Required coursework will focus on practices and procedures, health care core concepts, processing of physician's orders, communication skill development, team building skill development, medical terminology and Nursing Assistant skills.

Personal qualities considered essential for this occupation are the ability to be detail oriented with a high degree of accuracy while managing the workload in a very busy environment. The NST should be able to solve problems logically and critically, be self-motivated, conscientious, flexible, and demonstrate good customer service skills. Health care workers are expected to protect the confidentiality of patient information, demonstrate a high degree of ethics, and exhibit professionalism.

Award Outcomes

Manage clerical duties on the nursing unit.
Demonstrate team building and effective communication skills.
Function as a member of the health care team.
Demonstrate knowledge of medical terms needed to perform job duties.
Operate unit equipment.
Utilize computer software effectively.
Exhibit professionalism.
Differentiate between hospital departments.
Perform patient care duties safely and effectively.
Demonstrate skills and knowledge needed to process physician orders.
Understand HIPAA and patient confidentiality requirements.

Career Opportunities

Positions are available as Health Unit Coordinators (HUC), Patient Care Technicians (PCT), Nursing Station Technician (NST) and Unit Coordinators (UC) in hospitals, nursing homes, clinics, doctor's offices, insurance companies and other healthcare settings. Graduates are eligible to sit for the National Association of Health Unit Coordinators (NAHUC) certification exam and the Nursing Assistant state examination.

Program Requirements

Technical Studies Required 27 Credits

HLUC1002	Health Unit Coordinator Fundamentals	4
HLUC1020	Medical Terminology	2
HLUC1061	Diagnostic and Therapeutic Procedures	3
HLUC1101	Processing Physician`s Orders	2
HLUC1200	Health Unit Coordinator Internship	3
HLTH2001	Nutrition and Health	2
EMSV1020	CPR/First Aid	1
EMSV1136	Understanding EKGs	2
EMSV1155	Phlebotomy Techniques	3
NAHA1002	Nursing Assistant/Home Health Aide	5

General Education Required 9 Credits

CPLT1100	Computer Essentials	3
COMM2050	Interpersonal Communication	3
PSYC2310	Psychology Throughout the Lifespan	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 36

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

HLUC1002	Health Unit Coordinator Fundamentals	4
HLUC1020	Medical Terminology	2
HLUC1061	Diagnostic and Therapeutic Procedures	3
HLUC1101	Processing Physician`s Orders	2
HLUC1200	Health Unit Coordinator Internship	3
EMSV1136	Understanding EKGs	2

Total Credits 16

Second Semester

COMM2050	Interpersonal Communication	3
EMSV1155	Phlebotomy Techniques	3
HLTH2001	Nutrition and Health	2
NAHA1002	Nursing Assistant/Home Health Aide	5
PSYC2310	Psychology Throughout the Lifespan	3

Total Credits 16

Summer Semester

CPLT1100	Computer Essentials	3
EMSV1020	CPR/First Aid	1

Total Credits 4

Graduation (36 Credits)

Criminal Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 7308 / EP 7309

Medical Assistant

Medical Assistant (EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Medical Assistants are an integral part of the health care team. The Medical Assistant program prepares you to be a multi-skilled professional who assists in patient care management. The program focus is to ensure development of the critical skills needed to perform clinical, laboratory, and administrative duties. In the ambulatory care setting medical assistants collect patient data, collect and prepare laboratory specimens, and provide patient education related to procedures, medications and diet.

Prerequisite: 8-hour CPR course for Health Care Providers offered by the American Heart Association or 8-hour CPR/AED for the Professional Rescuer course offered by the American Red Cross or EMSV1020, BIOL2045 or HLTH1010, ENGL2050, COMM2020 or COMM2050 or COMM2060, HLUC1020 and qualifying score reading, writing, math, computer literacy and keyboarding assessment tests.

Award Outcomes

Analyze Medical Assistant Knowledge to deliver quality health care to the patient in the ambulatory care setting.
Complete Required American Association Medical Assistant Competencies.
Demonstrate the role and responsibilities of the medical assistant as a member of the health care team.
Apply accurate oral and written communication skills.
Utilize effective critical thinking skills.
Value legal and ethical obligations within the medical assistant scope of practice.

Career Opportunities

By the year 2020, one out of four Americans will be age 65 or older. With both an aging population and workforce, the demand for health care professionals will continue to increase. As professionals with knowledge in three areas of patient care (clinical, laboratory and administrative procedures), Medical Assistants are in high demand throughout the health care industry. The program can also serve as a stepping stone to other health care careers, such as Emergency Medical Technician, Licensed Practical Nurse, Registered Nurse, and physician's assistant, which all require further training.

Program Requirements

Technical Studies Required 44 Credits

BIOL2045	Human Biology	4
	or	
HLTH1010	Anatomy and Physiology	4
HLTH1020	Disease Conditions	3
HLUC1020	Medical Terminology	2
MAST1015	Medical Assistant Administrative I	3
MAST1020	Lab I	4
MAST1030	Clinical Procedures I	4
MAST1045	Pharmacology	3
MAST1060	Documentation for Health Care Professionals	2
	or	
MAST2000	Fundamentals of Radiographic Imaging	2
	or	
HLTH1000	Introduction to Health Careers	3
	or	
HLTH2001	Nutrition and Health	2
MAST2015	Medical Assistant Administrative II	3
MAST2021	Lab II	2
MAST2035	Clinical Procedures II	5
MAST2041	Practicum	6
EMSV1155	Phlebotomy Techniques	3

General Education Required 16 Credits

COMM2020	Intercultural Communication	3
	or	

COMM2050	Interpersonal Communication	3
	or	
COMM2060	Small Group Communication	3
ENGL2050	Short Form Composition and Reporting	4
PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics	4
PSYC2310	Psychology Throughout the Lifespan	3
	Choose one course from MnTC Goal Area 2	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence - Full-Time

Offered at Eden Prairie Only

Pre-Medical Assistant Requirements

All Pre-Medical Assistant courses must be completed with a "C" or better.

	Accuplacer Computer Literacy Test Score of 70%+	
	or	
CPLT1100	Computer Essentials	3
	Keyboarding score of 25 nwpm	
	or	
CPLT1000	Computer Keyboarding	2
EMSV1020	CPR/First Aid	1
	or	
	Current CPR for Health Care Provider or Professional Rescuer	
	Accuplacer Elementary Algebra Score of 41+	
	or	
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3
BIOL2045	Human Biology	4
	or	
HLTH1010	Anatomy and Physiology	4
	Choose one of the following COMM Courses:	
COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
	Choose 3 credits from MnTC Goal Area 2	3
ENGL2050	Short Form Composition and Reporting	4
HLUC1020	Medical Terminology	2

Total Credits 16

* Students must have a cleared criminal background study. Contact MN Department of Human Services, 651-431-2000, with questions.

*Completed immunization form.

First Semester

HLTH1020	Disease Conditions	3
MAST1015	Medical Assistant Administrative I	3
MAST1020	Lab I	4
MAST1030	Clinical Procedures I	4

Total Credits 14

Second Semester

EMSV1155	Phlebotomy Techniques	3
MAST1045	Pharmacology	3
MAST2015	Medical Assistant Administrative II	3
MAST2021	Lab II	2
MAST2035	Clinical Procedures II	5

Total Credits 16

Summer Semester

PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics (recommended)	4
PSYC2310	Psychology Throughout the Lifespan	3

Total Credits 6

Third Semester

HLTH1000	Introduction to Health Careers	3
	or	
HLTH2001	Nutrition and Health	2
	or	
MAST1060	Documentation for Health Care Professionals	2
	or	
MAST2000	Fundamentals of Radiographic Imaging	2
MAST2041	Practicum	6

(Only online courses can be taken during this semester.)

Total Credits 8

General Information

• The Hennepin Technical College Medical Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater, FL 33763, P: 727-210-2350, F: 727-210-2354, E: mail@caahep.org, upon the recommendation of the Medical Assistant Education Review Board (MAERB).

• HTC's Medical Assistant Program expectations are to prepare competent entry level Medical Assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

• All Medical Assistant students must earn a grade of C in all MAST courses to continue. If a student earns less than a C in a MAST course or drops a course (earning a W), the course may be repeated one time only.

• Current CPR for Health Care Provider, Professional Rescuer or EMSV1020 CPR/First Aide required before enrolling in MAST2041 Practicum.

• Students are required to complete a 240 hour **unpaid** practicum.

• The approximate books and supplies cost for MAST is $1,800.

• Students must complete the Medical Assistant program in 4 years. The 4-year timeline begins with the first semester MAST courses.

• Grading scale used in MAST courses:

93-100% = A

86-92% = B

80-85% = C

75-79% = D

< 74% = F

Criminal Background Studies

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

	Recommended Electives:	
BIOL2003	Nutrition and Health	3
SOCI2000	Marriage and Family	3
SOCI2130	Food, Culture and Society	3
	Other Electives:	
ARTS2000	Elements of Design	3
ARTS2120	Photographic Arts	3
ARTS2130	Digital Photography I	3
BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry	4
	Foundations	
COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3
ENGL2200	Introduction to Cinema	3
LANG2000	American Sign Language/Deaf Culture I	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2000	Introduction to Logic	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2500	World Religions	3
PHIL2600	Environmental Ethics	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
PSYC2300	General Psychology	3

PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/20/2020 : BP / EP 7809

Semester Sequence - Part-Time

Offered at Eden Prairie Only

Pre-Medical Assistant Requirements

All Pre-Medical Assistant courses must be completed with a "C" or better.

	Accuplacer Computer Literacy Test Score of 70%+ or	
CPLT1100	Computer Essentials	3
	Keyboarding score of 25 nwpm or	
CPLT1000	Computer Keyboarding	2
EMSV1020	CPR/First Aid or Current CPR for Health Care Provider or Professional Rescuer	1
	Accuplacer Elementary Algebra Score of 41+ or	
MATH1050	Math Pathways Plus for College and Careers or	4
MATH1060	Math Pathways for College and Careers	3
BIOL2045	Human Biology or	4
HLTH1010	Anatomy and Physiology	4
	Choose one of the following COMM Courses:	
COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
	Choose 3 credits from MnTC Goal Area 2	3
ENGL2050	Short Form Composition and Reporting	4
HLUC1020	Medical Terminology	2

Total Credits 16

* Students must have a cleared criminal background study. Contact MN Department of Human Services, 651-431-2000, with questions.

*Completed immunization form.

First Semester

HLTH1020	Disease Conditions	3
MAST1015	Medical Assistant Administrative I	3

Total Credits 6

Second Semester

MAST1045	Pharmacology	3
MAST2015	Medical Assistant Administrative II	3

Total Credits 6

Summer Semester

PHIL2200	Ethics	3
	or	
PHIL2400	Medical Ethics (recommended)	4
PSYC2310	Psychology Throughout the Lifespan	3

Total Credits 6

Third Semester

EMSV1155	Phlebotomy Techniques	3
MAST1020	Lab I	4
MAST1030	Clinical Procedures I	4

Total Credits 11

Fourth Semester

MAST2021	Lab II	2
MAST2035	Clinical Procedures II	5

Total Credits 7

Fifth Semester

MAST1060	Documentation for Health Care Professionals	2
	or	
MAST2000	Fundamentals of Radiographic Imaging	2
	or	
HLTH1000	Introduction to Health Careers	3
	or	
HLTH2001	Nutrition and Health	2
MAST2041	Practicum	6

(Only online courses can be taken during this semester.)

Total Credits 8

General Information

• The Hennepin Technical College Medical Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 25400 US Highway 19 North, Suite 158, Clearwater, FL 33763, P: 727-210-2350, F: 727-210-2354, E: mail@caahep.org, upon the recommendation of the Medical Assistant Education Review Board (MAERB).

• The HTC's Medical Assistant Program expectations are to prepare competent entry level Medical Assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

• All Medical Assistant students must earn a grade of C in all MAST courses to continue. If a student earns less than a C in a MAST course or drops a course (earning a W), the course may be repeated one time only.• Current CPR for Health Care Provider, Professional Rescuer or EMSV1020 CPR/First Aide required before enrolling in MAST2041 Practicum.

• Students are required to complete a 240 hour **unpaid** practicum.

• The approximate books and supplies cost for MAST is $1,800.

• Students must complete the Medical Assistant program in 4 years. The 4-year timeline begins with the first semester MAST courses.

• Grading scale used in MAST courses:

93-100% = A

86-92% = B

80-85% = C

75-79% = D

< 74% = F

Criminal Background Studies

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

	Recommended Electives:	
BIOL2003	Nutrition and Health	3
SOCI2000	Marriage and Family	3
SOCI2130	Food, Culture and Society	3
	Other Electives:	
ARTS2000	Elements of Design	3
ARTS2120	Photographic Arts	3
ARTS2130	Digital Photography I	3
BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2215	Human Physiology	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry	4
	Foundations	
COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2070	Cyber Culture - On Hold - 9/27/18	3
COMM2130	Public Speaking	3
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3
ENGL2200	Introduction to Cinema	3
LANG2000	American Sign Language/Deaf Culture I	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2000	Introduction to Logic	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

PHIL2400	Medical Ethics	4
PHIL2500	World Religions	3
PHIL2600	Environmental Ethics	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/20/2020 : BP / EP 7809

Medical Office

Medical Administrative Assistant (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Medical administrative assistants have the opportunity to work on health care teams. Duties performed utilize a knowledge of medical terminology as well as hospital and clinic procedures and may include scribing of medical reports and correspondence, appointment and meeting scheduling, patient file and office record maintenance, and billing and insurance processing. This career requires excellent verbal and written communication skills and knowledge of patient confidentiality laws.

Prerequisite: CPLT1000 Computer Keyboarding or qualifying score on keyboarding assessment test with demonstration of QWERTY home row typing technique. Qualifying score on math assessment test OR MATH1050 or MATH1060.

Award Outcomes

Apply medical terminology.
Scribe medical reports and correspondence.
Create business correspondence.
Communicate using grammatically correct English.
Apply medical coding principles.
Document telephone communication.
Schedule appointments.
Demonstrate accounting principles.
Demonstrate professional behavior.
Demonstrate insurance and billing procedures.
Interpret HIPAA regulations.
Utilize an electronic health record.

Career Opportunities

Individuals may choose to work in an acute care facility, outpatient clinic, extended care facility, medical insurance office, research facility or another medical environment.

Program Requirements

Technical Studies Required 39 Credits

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CCDS1040	Job Seeking Skills	2
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4
OFCR1317	Medical Office Procedures	4
OFCR1331	Medical Document Processing	4
OFCR1335	Medical Coding and Reimbursement Fundamentals	4
OFCR1340	Medical Office Management	3

General Education Required 19 Credits

BIOL2045	Human Biology	4
COMM2050	Interpersonal Communication	3
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

	or	
PHIL2400	Medical Ethics	4
PSYC2300	General Psychology	3
	or	
PSYC2310	Psychology Throughout the Lifespan	3

General Education Elective 0 Credits

Technical Studies Elective 2 Credits

Any ACCT, BUSN, CCIS, EMSV, or OFCR course that is not required for this award may be used as an elective.

Recommended:

EMSV1020	CPR/First Aid	1

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CCIS1035	Microsoft Word	3
COMM2050	Interpersonal Communication	3
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4

Total Credits 13

Second Semester

BIOL2045	Human Biology	4
CCIS1080	Microsoft Office Productivity Apps 1	3
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL2125	Technical Writing	3
OFCR1335	Medical Coding and Reimbursement Fundamentals	4

Total Credits 17

Third Semester

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
OFCR1317	Medical Office Procedures	4
OFCR1331	Medical Document Processing	4
PSYC2300	General Psychology	3
	or	
PSYC2310	Psychology Throughout the Lifespan	3
	Technical Studies Electives	2

Total Credits 16

Fourth Semester

ACCT1125	Excel	3
CCDS1040	Job Seeking Skills	2
OFCR1340	Medical Office Management	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

	or	
PHIL2400	Medical Ethics	4

Total Credits 14

Technical Studies Electives

Any Accounting Careers (ACCT), Business (BUSN), Information Technology/Computer Careers (CCIS), Emergency Medical Services (EMSV), or Medical Office Careers (OFCR) course that is not required for this award may be used as an elective.

Recommended:

EMSV1020	CPR/First Aid	1

Choose a Total of: 2 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 2204 / EP 2205

Medical Administrative Assistant (BP/EP) Diploma

Overview and Award Outcomes

Overview

Medical administrative assistants have the opportunity to work on health care teams. Duties performed utilize a knowledge of medical terminology as well as hospital and clinic procedures and may include scribing of medical reports and correspondence, appointment and meeting scheduling, patient file and office record maintenance, and billing and insurance processing. This career requires excellent verbal and written communications skills and knowledge of patient confidentiality laws.

Prerequisite: CPLT1000 Computer Keyboarding or qualifying score on keyboarding assessment test with demonstration of QWERTY home row typing technique. Qualifying score on math assessment test OR MATH1050 or MATH1060.

Award Outcomes

Apply medical terminology.
Scribe medical reports and correspondence.
Create business correspondence.
Communicate using grammatically correct English.
Apply medical coding principles.
Document telephone communication.
Schedule appointments.
Demonstrate accounting principles.
Demonstrate professional behavior.
Demonstrate insurance and billing procedures.
Interpret HIPAA regulations.
Utilize an electronic health record.

Career Opportunities

Individuals may choose to work in an acute care hospital, outpatient clinic, extended-care facility, medical insurance office, research facility or another medical environment.

Program Requirements

Technical Studies Required 37 Credits

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
ACCT1125	Excel	3
CCIS1035	Microsoft Word	3
CCIS1080	Microsoft Office Productivity Apps 1	3
CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4
OFCR1317	Medical Office Procedures	4
OFCR1331	Medical Document Processing	4
OFCR1335	Medical Coding and Reimbursement Fundamentals	4
OFCR1340	Medical Office Management	3

General Education Required 4 Credits

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2

General Education Elective 3 Credits

Any HTC college level general education course may be used to satisfy the elective requirement.

Technical Studies Elective 4 Credits

Any ACCT, BUSN, CCIS, EMSV, or OFCR course that is not required for this award may be used as an elective.

Recommended:

EMSV1020	CPR/First Aid	1

Total Diploma Credits 48

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CCIS1035	Microsoft Word	3
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4

Total Credits 10

Second Semester

CCIS1080	Microsoft Office Productivity Apps 1	3
CPLT1005	Advanced Keyboarding and Document Processing	3
OFCR1335	Medical Coding and Reimbursement Fundamentals	4
	Technical Studies Electives	4

Total Credits 14

Third Semester

ACCT1000	Introduction to Accounting	3
	or	
ACCT1102	Principles of Accounting I	4
OFCR1317	Medical Office Procedures	4
OFCR1331	Medical Document Processing	4
	General Education Electives	3

Total Credits 14

Fourth Semester

ACCT1125	Excel	3
CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
OFCR1340	Medical Office Management	3

Total Credits 10

Technical Studies Electives

Any Accounting Careers (ACCT), Business (BUSN), Information Technology/Computer Careers (CCIS), Emergency Medical Services (EMSV), or Medical Office Careers (OFCR) course that is not required for this award may be used as an elective.

Recommended:

EMSV1020	CPR/First Aid	1

Choose a Total of: 4 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3

COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 3 Credits

Graduation (48 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 2206 / EP 2207

Medical Coding Specialist (BP/EP) Diploma

Overview and Award Outcomes

Overview

This program is offered in partnership with Anoka Technical College, and the award is issued by Anoka Technical College.

Medical coders are clinical data professionals who translate written medical documentation into alpha-numeric codes to comply with medical reimbursement procedures and health information data requirements. Accuracy and knowledge of patient confidentiality laws are required.

Information on Anoka Technical College courses can be found at www.anokatech.edu or by calling 763-576-4700.

Award Outcomes

Analyze medical record documentation in order to assign diagnostic and procedure codes.
Provide important information for the health care reimbursement process.
Assist in medical research and statistics.

Career Opportunities

Career opportunities are available for individuals in health care settings such as clinics, hospitals, and nursing homes.

Note: A minimum course grade of a "C" must be earned in each of the courses to meet graduation requirements.

Program Requirements

Technical Studies Required 34 Credits

ADSC1252	Professional Practice for Coding Specialists (Anoka)	3
CPLT1005	Advanced Keyboarding and Document Processing	3
HITM1130	ICD-10-CM Coding (Anoka)	3
HITM1200	Billing and Reimbursement (Anoka)	2
HITM1221	Introduction to Health Information Management (Anoka)	3
HITM1230	ICD-10-PCS (Anoka)	3
HITM1240	CPT Coding (Anoka)	3
HITM1244	Law and Ethics (Anoka)	2
HITM1250	Advanced Coding (Anoka)	2
HLTH1020	Disease Conditions	3
	or	
HLTH1000	Disease Conditions (Anoka)	2
BIOL2045	Human Biology	4
	or	
HLTH1005	Anatomy and Physiology (Anoka)	4
OFCR1301	Medical Terminology	4

General Education Required 9 Credits

CCDS1100	Student Success	3

Choose six credits from two of the discipline areas below: 6 Credits

SPCH (Anoka), ENGL (Anoka or HTC), or COMM (HTC)

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 43

Semester Sequence - Full-Time

Offered at Brooklyn Park and Eden Prairie

This program is offered in partnership with Anoka Technical College, and the award is issued by Anoka Technical College.

First Semester

BIOL2045	Human Biology	4
	or	
HLTH1005	Anatomy and Physiology (Anoka)	4
CCDS1100	Student Success	3
HITM1130	ICD-10-CM Coding (Anoka)	3
OFCR1301	Medical Terminology	4

Total Credits 14

Second Semester

CPLT1005	Advanced Keyboarding and Document Processing	3
HITM1221	Introduction to Health Information Management (Anoka)	3
HITM1230	ICD-10-PCS (Anoka)	3
HITM1240	CPT Coding (Anoka)	3
HLTH1000	Disease Conditions (Anoka)	2
	or	
HLTH1020	Disease Conditions	3

Total Credits 14

Third Semester

ADSC1252	Professional Practice for Coding Specialists (Anoka)	3
HITM1200	Billing and Reimbursement (Anoka)	2
HITM1244	Law and Ethics (Anoka)	2
HITM1250	Advanced Coding (Anoka)	2
	Choose 6 credits from 2 of the following discipline areas: SPCH (Anoka), ENGL (Anoka or HTC), or COMM (HTC)	6

Total Credits 15

Graduation (43 Credits)

Note: Many of the courses offered through Anoka Technical College are Web-enhanced or Online courses.

Note: Financial Aid for this program is only available through Anoka Technical College. Students will also need to complete the consortium process to have courses taken at HTC be included in the award at Anoka Technical College.

4/15/2020 : BP 2215 / EP 2216

Semester Sequence - Part-Time

Offered at Brooklyn Park and Eden Prairie

This program is offered in partnership with Anoka Technical College, and the award is issued by Anoka Technical College.

First Semester

BIOL2045	Human Biology	4
	or	
HLTH1005	Anatomy and Physiology (Anoka)	4
CCDS1100	Student Success	3
OFCR1301	Medical Terminology	4

Total Credits 11

Second Semester

CPLT1005	Advanced Keyboarding and Document Processing	3
HLTH1000	Disease Conditions (Anoka)	2
	or	
HLTH1020	Disease Conditions	3
	Choose 6 credits from 2 of the following discipline areas: SPCH (Anoka), ENGL (Anoka or HTC), or COMM (HTC)	6

Total Credits 11

Third Semester

HITM1130	ICD-10-CM Coding (Anoka)	3
HITM1221	Introduction to Health Information Management (Anoka)	3
HITM1230	ICD-10-PCS (Anoka)	3

Total Credits 9

Fourth Semester

HITM1200	Billing and Reimbursement (Anoka)	2
HITM1240	CPT Coding (Anoka)	3
HITM1244	Law and Ethics (Anoka)	2
HITM1250	Advanced Coding (Anoka)	2

Total Credits 9

Fifth Semester

ADSC1252	Professional Practice for Coding Specialists (Anoka)	3

Total Credits 3

Graduation (43 Credits)

Note: Many of the courses offered through Anoka Technical College are Web-enhanced or Online courses.

Note: Financial Aid for this program is only available through Anoka Technical College. Students will also need to complete the consortium process to have courses taken at HTC be included in the award at Anoka Technical College.

4/15/2020 : BP 2215 / EP 2216

Medical Receptionist (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The medical receptionist processes telephone calls, greets patients, schedules appointments, maintains patient file data, and may arrange for laboratory and diagnostic services. Accuracy, dependability and a courteous professional manner are essential. This career requires excellent verbal and written communication skills and knowledge of patient confidentiality laws.

Prerequisite: CPLT1000 Computer Keyboarding or qualifying score on keyboarding assessment test with demonstration of QWERTY home row typing technique. Qualifying score on math assessment test OR MATH1050 or MATH1060.

Award Outcomes

Apply medical terminology.
Create business correspondence.
Communicate using grammatically correct English.
Document telephone communication.
Schedule appointments.
Demonstrate professional behavior.
Interpret HIPAA regulations.
Utilize an electronic health record.
Demonstrate insurance and billing procedures.

Career Opportunities

The medical receptionist will find job opportunities in a variety of health care settings.

Program Requirements

Technical Studies Required 18 Credits

CPLT1005	Advanced Keyboarding and Document Processing	3
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4
OFCR1317	Medical Office Procedures	4
OFCR1335	Medical Coding and Reimbursement Fundamentals	4

General Education Required 2 Credits

COMM1050	Communication in the Workplace	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 20

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CPLT1005	Advanced Keyboarding and Document Processing	3
COMM1050	Communication in the Workplace	2
ENGL1010	Business English	3
OFCR1301	Medical Terminology	4

Total Credits 12

Second Semester

OFCR1317	Medical Office Procedures	4
OFCR1335	Medical Coding and Reimbursement	4

Fundamentals

Total Credits 8

Graduation (20 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 2008 / EP 2209

Practical Nursing

Practical Nursing (BP/EP) Diploma

Overview and Award Outcomes

Overview

The courses listed are designated to meet the requirements of the Minnesota Board of Nursing for qualifying to take the practical nursing state board licensing examination (NCLEX-PN). Upon successful completion of NCLEX-PN the graduate practical nurse is licensed as a Licensed Practical Nurse. Licensed Practical Nurses provide direct care under the supervision of a licensed physician or registered nurse. Licensed Practical Nurses use the nursing process to collect patient data and implement nursing care in maintenance of health as well as caring for those who are ill, injured or who have debilitating conditions. Students attending courses full-time can complete this program in 2 semesters. Cleared criminal background study is required.

Prerequisite: 8-hour CPR course for Health Care Providers offered by the American Heart Association or 8-hour CPR/AED for the Professional Rescuer course offered by the American Red Cross or EMSV1020; NAHA1002 or currently on the Minnesota Department of Health Registry for Nursing Assistants; BIOL2045 or BIOL2125 and BIOL2225, ENGL2050, NURS1015 or BIOL2003 or HLTH2001, and qualifying scores in reading, writing, math and computer literacy assessment tests. Students are required to attend an application session to receive their application. Students should plan on attending an application session at least 1 semester before completion of their prerequisites. Application session dates/times and locations are located under entry requirements. Application to the Practical Nursing Program is required after successful completion of the prerequisites. Students are accepted into the program through the application process.

Award Outcomes

Demonstrate effective communication techniques while providing patient care founded on basic physical, developmental, spiritual, cultural, functional, and psychosocial needs of individual patients across the lifespan.
Manage care through planning, organizing or assigning aspects of care to UAP's and LPN's under the direction of an RN or other licensed Health Care Provider.
Participate as a member of the inter-professional team collaborating with other health care providers to promote safe, quality, patient centered care.
Demonstrate nursing safety principles.
Utilize information technology effectively in the provision of care.
Demonstrate professional behaviors in accordance with legal and ethical nursing practice standards.
Utilize evidence-based nursing judgment when providing individualized patient care when prioritizing care across the lifespan.
Participate in quality improvement.

Career Opportunities

Opportunities for employment may be available in hospitals, clinics, home health agencies, long-term care facilities, transitional care facilities, industry and the armed forces.

Program Requirements

Technical Studies Required 33 Credits

NURS1375	Fundamentals of Nursing	8
NURS1380	Medical Surgical Nursing I	8
NURS2375	Medical Surgical Nursing II	8
NURS2380	Transition to Practice	8
NURS1015	Nutrition Basics	1
	or	
BIOL2003	Nutrition and Health	3
	or	
HLTH2001	Nutrition and Health	2

General Education Required 8 Credits

BIOL2045	Human Biology	4
	or	
BIOL2125	Anatomy and Physiology I	4
	and	
BIOL2225	Anatomy and Physiology II	4
ENGL2050	Short Form Composition and Reporting	4

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 41

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

Priority Point System

• Completing the prerequisite courses does not guarantee acceptance into the program. The program uses a Point System admissions process to rank the top applicants for acceptance into the program. If there are more qualified applicants than spaces available, HTC will use the following priority point system to rank students.

• The student's GPA for the prerequisite courses is multiplied by 50% and the student's cumulative score for the HESI A2 exam will also be multiplied by 50%. The two numbers will be added up for a total score.

Application Session:

Students must attend an application session prior to applying to the program. Applications sessions are typically 1-2 semesters prior to starting the program.

Nursing Application Session Dates - To Be Determined.

HESI Admission Assessment Exam Required for Admission:

After attending an application session students will be invited to complete the HESI Admission Assessment Exam. The HESI Admission Assessment Exam tests students on three main academic areas – English Language (divided into vocabulary, grammar and reading), Math and Science. All students applying to the nursing program are expected to complete the HESI Admission Assessment prior to applying to the program. Students can take the HESI exam twice per semester.

Students must earn a 70% or higher on the reading section and have a cumulative score of 60% or greater on all 5 sections to be eligible for the nursing program.

HESI Admission Assessment Exam Dates - To Be Determined

Pre-Practical Nursing Courses/Prerequisites

The following courses must be completed with a "C" or better, students must also have a cumulative GPA of 2.75 or greater, and students may only repeat the courses one time in the three-year period prior to application: BIOL2045, BIOL2125, BIOL2225, NURS1015, HLTH2001, BIOL2003, ENGL2050.

EMSV1020	CPR/First Aid (taken within last 2 years) or Current Basic Life Support (BLS) for Health Care Provider	1
MATH1650	Mathematical Literacy (preference) or	4
MATH1500	Beginning Algebra or Score of 105+ on ACCUPLACER Elementary Algebra Test	3
NAHA1002	Nursing Assistant/Home Health Aide or Currently on the MN Department of Health registry for Nursing Assistants	5
BIOL2045	Human Biology or	4
BIOL2125	Anatomy and Physiology I and	4

BIOL2225	Anatomy and Physiology II	4
NURS1015	Nutrition Basics	1
	or	
HLTH2001	Nutrition and Health	2
	or	
BIOL2003	Nutrition and Health	3
ENGL2050	Short Form Composition and Reporting	4

Total Credits 9

Students transferring coursework from another college must contact the HTC Transfer Specialist prior to applying to the nursing program.

First Semester

NURS1375	Fundamentals of Nursing	8
NURS1380	Medical Surgical Nursing I	8

Total Credits 16

Second Semester

NURS2375	Medical Surgical Nursing II	8
NURS2380	Transition to Practice	8

Total Credits 16

General Information

• The Practical Nursing program at Hennepin Technical College is approved by the Minnesota Board of Nursing.

• Students who have earned their Practical Nursing Diploma are eligible to take the national licensure exam (NCLEX-PN).

• Students unsuccessful in the nursing program are allowed to reapply once. Students must include a written plan for success with the application.

Criminal Background Studies

Criminal Background Studies: Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study. Contact the MN Department of Human Services, 651-431-2000, with questions. The Minnesota Board of Nursing may have additional requirements prior to licensure. Please contact them with questions.

Graduation (41 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 7510 / EP 7511

Practical Nursing (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The AAS Degree option in Practical Nursing is designed for those who would like to fulfill some of the general education requirements to pursue a professional nursing degree or other advanced degree through HTC. The diploma is required to take the licensure exam and for entry into practice; therefore this is an option in addition to the diploma. This may be taken either at the same time or after graduating with the diploma. Students are encouraged to contact the program to which they wish to transfer for specific information about their requirements to ensure the student selects the appropriate courses.

Prerequisite: 8-hour CPR course for Health Care Providers offered by the American Heart Association or 8-hour CPR/AED for the Professional Rescuer course offered by the American Red Cross or EMSV1020; NAHA1002 or currently on the Minnesota Department of Health Registry for Nursing Assistants; BIOL2045 or BIOL2125 and BIOL2225, ENGL2050, NURS1015 or BIOL2003 or HLTH2001, and qualifying scores in reading, writing, math and computer literacy assessment tests. Students are required to attend an application session to receive their application. Students should plan on attending an application session at least 1 semester before completion of their prerequisites. Application session dates/times and locations are located under entry requirements. Application to the Practical Nursing Program is required after successful completion of the prerequisites. Students are accepted into the program through the application process.

Award Outcomes

Demonstrate effective communication techniques while providing patient care founded on basic physical, developmental, spiritual, cultural, functional, and psychosocial needs of individual patients across the lifespan.
Manage care through planning, organizing or assigning aspects of care to UAP's and LPN's under the direction of an RN or other licensed Health Care Provider.
Participate as a member of the inter-professional team collaborating with other health care providers to promote safe, quality, patient centered care.
Demonstrate nursing safety principles.
Utilize information technology effectively in the provision of care.
Demonstrate professional behaviors in accordance with legal and ethical nursing practice standards.
Utilize evidence-based nursing judgment when providing individualized patient care when prioritizing care across the lifespan.
Participate in quality improvement.

Career Opportunities

Opportunities for employment may be available in hospitals, clinics, home health agencies, long-term care facilities, transitional care facilities, assisted living facilities, industry and the armed forces.

Program Requirements

Technical Studies Required 33 Credits

NURS1375	Fundamentals of Nursing	8
NURS1380	Medical Surgical Nursing I	8
NURS2375	Medical Surgical Nursing II	8
NURS2380	Transition to Practice	8
NURS1015	Nutrition Basics	1
	or	
BIOL2003	Nutrition and Health	3
	or	
HLTH2001	Nutrition and Health	2

General Education Required 14 Credits

BIOL2045	Human Biology	4
	or	
BIOL2125	Anatomy and Physiology I	4
	and	
BIOL2225	Anatomy and Physiology II	4
ENGL2050	Short Form Composition and Reporting	4
	Choose one course from MnTC Goal Area 2	3

	Choose one course from MnTC Goal Area 5	3

General Education Elective 13 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

In addition to all of the Diploma requirements, students who are seeking the degree also must complete the following requirements:

Required Additional General Education Courses

These courses can be taken prior to or after Practical Nursing program admission:

	Choose 3 credits from MnTC Goal Area 2	3
	Choose 3 credits from MnTC Goal Area 5	3
	Choose 13 MnTC General Education Electives to reach 60 credit total	13

Suggested Electives

Students planning to transfer are encouraged to consult the transfer college for program requirements before choosing electives.

	Suggested MnTC electives:	
BIOL2005	General Biology I	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2400	Medical Ethics	4
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
	Humanities/Fine Arts Offerings:	
ARTS2000	Elements of Design	3
ARTS2050	Introduction to Art	3
ARTS2120	Photographic Arts	3
ARTS2130	Digital Photography I	3
ENGL2130	Introduction to Creative Writing	3
ENGL2140	Topics in Literature: Trades and Industry	3
ENGL2200	Introduction to Cinema	3
PHIL2500	World Religions	3

Graduation (60 Credits)

Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 7506 / EP 7507

Manufacturing and Engineering Technology

Automation Robotics Engineering Technology

Automation Robotics Engineering Technology (EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Successful completion of training in Automation Robotics Engineering Technology leads to competitive compensation in a high-demand field. Automation Knowledge, Skills, and Attitudes (mind and hands) are applied to the designing, building, installing, and troubleshooting of high-tech, high-speed automated electro-mechanical machinery systems for Packaging and other manufacturing applications. Emphasized skills include problem-solving, repairing, fabricating, machining, and welding. Automated systems typically include Computers, Touch Screens, Quality Assurance, Vision Systems, Lasers, Robots, Programmable Logic Controllers (PLC), AC/DC/Servo/Stepper/VFD motor controls, hydraulic and pneumatic controls, Conveyors, Bar Code/SmartCard/RFID, Electrical systems, Electronic Circuits, and a wide variety of Sensors. Graduates are eligible to pursue baccalaureate programs in manufacturing and engineering technology.

Award Outcomes

Diagnose root problems impacting production flow.
Solve root problems to maintain production flow.
Perform basic electrical, electronic, welding, machining, laser, vision system, robotic, and fluid power operations.
Apply electrical and mechanical machine control concepts.
Use technical documents to assemble, install, troubleshoot, and repair automated packaging systems.
Set up production lines.
Utilize local area network for remote system control.
Work effectively with a wide variety of packaging materials.
Apply communication skills to interact with people in business and industry.
Manage time and resources.
Accept responsibility.
Display a professional attitude.

Career Opportunities

Automated packaging machine mechanics and technicians are in high demand; surveys indicate even a greater demand as technologies advance. Before reaching the consumer, almost every product is packaged and packed in several forms. Automation in the manufacturing industry is a high opportunity field. This is a Packaging Machinery Manufacturers Institute (PMMI) approved program.

Program Requirements

Technical Studies Required 45 Credits

ARET1126	Mechanical Power Transmission	3
ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2101	Advanced Automation Controls	3
ARET2105	Fluid Power Motion Control	2
ARET2111	Advanced Programmable Logic Controllers	3
ARET2150	Engineering Design and Fabrication	2
ARET2200	FANUC Robotics Operations	2

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	

ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	or	
	MnTC Goal Area 4	
PHIL2100	Critical Thinking for College Success	3
	or	
	MnTC Goal Area 2	
PHYS2001	Introductory Physics	3
	or	
	MnTC Goal Area 3	

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARET1126	Mechanical Power Transmission	3
ARET1161	Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1200	Introduction to Robotics	2
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	or	
	Any course from MnTC Goal Area 4	

Total Credits 14

Second Semester

ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1180	Industrial Electricity and Electronics II	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 14

Third Semester

ARET1165	Vision Systems for QA/SPC	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET2105	Fluid Power Motion Control	2
PHIL2100	Critical Thinking for College Success	3
	or	
	Any course from MnTC Goal Area 2	

PHYS2001	Introductory Physics or Any course from MnTC Goal Area 3	3

Total Credits 16

Fourth Semester

ARET1170	Troubleshooting Mechatronic Systems	3
ARET2101	Advanced Automation Controls	3
ARET2111	Advanced Programmable Logic Controllers	3
ARET2150	Engineering Design and Fabrication	2
ARET2200	FANUC Robotics Operations	2
	General Education Electives	3

Total Credits 16

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 3

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3

MATH2200	College Algebra	4
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2000	Introduction to Logic	3

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/29/2020 : BP / EP 4004

Supply Chain Technician (EP) Diploma

Overview and Award Outcomes

Overview

The Supply Chain Technician installs, operates, supports, upgrades or maintains the automated material handling equipment and systems that support the supply chain. This person is skilled in the hands-on operation and changeover of automated production and packaging machines used in manufacturing and the supply chain. This program teaches the skills to familiarize students in basic mechanical skills and standard operation procedures found in these areas.

Award Outcomes

Diagnose root problems impacting production flow.
Solve root problems to maintain production flow.
Perform basic electrical, electronic, welding, machining, laser, vision system, robotic, and fluid power operations.
Apply electrical and mechanical machine control concepts.
Set up production lines.
Work effectively with a wide variety of packaging materials.
Accept responsibility.
Display a professional attitude.

Career Opportunities

Career opportunities are entry-level positions in manufacturing companies and distribution networks.

Program Requirements

Technical Studies Required 29 Credits

ARET1126	Mechanical Power Transmission	3
ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
	or	
CMAE1528	360 Career Success Skills	1
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1190	Programmable Logic Controllers	3
ARET2105	Fluid Power Motion Control	2

General Education Required 4 Credits

COMM1050	Communication in the Workplace	2
	or	
PHYS1000	Fundamentals of Physics	2
MATH1007	Math for the Trades	2
	or	
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 33

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARET1126	Mechanical Power Transmission	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
	or	
CMAE1528	360 Career Success Skills	1
ARET1175	Industrial Electricity and Electronics I	3
ARET1190	Programmable Logic Controllers	3
COMM1050	Communication in the Workplace	2
	or	
PHYS1000	Fundamentals of Physics	2

Total Credits 15

Second Semester

ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1180	Industrial Electricity and Electronics II	3
ARET2105	Fluid Power Motion Control	2
MATH1007	Math for the Trades	2
	or	
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

Total Credits 18

Graduation (33 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/29/2020 : BP / EP 4006

Automated Machinery Systems (EP) Diploma

Overview and Award Outcomes

Overview

Successful completion of training in Automation Robotics Engineering Technology leads to competitive compensation in a high-demand field. Automation Knowledge, Skills, and Attitudes (mind and hands) are applied to the designing, building, installing, and troubleshooting of high-tech, high-speed automated electro-mechanical machinery systems for Packaging and other manufacturing applications. Emphasized skills include problem-solving, repairing, fabricating, machining, and welding. Automated systems typically include Computers, Touch Screens, Quality Assurance, Vision Systems, Lasers, Robots, Programmable Logic Controllers (PLC), AC/DC/Servo/Stepper/VFD motor controls, hydraulic and pneumatic controls, Conveyors, Bar Code/SmartCard/RFID, Electrical systems, Electronic Circuits, and a wide variety of Sensors.

Award Outcomes

Diagnose root problems impacting production flow.
Solve root problems to maintain production flow.
Perform basic electrical, electronic, welding, machining, laser, vision system, robotic, and fluid power operations.
Apply electrical and mechanical machine control concepts.
Use technical documents to assemble, install, troubleshoot, and repair automated packaging systems.
Set up production lines.
Utilize local area network for remote system control.
Work effectively with a wide variety of packaging materials.
Apply communication skills to interact with people in business and industry.
Manage time and resources.
Accept responsibility.
Display a professional attitude.

Career Opportunities

Automated packaging machine mechanics and technicians are in high demand; surveys indicate even a greater demand as technologies advance. Before reaching the consumer, almost every product is packaged and packed in several forms. Automation in the manufacturing industry is a high opportunity field. This is a Packaging Machinery Manufacturers Institute (PMMI) approved program.

Program Requirements

Technical Studies Required 46 Credits

ARET1126	Mechanical Power Transmission	3
ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2101	Advanced Automation Controls	3
ARET2105	Fluid Power Motion Control	2
ARET2111	Advanced Programmable Logic Controllers	3
ARET2150	Engineering Design and Fabrication	2
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1

General Education Required 6 Credits

COMM1050	Communication in the Workplace	2
	or	
ENGL2125	Technical Writing	3

PHYS1000	Fundamentals of Physics	2
	or	
PHYS2001	Introductory Physics	3
MATH1007	Math for the Trades	2
	or	
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 8 Credits

Any combination of ARET, CMAE and/or ENGC courses listed below that are not required for this award may be used as an elective totaling 8 credits.

Recommended:

ARET1900	Specialized Lab	1 - 4
ARET2181	Internship	1 - 4
ARET2500	Industrial Networks	2
ARET2540	Project Management for Manufacturing	2
ARET2560	Instrumentation and Process Control I	3
CMAE1510	Print Reading	2
CMAE1514	Safety Awareness	2
CMAE1528	360 Career Success Skills	1
	or	
ENGC1250	SolidWorks I	4

Total Diploma Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARET1126	Mechanical Power Transmission	3
ARET1161	Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1200	Introduction to Robotics	2
MATH1007	Math for the Trades	2
	or	
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

Total Credits 13

Second Semester

ARET1130	Maintenance Operations	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1180	Industrial Electricity and Electronics II	3
COMM1050	Communication in the Workplace	2
	or	
ENGL2125	Technical Writing	3

Total Credits 13

Summer Semester

Recommended Electives:

ARET2181	Internship	1 - 4

Total Credits: 4

Third Semester

ARET1165	Vision Systems for QA/SPC	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET2105	Fluid Power Motion Control	2
PHYS1000	Fundamentals of Physics	2
	or	
PHYS2001	Introductory Physics	3
	Technical Studies Electives	4

Total Credits 16

Fourth Semester

ARET1170	Troubleshooting Mechatronic Systems	3
ARET2101	Advanced Automation Controls	3
ARET2111	Advanced Programmable Logic Controllers	3
ARET2150	Engineering Design and Fabrication	2
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1

Total Credits 14

Technical Studies Electives

Any Automation Robotics Engineering Technology (ARET) course that is not required for this award may be used as an elective.

	Recommended:	
ARET1900	Specialized Lab	1 - 4
ARET2181	Internship	1 - 4
ARET2500	Industrial Networks	2
ARET2540	Project Management for Manufacturing	2
ARET2560	Instrumentation and Process Control I	3
CMAE1510	Print Reading	2
CMAE1514	Safety Awareness	2
CMAE1528	360 Career Success Skills	1
	or	
ENGC1250	SolidWorks I	4

Choose a Total of: 8 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/29/2020 : BP / EP 4005

Controls Engineering Technician (EP) Diploma

Overview and Award Outcomes

Overview

The Controls Engineering Technician Diploma degree emphasis is a 60-credit program. The program combines a thorough understanding of how computers and machines communicate as well as system level troubleshooting, Mechatronics systems, Robotic systems, Machine Vision Systems and a solid education in electrical engineering technology fundamentals. Students are prepared to install Mechatronics systems and how to analyze and implement feedback control systems (automation). The emphasis of this program is on the Electronic Control systems utilized in a modern manufacturing facility and on Packaging Equipment.

Award Outcomes

Diagnose and solve root problems to ensure production flow is maintained.
Utilize local area network for remote system control.
Apply technical documents to the installation and troubleshooting of automated packaging equipment.
Manipulate objects and dimensions in engineering drawings and electrical schematics.
Appraise operations for adherence to safety standards.
Administer controllers to for single and multiple variable systems control.
Appraise control equipment and systems for applications and operations in automation and packaging systems.
Utilize project management practices for the life cycle of automation and packaging equipment.
Integrate automated systems into new and existing packaging and manufacturing lines.

Career Opportunities

Career opportunities are wide-spread in Minnesota and throughout the United States. Extensive opportunities exist as Electrical and Electronics Technicians for industrial equipment, Industrial Machinery Mechanics, Industrial Engineering Technicians, Mechanical Engineering Technicians, and as Packaging Technicians.

Program Requirements

Technical Studies Required 54 Credits

ARET1126	Mechanical Power Transmission	3
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2101	Advanced Automation Controls	3
ARET2111	Advanced Programmable Logic Controllers	3
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1
ARET2500	Industrial Networks	2
ARET2540	Project Management for Manufacturing	2
ARET2560	Instrumentation and Process Control I	3
ARET2580	Instrumentation and Process Control II	3
ENGC1250	SolidWorks I	4

General Education Required 6 Credits

ENGL2125	Technical Writing or MnTC Goal Area 1	3
MATH2050	Applications of Quantitative Reasoning or	3
MATH2200	College Algebra	4

	or MnTC Goal Area 4	

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARET1126	Mechanical Power Transmission	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
MATH2050	Applications of Quantitative Reasoning or	3
MATH2200	College Algebra or Any course from MnTC Goal Area 4	4

Total Credits 14

Second Semester

ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1180	Industrial Electricity and Electronics II	3
ARET2111	Advanced Programmable Logic Controllers	3
ENGL2125	Technical Writing or Any course from MnTC Goal Area 1	3

Total Credits 15

Third Semester

ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
ARET1185	Sensor Applications	2
ARET2500	Industrial Networks	2
ARET2560	Instrumentation and Process Control I	3
ENGC1250	SolidWorks I	4

Total Credits 17

Fourth Semester

ARET1170	Troubleshooting Mechatronic Systems	3
ARET2101	Advanced Automation Controls	3
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1
ARET2540	Project Management for Manufacturing	2
ARET2580	Instrumentation and Process Control II	3

Total Credits 14

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3

COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2000	Introduction to Logic	3

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/30/2020 : BP / EP 4011

Mechatronics (EP) Diploma

Overview and Award Outcomes

Overview

Mechatronics is a rapidly growing field that integrates electronics, mechanics, pneumatics, hydraulics, and computer control systems to create new and improved automated manufacturing production systems. This program is designed for people who are interested in plant maintenance, set up, installation, and assembly. The Mechatronics Certificate program is designed to reinforce the core technical skills and real-world application needed in today's manufacturing environment. Through alignment with PMMI's (The Association for Packaging and Processing Technologies) Mechatronics Certification Program, Hennepin Technical College's Mechatronics Diploma offers a set of stackable credentials that are recognized by the U.S. Department of Labor and endorsed by the National Association of Manufacturer's Skills Certification System. This industry developed, third-party validated, nationally recognized credential is focused on ensuring graduates have the core technical skills with real world application for today's high-tech manufacturing environment. These jobs are found in the packaging, medical, electronics, agriculture, biotechnology, and automotive industries.

Award Outcomes

Apply technical documents to the installation and troubleshooting of automated packaging equipment.
Apply Mechatronics control concepts to automated machinery.
Use technical documents to assemble, install, troubleshoot and repair automated packaging systems.
Diagnose root problems impacting production flow.
Solve root problems to maintain production flow.
Integrate automated systems into new and existing packaging and manufacturing lines.
Perform basic Mechatronics operations in a manufacturing environment.
Apply communication skills to interact with people in business and industry.
Manage time and resources.

Career Opportunities

Career opportunities are wide-spread in Minnesota and throughout the United States. Extensive opportunities exist as Electrical and Electronics Technicians for industrial equipment, Industrial Machinery Mechanics, Industrial Engineering Technicians, Mechanical Engineering Technicians, and as Packaging Technicians.

Program Requirements

Technical Studies Required 54 Credits

..

ARET1126	Mechanical Power Transmission	3
ARET1130	Maintenance Operations	2
ARET1155	Automation Controls	3
ARET1161	Mechatronic Systems	3
ARET1165	Vision Systems for QA/SPC	3
ARET1170	Troubleshooting Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2101	Advanced Automation Controls	3
ARET2105	Fluid Power Motion Control	2
	or	
FLPW1150	Pneumatic Components	4
ARET2111	Advanced Programmable Logic Controllers	3
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1
CMAE1510	Print Reading	2
ENGC1250	SolidWorks I	4
FLPW1101	Fluid Power Technology I	3

FLPW1106	Fluid Power Technology II	4

General Education Required 6 Credits

ENGL2125	Technical Writing	3
	or	
	MnTC Goal Area 1	
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	or	
	MnTC Goal Area 4	

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARET1126	Mechanical Power Transmission	3
ARET1161	Mechatronic Systems	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1200	Introduction to Robotics	2
CMAE1510	Print Reading	2
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	or	
	Any course from MnTC Goal Area 4	

Total Credits 16

Second Semester

ARET1130	Maintenance Operations	2
ARET1155	Automation Controls	3
ARET1180	Industrial Electricity and Electronics II	3
ENGC1250	SolidWorks I	4
ENGL2125	Technical Writing	3
	or	
	Any course from MnTC Goal Area 1	

Total Credits 15

Third Semester

ARET1165	Vision Systems for QA/SPC	3
ARET1185	Sensor Applications	2
ARET1190	Programmable Logic Controllers	3
ARET2105	Fluid Power Motion Control	2
	or	
FLPW1150	Pneumatic Components	4
FLPW1101	Fluid Power Technology I	3

Total Credits 13

Fourth Semester

ARET1170	Troubleshooting Mechatronic Systems	3
ARET2101	Advanced Automation Controls	3
ARET2111	Advanced Programmable Logic Controllers	3
ARET2200	FANUC Robotics Operations	2
ARET2250	FANUC Vision Systems	1
FLPW1106	Fluid Power Technology II	4

Total Credits 16

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

MnTC Goal Area 4

MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2000	Introduction to Logic	3

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/30/2020 : BP / EP 4009

Mechatronics (EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Mechatronics Certificate program is designed to reinforce the core technical skills and real-world application needed in today's manufacturing environment. Through alignment with PMMI's (The Association for Packaging and Processing Technologies) Mechatronics Certification Program, Hennepin Technical College's Mechatronics Certificate offers a set of stackable credentials that are recognized by the U.S. Department of Labor and endorsed by the National Association of Manufacturer's Skills Certification System.

Through a series of assessments that are based on industry-developed competencies, the Mechatronics Certificate and corresponding review courses will help students advance the set of skills needed to gain employment in manufacturing environments. The tests that the courses are aligned with allow both new and incumbent workers—entry-level operator through technologist—to demonstrate the skills needed for high-growth, technology intensive manufacturing jobs. Mechatronics Certificate Review courses are ideal for industrial maintenance staff, as well.

Award Outcomes

Apply electrical and mechanical machine control concepts to automated packaging systems.
Perform basic electrical, electronic, welding, machining, laser, vision system, robotic, and fluid power operations.
Use technical documents to assemble, install, troubleshoot and repair automated packaging systems.
Diagnose root problems impacting production flow.
Solve root problems to maintain production flow.

Career Opportunities

Career opportunities are wide-spread in Minnesota and throughout the United States. Extensive opportunities exist as Electrical and Electronics Technicians for industrial equipment, Industrial Machinery Mechanics, Industrial Engineering Technicians, Mechanical Engineering Technicians, and as Packaging Technicians.

Program Requirements

Technical Studies Required 17 Credits

ARET1185	Sensor Applications	2
ARET2300	Mechanical Components I Certificate Review	3
ARET2320	Industrial Electricity I Certificate Review	3
ARET2330	Industrial Electricity II Certificate Review	3
ARET2340	Programmable Logic Controllers I Certificate Review	3
ARET2360	Automated Fluid Power I Certificate Review	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 17

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Automation Technologies (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide students with knowledge of manufacturing processes and plant operations, along with an advanced skill set in electronic and automation systems. Students will engage in coursework topics of technical mathematics, introductory computer skills, print interpretation, manufacturing processes, quality control, maintenance and safety. Also included in coursework is an advanced skill set of AC/DC power, digital electronics, analog circuits, and motor controls.

This 30 credit certificate offers courses designed to start students on a career pathway in automation technologies. Building off the seven courses in Production Technologies focusing on core skills, students build an advanced automation skill set with hands-on experience in: AC Power, Digital electronics, Analog circuits, and Motor controls. If you have completed the Production Technologies Certificate, you only have five additional courses to complete. Along with the core knowledge provided by the production technology courses, students will gain skills that provide them with the abilities and knowledge to work in automation. The Automation Technologies Certificate is a great way to start building a manufacturing career with no dead-ends.

For additional information on this award and the 360 Degree programs please go to: www.360etech.org

Award Outcomes

Identify and apply appropriate safety procedures.
Apply knowledge and skills in electrical systems.
Use and understand test equipment for analysis.
Design, build, and troubleshoot circuits.
Analyze and apply specific manufacturing process procedures.
Identify and apply specific quality procedures.
Interpret symbols and blueprints accurately for a variety of projects.

Career Opportunities

According to Minnesota's Department of Employment and Economic Development, manufacturers are projected to have over 1,500 jobs available in automation, machining, and welding each year for the next 10 years, and those projects are expected to grow.

Program Requirements

Technical Studies Required 30 Credits

CMAE1502	360 Technical Mathematics	3
CMAE1506	360 Introduction to Computers	2
CMAE1510	Print Reading	2
CMAE1514	Safety Awareness	2
CMAE1518	Manufacturing Processes and Production	2
CMAE1522	Quality Practices	2
CMAE1526	Maintenance Awareness	2
ARET1140	Computer Integrated Manufacturing	3
ARET1155	Automation Controls	3
ARET1175	Industrial Electricity and Electronics I	3
ARET1180	Industrial Electricity and Electronics II	3
ARET1190	Programmable Logic Controllers	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Production Technologies (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide students with the training, education, and skills to build a base knowledge of manufacturing processes and plant operations, generally for entry-level positions. Graduates can use the knowledge gained in this Certificate to build upon a manufacturing career path leading to higher-level careers like Automation, Machining, and Welding. Students will engage in coursework topics of career success skills, technical mathematics, introductory computer skills, print interpretation, manufacturing processes, quality control, maintenance, and safety.

The nationwide Manufacturing Skills Standards Council (MSSC) System, based upon industry-defined and federally-endorsed national standards, offers both entry-level and incumbent workers the opportunity to demonstrate that they have acquired the skills increasingly needed in the high-growth, technology-intensive jobs of the 21st century. The MSSC System awards certificates to individuals who pass any of its four Production modules: Safety; Quality Practices & Measurement; Manufacturing Processes & Production; and Maintenance Awareness and a full Certified Production Technician (CPT) Certification to those who pass all four. Students completing the Production Technologies Certificate will have gained the knowledge required to pass the MSSC full-certified Production Technician Certification.

For additional information on this award and the 360 Degree programs please go to: www.360etech.org

Award Outcomes

Identify and apply appropriate safety procedures.
Use technical mathematics to solve problems.
Demonstrate use of common computer software.
Analyze and apply specific manufacturing process procedures.
Identify and apply specific quality procedures.
Interpret symbols and blueprints accurately for a variety of projects.
Identify appropriate and inappropriate professional behavior.

Career Opportunities

According to Minnesota's Department of Employment and Economic Development, manufacturers are projected to have over 1,500 jobs available in automation, machining, and welding each year for the next 10 years, and those projects are expected to grow.

Program Requirements

Technical Studies Required 16 Credits

CMAE1502	360 Technical Mathematics	3
CMAE1506	360 Introduction to Computers	2
CMAE1510	Print Reading	2
CMAE1514	Safety Awareness	2
CMAE1518	Manufacturing Processes and Production	2
CMAE1522	Quality Practices	2
CMAE1526	Maintenance Awareness	2
CMAE1528	360 Career Success Skills	1

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Electronics Technology

Electronics Technology (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Electronics Technician is an important member of the technical team. Their job as part of the team is to work with engineers and other professionals in the design, manufacture, testing, repair and maintenance of technical systems. There is a wide variety of job situations the technician will encounter. These may include repairing equipment or testing systems while working in the plant or in the field. The Electronics Technician may be required to have extensive software skills in addition to their electronic skills. Some positions may require travel, lifting and working with people from other companies to complete the task.

The skills the technician needs to bring to the team are the ability to analyze circuits or systems and work with tools and test equipment. Other important qualities are the desire to be part of a professional team, good communication skills and the ability to work under supervision or independently.

Graduates who choose the A.A.S. degree usually have a future goal of a four-year degree in Engineering, Computer Science or other degree that will lead to a higher level of employment.

Award Outcomes

Exhibit professional and ethical behavior.
Apply basic computer skills in a technical setting.
Apply effective team skills in the workplace.
Apply basic mathematical and problem solving skills.
Demonstrate critical thinking skills.
Use electronic simulation software to construct and analyze circuit operation.
Disassemble, reassemble and build electromechanical hardware.
Practice safety in the workplace.
Troubleshoot, repair, test and report on electromechanical equipment.
Use standard electronic test equipment.
Interpret blueprint and electronic schematics.
Apply accurate writing and oral skills.

Career Opportunities

Electronics Technicians are in demand in small to large companies and virtually all government agencies including the Department of Transportation, Federal Aviation Administration and the US Post Office. Technicians may work for the manufacturers, sellers, end users or third party maintenance organizations. Technicians may hold any one of the following job titles: Technical Sales, Troubleshooter, Installer, Support Specialist, Field Service, Depot Repair Technician, Test Technician, Quality Control Technician, Network Technician, Telecommunication Technician or Engineer Assistant.

Program Requirements

Technical Studies Required 51 Credits

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
ELEC1250	Solid State Components and Circuits	5
ELEC1300	Operational Amplifiers	2
ELEC1400	Basic Troubleshooting	3
ELEC1450	Basic Digital Logic	3
ELEC2000	Advanced Digital Circuits I	4
ELEC2020	Advanced Digital Circuits II	3
ELEC2050	Advanced Troubleshooting	4
ELEC2200	Microprocessors and Microcomputers I	4
ELEC2220	Microprocessors and Microcomputers II	4
ELEC2450	Regulated Power Supplies	2
CPLT1100	Computer Essentials	3
	or	
METS1000	Computers in Manufacturing	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2150	Introduction to Statistics	3
	or	
MATH2200	College Algebra	4
PHIL2100	Critical Thinking for College Success	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 6 Credits

Recommended:

ELEC1220	Electronic Soldering and Inspection	2
ELEC1285	Practical Circuit Analysis with Multisim	2
ELEC1375	LabVIEW Fundamentals and Applications	2
ELEC1900	Specialized Lab	1 - 4
ELEC2100	Motor and Motor Controllers	3
ELEC2300	Troubleshooting Computers	3
ELEC2400	Industrial Controls	2
ELEC2420	Telemetry	2

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park Only

First Semester

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC2300	Troubleshooting Computers	3
	Elective	
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2150	Introduction to Statistics	3
	or	
MATH2200	College Algebra	4

Total Credits 17

Second Semester

ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
ELEC1250	Solid State Components and Circuits	5
ELEC1300	Operational Amplifiers	2
ELEC1400	Basic Troubleshooting	3
CPLT1100	Computer Essentials	3
	or	
METS1000	Computers in Manufacturing	3

Total Credits 16

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3

Total Credits 6

Third Semester

ELEC1450	Basic Digital Logic	3
ELEC2000	Advanced Digital Circuits I	4
ELEC2020	Advanced Digital Circuits II	3
ELEC2050	Advanced Troubleshooting	4
	General Education Electives	3

Total Credits 17

Fourth Semester

ELEC2200	Microprocessors and Microcomputers I	4
ELEC2220	Microprocessors and Microcomputers II	4
ELEC2450	Regulated Power Supplies	2
	Technical Studies Electives	3
	General Education Electives	3

Total Credits 16

Technical Studies Electives

Recommended:

ELEC1220	Electronic Soldering and Inspection	2
ELEC1285	Practical Circuit Analysis with Multisim	2
ELEC1375	LabVIEW Fundamentals and Applications	2
ELEC1900	Specialized Lab	1 - 4
ELEC2100	Motor and Motor Controllers	3
ELEC2300	Troubleshooting Computers	3
ELEC2400	Industrial Controls	2
ELEC2420	Telemetry	2

Choose a Total of: 6 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4204 / EP

Electronics Technology (BP) Diploma

Overview and Award Outcomes

Overview

The Electronic Technician is an important member of the technical team. Their job as part of the team is to work with engineers and other professionals in the design, manufacture, testing, repair and maintenance of technical systems. There is a wide variety of job situations the technician will encounter. These may include repairing equipment or testing systems while working in the plant or in the field. The Electronic Technician may be required to have extensive software skills in addition to their electronic skills. Some positions may require travel, lifting and working with people from other companies to complete the task.

The skills the technician needs to bring to the team are the ability to analyze circuits or systems and work with tools and test equipment. Other important qualities are the desire to be part of a professional team, good communication skills and the ability to work under supervision or independently.

Award Outcomes

Exhibit professional and ethical behavior.
Apply basic computer skills in a technical setting.
Apply effective team skills in the workplace.
Apply basic mathematical and problem solving skills.
Demonstrate critical thinking skills.
Use electronic simulation software to construct and analyze circuit operation.
Disassemble, reassemble and build electromechanical hardware.
Practice safety in the workplace.
Troubleshoot, repair, test and report on electromechanical equipment.
Use standard electronic test equipment.
Interpret blueprint and electronic schematics.
Apply accurate writing and oral skills.

Career Opportunities

Electronic Technicians are in demand in small to large companies and virtually all government agencies including the Department of Transportation, Federal Aviation Administration and the US Post Office. Technicians may work for the manufacturers, sellers, end users or third party maintenance organizations. Technicians may hold any one of the following job titles: Technical Sales, Troubleshooter, Installer, Support Specialist, Field Service, Depot Repair Technician, Test Technician, Quality Control Technician, Network Technician, Telecommunication Technician or Engineer Assistant.

Program Requirements

Technical Studies Required 48 Credits

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
ELEC1250	Solid State Components and Circuits	5
ELEC1300	Operational Amplifiers	2
ELEC1400	Basic Troubleshooting	3
ELEC1450	Basic Digital Logic	3
ELEC2000	Advanced Digital Circuits I	4
ELEC2020	Advanced Digital Circuits II	3
ELEC2050	Advanced Troubleshooting	4
ELEC2200	Microprocessors and Microcomputers I	4
ELEC2220	Microprocessors and Microcomputers II	4
ELEC2450	Regulated Power Supplies	2

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
CPLT1100	Computer Essentials	3
	or	
METS1000	Computers in Manufacturing	3

MATH2150	Introduction to Statistics	3
	or	
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

General Education Elective 0 Credits

Technical Studies Elective 8 Credits

	Recommended:	
ELEC1220	Electronic Soldering and Inspection	2
ELEC1285	Practical Circuit Analysis with Multisim	2
ELEC1375	LabVIEW Fundamentals and Applications	2
ELEC1900	Specialized Lab	1 - 4
ELEC2100	Motor and Motor Controllers	3
ELEC2300	Troubleshooting Computers	3
ELEC2400	Industrial Controls	2
ELEC2420	Telemetry	2

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC2300	Troubleshooting Computers	3
	Elective	
	Technical Studies Electives	3

Total Credits 17

Second Semester

ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
ELEC1250	Solid State Components and Circuits	5
ELEC1300	Operational Amplifiers	2
ELEC1400	Basic Troubleshooting	3
CPLT1100	Computer Essentials	3
	or	
METS1000	Computers in Manufacturing	3

Total Credits 16

Third Semester

ELEC1450	Basic Digital Logic	3
ELEC2000	Advanced Digital Circuits I	4
ELEC2020	Advanced Digital Circuits II	3
ELEC2050	Advanced Troubleshooting	4
MATH2150	Introduction to Statistics	3
	or	
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 17

Fourth Semester

ELEC2200	Microprocessors and Microcomputers I	4
ELEC2220	Microprocessors and Microcomputers II	4
ELEC2450	Regulated Power Supplies	2
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	2

Total Credits 14

Technical Studies Electives

Recommended:

ELEC1220	Electronic Soldering and Inspection	2
ELEC1285	Practical Circuit Analysis with Multisim	2
ELEC1375	LabVIEW Fundamentals and Applications	2
ELEC1900	Specialized Lab	1 - 4
ELEC2100	Motor and Motor Controllers	3
ELEC2300	Troubleshooting Computers	3
ELEC2400	Industrial Controls	2
ELEC2420	Telemetry	2

Choose a Total of: 5 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4206 / EP

Electronics Technician (BP) Occupational Certificate

Overview and Award Outcomes

Overview

There is a need in the Electronics Industry for an entry level technician position that requires DC Circuits, AC Circuits and Complex AC Circuits and a basic knowledge of soldering.

Award Outcomes

Apply basic computer skills in a technical setting.
Demonstrate critical thinking skills.
Practice safety in the workplace.
Interpret blueprint and electronic schematics.

Career Opportunities

Allows certificate holders to perform Test Technician jobs.

Program Requirements

Technical Studies Required 13 Credits

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1220	Electronic Soldering and Inspection	2

Technical Studies Elective 3 Credits

Any ELEC course that is not required for this award may be used as an elective.

General Education Required 0 Credits

General Education Electives 0 Credits

Total Associate in Applied Science Degree Credits 16

Semester Sequence - Full-Time

Offered at Brooklyn Park Only

First Semester

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1220	Electronic Soldering and Inspection	2
	Technical Studies Electives	3

Total Credits 16

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4210 / EP

Semester Sequence - Part-Time

Offered at Brooklyn Park Only

First Semester

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4

Total Credits 8

Second Semester

ELEC1100	Complex AC Circuits	3
ELEC1220	Electronic Soldering and Inspection	2
	Technical Studies Electives	3

Total Credits 8

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4210 / EP

Engineering CAD Technology

Engineering CAD Technology (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Engineering CAD Technology degree is designed for students seeking a career in the design and development of manufactured products. Engineering CAD Technicians are specialists in translating the rough sketches, layouts and written specifications of the engineer or more senior designer into a drawing showing complete details and specifications. For nearly every type of fabricated products, from a light fixture to a motorcycle, or a computer monitor to a bridge, a design technician is needed to detail the entire project and its component parts. Strength calculations, product reliability, computer aided design (CAD) and specifications, and cost of materials may also be the responsibilities of the person trained in the occupation.

Award Outcomes

Apply drafting standards to engineering documents.
Prepare orthographic view drawings.
Dimension detail drawings.
Revise detail drawings.
Process engineering changes.
Generate detail drawings from layouts.
Create assembly drawings.
Create solid models.
Capture design intent.
Apply tolerances to drawings.

Career Opportunities

Persons trained in Engineering CAD work for companies which manufacture machinery, electrical equipment, computers, fabricated metal products, and transportation equipment. Others are employed by the government in public works, highway departments, or ordinance plants. Advanced competencies qualify a person for employment in industry as a Engineering CAD Technician. Experienced technicians with CAD skills are in demand.

Program Requirements

Technical Studies Required 54 Credits

ENGC1011	Engineering Drawing	3
ENGC1021	Working Drawings	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1201	Industrial CAD Project	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH1056	Blueprint Reading I	3
METS1000	Computers in Manufacturing	3
METS1020	Industrial Manufacturing Processes	3
METS2000	Engineering Design Principles	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4

PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 3 Credits

ARET1200	Introduction to Robotics	2
ENGC1050	Additive Manufacturing	3
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
FLPW1101	Fluid Power Technology I	3
MACH1205	Machine Tool Technology	3
METS2100	Statics and Strength of Materials	3

Total Associate in Applied Science Degree Credits 72

Semester Sequence - Brooklyn Park

First Semester

ENGC1160	Inventor	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
MACH1056	Blueprint Reading I	3
METS1000	Computers in Manufacturing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4

Total Credits 17

Second Semester

ENGC1100	AutoCAD	4
ENGC1250	SolidWorks I	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
METS1020	Industrial Manufacturing Processes	3

Total Credits 15

Summer Semester

ENGC1050	Additive Manufacturing	3
	(elective)	
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 9

Third Semester

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
ENGC1255	SolidWorks II	4
METS2000	Engineering Design Principles	3

Total Credits 16

Fourth Semester

ENGC1021	Working Drawings	3
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
	General Education Electives	6

Total Credits 15

Technical Studies Electives

Recommended:

ARET1200	Introduction to Robotics	2
ENGC1050	Additive Manufacturing	3
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
FLPW1101	Fluid Power Technology I	3
MACH1205	Machine Tool Technology	3
METS2000	Engineering Design Principles	3

Choose a Total of: 3 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4104 / EP 4105

Semester Sequence - Eden Prairie

First Semester

ENGC1100	AutoCAD	4
ENGC1250	SolidWorks I	4
MACH1056	Blueprint Reading I	3
METS1000	Computers in Manufacturing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4

Total Credits 17

Second Semester

ENGC1011	Engineering Drawing	3
ENGC1050	Additive Manufacturing (elective)	3
ENGC1160	Inventor	4
ENGC1255	SolidWorks II	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4

Total Credits 18

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 6

Third Semester

ENGC1021	Working Drawings	3
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
METS2000	Engineering Design Principles	3

Total Credits 16

Fourth Semester

ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
METS1020	Industrial Manufacturing Processes	3
	General Education Electives	6

Total Credits 15

Technical Studies Electives

Recommended:

ARET1200	Introduction to Robotics	2
ENGC1050	Additive Manufacturing	3
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
FLPW1101	Fluid Power Technology I	3
MACH1205	Machine Tool Technology	3
METS2100	Statics and Strength of Materials	3

Choose a Total of: 3 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4104 / EP 4105

Engineering CAD Technology (BP/EP) Diploma

Overview and Award Outcomes

Overview

The Engineering CAD Technology diploma is designed for students seeking a career in the design and development of manufactured products. Engineering CAD Technicians are specialists in translating the rough sketches, layouts and written specifications of the engineer or more senior designer into a drawing showing complete details and specifications. For nearly every type of fabricated products, from a light fixture to a motorcycle, or a computer monitor to a bridge, a design technician is needed to detail the entire project and its component parts. Strength calculations, product reliability, computer aided design (CAD) and specifications, and cost of materials may also be the responsibilities of the person trained in the occupation.

Award Outcomes

Apply drafting standards to engineering documents.
Prepare orthographic view drawings.
Dimension detail drawings.
Revise detail drawings.
Process engineering changes.
Generate detail drawings from layouts.
Create assembly drawings.
Create solid models.
Capture design intent.
Apply tolerances to drawings.

Career Opportunities

Persons trained in Engineering CAD work for companies which manufacture machinery, electrical equipment, computers, fabricated metal products, and transportation equipment. Others are employed by the government in public works, highway departments, or ordinance plants. Advanced competencies qualify a person for employment in industry as a Engineering CAD Technician. Experienced technicians with CAD skills are in demand.

Program Requirements

Technical Studies Required 54 Credits

ENGC1011	Engineering Drawing	3
ENGC1021	Working Drawings	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1201	Industrial CAD Project	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC2000	Mechanical Design	4
	or	
METS2000	Engineering Design Principles	3
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH1056	Blueprint Reading I	3
METS1020	Industrial Manufacturing Processes	3

General Education Required 8 Credits

COMM1050	Communication in the Workplace	2
MATH1500	Beginning Algebra	3
METS1000	Computers in Manufacturing	3

General Education Elective 0 Credits

Technical Studies Elective 2 Credits

	Recommended:	
ARET1200	Introduction to Robotics	2
FLPW1101	Fluid Power Technology I	3
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
MACH1205	Machine Tool Technology	3
MACH2425	Geometry/Trigonometry for Machinists	2
METS2100	Statics and Strength of Materials	3

Total Diploma Credits 64

Semester Sequence - Brooklyn Park

First Semester

ENGC1160	Inventor	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
MACH1056	Blueprint Reading I	3
METS1000	Computers in Manufacturing	3
MATH1500	Beginning Algebra	3

Total Credits 17

Second Semester

ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1250	SolidWorks I	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
METS1020	Industrial Manufacturing Processes	3

Total Credits 18

Third Semester

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
ENGC1255	SolidWorks II	4
ENGC2000	Mechanical Design	4
	or	
METS2000	Engineering Design Principles	3

Total Credits 16

Fourth Semester

ENGC1021	Working Drawings	3
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	2

Total Credits 13

Technical Studies Electives

Recommended:

ARET1200	Introduction to Robotics	2
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
FLPW1101	Fluid Power Technology I	3
MACH1205	Machine Tool Technology	3
MACH2425	Geometry/Trigonometry for Machinists	2

METS2100	Statics and Strength of Materials	3

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4106 / EP 4107

Semester Sequence - Eden Prairie

First Semester

ENGC1100	AutoCAD	4
ENGC1250	SolidWorks I	4
MACH1056	Blueprint Reading I	3
METS1000	Computers in Manufacturing	3
MATH1500	Beginning Algebra	3

Total Credits 17

Second Semester

ENGC1011	Engineering Drawing	3
ENGC1050	Additive Manufacturing	3
ENGC1160	Inventor	4
ENGC1255	SolidWorks II	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4

Total Credits 18

Third Semester

ENGC1021	Working Drawings	3
ENGC2011	Special Fields of Drafting	3
ENGC2075	Engineering Design Project	3
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
METS2000	Engineering Design Principles	3

Total Credits 16

Fourth Semester

ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
METS1020	Industrial Manufacturing Processes	3
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	2

Total Credits 13

Technical Studies Electives

Recommended:

ARET1200	Introduction to Robotics	2
ENGC1900	Specialized Lab	1 - 4
ENGC2050	AutoCAD Upgrade Training	1
ENGC2200	Engineering CAD Technology Internship	3 - 4
FLPW1101	Fluid Power Technology I	3
MACH1205	Machine Tool Technology	3
MACH2425	Geometry/Trigonometry for Machinists	2
METS2100	Statics and Strength of Materials	3

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4106 / EP 4107

3D Printing System Maintenance (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The 3D Printing System Maintenance Certificate is designed for students seeking employment as field service technicians for additive manufacturing machines. These technicians will install new 3D printers, provide phone support to customers, troubleshoot mechanical and electrical problems, and provide routine maintenance for 3D printing equipment. Generally, the technician will be sent to a customer site to complete the work.

Award Outcomes

Create solid models.
Build prototypes using additive manufacturing.
Investigate 3D printing material.
Solve problems with mechanical systems in 3D printers.
Solve problems with electrical systems in 3D printers.

Career Opportunities

A graduate with this certificate would be employed at 3D printing sales offices or at manufacturing firms that have many 3D printers. Additionally, graduates may be employed at a 3D printer manufacturer doing assembly of mechanical and electrical systems. Job titles for this area include field service technician, sales support, customer support engineer, and production assembler.

Program Requirements

Technical Studies Required 13 Credits

ARET1125	Power Transmission and Mechanical Systems - Replaced with ARET1126	4
ARET1175	Industrial Electricity and Electronics I	3
ENGC1050	Additive Manufacturing	3
PLST1041	Introduction to Plastics Molding Processes	3

Technical Studies Elective 4 Credits

Recommended:

ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4

General Education Required 0 Credits

General Education Elective 0 Credits

Total Advanced Technical Certificate Credits 17

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Additive Manufacturing Designer (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Additive Manufacturing Designer Certificate is for anyone interested in 3D printing. Students enrolled in either Engineering CAD or Interactive Design and Video Production would be able to create prototypes of their 3D work. The coursework is project based and emphasis will be placed on creating printable objects. Coursework will include 3D scanning, solid modeling, and finishing techniques to create professional models. Specific rules of designing for additive manufacturing will be used to ensure the best possible results for 3D printing. Elective courses can be selected to best suit each students special needs and interests. This certificate prepares students for entry level positions in model shops, 3D printing service bureaus, and engineering departments that use additive manufacturing.

Award Outcomes

Create solid models.
Build prototypes using additive manufacturing.
Solve 3D print quality problems.
Generate 3D scans.
Apply surface treatments to prototype models.

Career Opportunities

A graduate of this program would be employed as a model maker, model finisher, 3D printing operator, 3D printing technician, or additive manufacturing technician. These workers prepare customer data for 3D printing, run the 3D printing machines, perform final finishing operations to the prints, and deliver the finished model to the customer. With additional education in engineering and/or CAD, graduates may also work in engineering departments of manufacturing firms. Students with artistic educational background may use 3D printing technology for dioramas, clothing, jewelry, and sculptures.

Program Requirements

Technical Studies Required 9 Credits

ENGC1050	Additive Manufacturing	3
ENGC1060	Design for Additive Manufacturing	3
ENGC1070	Additive Manufacturing Finishing Techniques	3

Technical Studies Elective 8 Credits

Recommended:

ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MMVP1500	Concepts of Interactive Media	3
MMVP1545	3D Basics	3
MMVP2045	3D Modeling	3

General Education Required 0 Credits

General Education Elective 0 Credits

Total Advanced Technical Certificate Credits 17

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

AutoCAD Operator (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The AutoCAD Operator certificate is designed to provide up-to-date AutoCAD skills for the person already trained or experienced in a technical field. Elective courses can be selected to best suit each students special needs and interests.

Prerequisite: Graduation from or concurrent enrollment in a 2-year Engineering CAD or machining program or a minimum of 2 years of related work experience.

Award Outcomes

Capture design intent.
Create solid models.
Generate drawings from solid models and assemblies.
Apply tolerances to drawings.
Utilize AutoCAD software interface.
Utilize Inventor software interface.

Career Opportunities

Employment opportunities are as limited or as diverse as the student`s individual background. Companies of all types are looking for people with a technical background and AutoCAD skills.

Program Requirements

Technical Studies Required 14 Credits

ENGC1021	Working Drawings	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC2075	Engineering Design Project	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Recommended:

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3
METS1020	Industrial Manufacturing Processes	3

Total Advanced Technical Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ENGC1100	AutoCAD	4
	Technical Studies Electives	3

Total Credits 7

Second Semester

ENGC1021	Working Drawings	3
ENGC1160	Inventor	4
ENGC2075	Engineering Design Project	3

Total Credits 10

Technical Studies Electives

Recommended:

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3
METS1020	Industrial Manufacturing Processes	3

Choose a Total of: 3 Credits

Graduation (17 Credits)

Prerequisite: Graduation from or concurrent enrollment in a 2 year engineering CAD or machining program or a minimum of 2 years of related work experience.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4108 / EP 4109

Pro/ENGINEER Operator (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Pro/ENGINEER Operator Certificate is designed for people with a solid background in mechanical design and/or machining. The coursework is project based and emphasis will be placed on creating solid models, assemblies, and detail drawings.

Prerequisite: Graduation from or concurrent enrollment in a 2-year Engineering CAD or machining program or a minimum of 2 years of related work experience.

Award Outcomes

Capture design intent.
Create solid models.
Generate drawings from solid models and assemblies.
Apply tolerances to drawings.
Utilize Pro/ENGINEER software interface.

Career Opportunities

Most Pro/ENGINEER Operators work in the design or engineering departments of manufacturing facilities creating or changing parametric solid models, assemblies, and detail drawings according to an engineer`s specifications; however, career opportunities are not limited to engineering office jobs. Jobs in this field pay well but are difficult to obtain. Employers prefer students with machining and/or mechanical design experience.

Program Requirements

Technical Studies Required 14 Credits

ENGC1021	Working Drawings	3
ENGC2075	Engineering Design Project	3
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Recommended:

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1201	Industrial CAD Project	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3
METS1020	Industrial Manufacturing Processes	3

Total Advanced Technical Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
	Technical Studies Electives	3

Total Credits 7

Second Semester

ENGC1021	Working Drawings	3
ENGC2075	Engineering Design Project	3
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4

Total Credits 10

Technical Studies Electives

Recommended:

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3
METS1020	Industrial Manufacturing Processes	3

Choose a Total of: 3 Credits

Graduation (17 Credits)

Prerequisite: Graduation from or concurrent enrollment in a 2 year Engineering CAD or machining program or a minimum of 2 years of related work experience.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4110 / EP 4111

SolidWorks Operator (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The SolidWorks Operator Certificate is designed for the person already trained or experienced in a technical field who possesses a solid background in mechanical design and/or machining. The coursework is project based and emphasis will be placed on creating solid models, assemblies, and detail drawings using SolidWorks. Elective courses can be selected to best suit each students special needs and interests.

Prerequisite: Graduation from or concurrent enrollment in a 2-year Engineering CAD or machining program or a minimum of 2 years of related work experience.

Award Outcomes

Capture design intent.
Create solid models.
Generate drawings from solid models and assemblies.
Apply tolerances to drawings.
Utilize SolidWorks software interface.

Career Opportunities

A person with industry experience or a graduate from the Engineering CAD Technology program could use the SolidWorks Operator Certificate to find a career in mechanical drafting or mechanical design using SolidWorks. Workers in those careers prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.

Program Requirements

Technical Studies Required 14 Credits

ENGC1021	Working Drawings	3
ENGC1250	SolidWorks I	4
ENGC1255	SolidWorks II	4
ENGC2075	Engineering Design Project	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1201	Industrial CAD Project	3
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3

Total Advanced Technical Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ENGC1250	SolidWorks I	4
	Technical Studies Electives	3

Total Credits 7

Second Semester

ENGC1021	Working Drawings	3
ENGC1255	SolidWorks II	4
ENGC2075	Engineering Design Project	3

Total Credits 10

Technical Studies Electives

Recommended:

ENGC1011	Engineering Drawing	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1050	Additive Manufacturing	3
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1900	Specialized Lab	1 - 4
ENGC2000	Mechanical Design	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4
MACH2410	CAD/CAM	3
METS1000	Computers in Manufacturing	3

Choose a Total of: 3 Credits

Graduation (17 of Credits)

Prerequisite: Graduation from or concurrent enrollment in a 2 year Engineering CAD or machining program or a minimum of 2 years of work experience.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4112 / EP 4113

Fluid Power Engineering and Motion Control

Fluid Power Engineering Technician (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Fluid Power Engineering Technician A.A.S. degree program prepares individuals to perform high level research and design work. Emphasis is placed on system design, test and evaluation, problem-solving, business communications, system integration, computer-aided circuit construction and programmable logic controls. Technicians design, modify and specify motion controls for today`s high speed production equipment. The program will focus on improving system efficiency through the integration of technology (hydraulics, pneumatics, PLC`s, industrial controls and computers). Individuals with a high mechanical aptitude that enjoy working with their hands as well as their minds should consider this program. This individual must be a people orientated person.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

The fluid power industry is one of the fastest growing technologies today. Technicians will find employment with industries in automation, material handling and processing, heavy equipment, plant automation and fluid power distribution. These opportunities will exist in large and small companies in local as well as international markets. Jobs will include supervision, engineering, inside and outside sales consultant and product development.

Program Requirements

Technical Studies Required 57 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1150	Pneumatic Components	4
	or	
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1231	Industrial Electricity I	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2180	Circuit Design	3

FLPW2191	Industrial Circuit Design	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2301	Mobile Circuit Design	3
FLPW2321	System Engineering Portfolio	3
METS1200	Industry Practices and Procedures	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose six credits from two MnTC Goal Areas 2-10	6

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 72

Semester Sequence - Brooklyn Park

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
FLPW1400	Engineering Drawings and Schematics	4
FLPW2000	Programmable Logic Controllers	3
METS1200	Industry Practices and Procedures	3

Total Credits 16

Second Semester

FLPW1106	Fluid Power Technology II	4
FLPW1191	Hydraulic Components	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
METS2000	Engineering Design Principles	3

Total Credits 16

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	General Education Electives	6

Total Credits 9

Third Semester

FLPW1150	Pneumatic Components	4
	or	
FLPW1181	Pumps, Actuators, and Conductors	4

FLPW2180	Circuit Design	3
FLPW2191	Industrial Circuit Design	3
FLPW2301	Mobile Circuit Design	3
METS2100	Statics and Strength of Materials	3

Total Credits 16

Fourth Semester

FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2321	System Engineering Portfolio	3
	Choose 3 credits from MnTC Goal Areas 2-6	3
	Choose 3 credits from MnTC Goal Areas 7-10	3

Total Credits 15

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4704 / EP 4705

Semester Sequence - Eden Prairie

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1320	Hydraulic Circuits	2
MATH2050	Applications of Quantitative Reasoning (elective)	3
	or	
MATH2200	College Algebra (elective)	4

Total Credits 19

Second Semester

FLPW1231	Industrial Electricity I	3
FLPW1340	Pneumatic Circuits and Air Logic	4
METS1200	Industry Practices and Procedures	3
	Choose 3 credits from MnTC Goal Areas 2-6	3
	Optional:	
FLPW1236	Industrial Electricity II	3
FLPW1150	Pneumatic Components	4

Total Credits 13

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	General Education Electives	3

Total Credits 6

Third Semester

FLPW2000	Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3
	Choose one of the following:	
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4

Total Credits 19

Fourth Semester

FLPW2180	Circuit Design	3
FLPW2191	Industrial Circuit Design	3
FLPW2301	Mobile Circuit Design	3
FLPW2321	System Engineering Portfolio	3
	Choose 3 credits from MnTC Goal Areas 7-10	3
	Optional:	
FLPW2350	Hydraulic Specialist Certification Review	2
FLPW2360	Pneumatic Specialist Certification Review	2

Total Credits 15

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4704 / EP 4705

Fluid Power Engineering Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

Fluid Power Engineering Technicians are responsible for building and modifying fluid power systems. Technicians calculate system parameters, design hydraulic and pneumatic circuits, evaluate operating systems and recommend changes for maximum efficiency. This program will focus on hydraulic and pneumatic component repair and testing, industrial electricity, programmable logic controls, circuit design and system design. Emphasis will be placed on computer-aided circuit construction and software programming of automated systems. Individuals that enjoy working with their hands as well as their minds and have a high mechanical aptitude should consider this program. Technicians must be able to read schematics, determine adjustments to improve system efficiency and recommend circuit changes. Technicians test components and systems, document changes and build new systems.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

Fluid Power Technicians will find employment with fluid power manufacturing companies, sales organizations and distributors. Positions vary from fluid power technician, inside sales consultant, industrial maintenance technician and product testing.

Program Requirements

Technical Studies Required 54 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1231	Industrial Electricity I	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2180	Circuit Design	3
FLPW2191	Industrial Circuit Design	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2301	Mobile Circuit Design	3
FLPW2321	System Engineering Portfolio	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

General Education Required 3 Credits

METS1000	Computers in Manufacturing	3

General Education Elective 3 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 6 Credits

Recommended:

FLPW1150	Pneumatic Components	4
FLPW1236	Industrial Electricity II	3
FLPW1500	Fluid Power Process Lab	1 - 4
FLPW2020	Advanced Programmable Logic Controllers	3
FLPW2350	Hydraulic Specialist Certification Review	2
FLPW2360	Pneumatic Specialist Certification Review	2

Total Diploma Credits 66

Semester Sequence - Brooklyn Park

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
FLPW1400	Engineering Drawings and Schematics	4
FLPW2000	Programmable Logic Controllers	3
METS1000	Computers in Manufacturing	3

Total Credits 16

Second Semester

FLPW1106	Fluid Power Technology II	4
FLPW1191	Hydraulic Components	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
METS2000	Engineering Design Principles	3

Total Credits 16

Summer Semester

	Technical Studies Electives	4

Total Credits 4

Third Semester

FLPW1181	Pumps, Actuators, and Conductors	4
FLPW2180	Circuit Design	3
FLPW2191	Industrial Circuit Design	3
FLPW2301	Mobile Circuit Design	3
METS2100	Statics and Strength of Materials	3

Total Credits 16

Fourth Semester

FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2321	System Engineering Portfolio	3

	Technical Studies Electives	2
	General Education Electives	3

Total Credits 14

Technical Studies Electives

Recommended:

FLPW1150	Pneumatic Components	4
FLPW1236	Industrial Electricity II	3
FLPW1500	Fluid Power Process Lab	1 - 4
FLPW2020	Advanced Programmable Logic Controllers	3
FLPW2350	Hydraulic Specialist Certification Review	2
FLPW2360	Pneumatic Specialist Certification Review	2

Choose a Total of: 6 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 3 Credits

Graduation (66 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020 : BP 4706 / EP 4707

Semester Sequence - Eden Prairie

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3

FLPW1320	Hydraulic Circuits	2
	General Education Electives	3

Total Credits 19

Second Semester

FLPW1150	Pneumatic Components (elective)	4
FLPW1236	Industrial Electricity II (elective)	3
FLPW1231	Industrial Electricity I	3
FLPW1340	Pneumatic Circuits and Air Logic	4
METS1000	Computers in Manufacturing	3

Total Credits 14

Third Semester

FLPW2000	Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3
	Choose one of the following:	
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

Total Credits 19

Fourth Semester

FLPW2180	Circuit Design	3
FLPW2191	Industrial Circuit Design	3
FLPW2301	Mobile Circuit Design	3
FLPW2321	System Engineering Portfolio	3
	Optional:	
FLPW2350	Hydraulic Specialist Certification Review	2
	or	
FLPW2360	Pneumatic Specialist Certification Review	2

Total Credits 14

Technical Studies Electives

Recommended:

FLPW1150	Pneumatic Components	4
FLPW1236	Industrial Electricity II	3
FLPW1500	Fluid Power Process Lab	1 - 4
FLPW2020	Advanced Programmable Logic Controllers	3
FLPW2350	Hydraulic Specialist Certification Review	2
FLPW2360	Pneumatic Specialist Certification Review	2

Choose a Total of: 6 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 3 Credits

Graduation (66 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/17/2020: BP 4706 / EP 4707

Fluid Power Mechanic (BP/EP) Diploma

Overview and Award Outcomes

Overview

The Fluid Power Mechanic fabricates, assembles, repairs and tests hydraulic and pneumatic components. The mechanic must follow instructions, read schematics, read precision measuring devices, record data and analyze test data. This person troubleshoots automated equipment, performs routine maintenance and connects units to automated control systems. Individuals with previous mechanical experience, small engine or automotive backgrounds do extremely well in the Fluid Power Mechanic program.

This program is designed to prepare an individual to meet the challenges of current industry trends. The program courses cover hydraulics, pneumatics, blueprint reading, programmable logic controls and industrial electricity.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.

Career Opportunities

The Fluid Power Mechanic will find employment in hydraulic repair facilities, heavy equipment repair and service and manufacturing (food processing, plastics, printing, precision metal and woodworking industries.)

Program Requirements

Technical Studies Required 30 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1150	Pneumatic Components	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1231	Industrial Electricity I	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3

General Education Required 3 Credits

METS1000	Computers in Manufacturing	3

General Education Elective 1 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 0 Credits

Total Diploma Credits 34

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Hydraulic Engineering Technician (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Hydraulic Engineering Technician A.A.S. degree program prepares individuals to perform high level research and design work utilized in the fluid power industry. Emphasis is placed on hydraulic system design, test and evaluation, problem-solving, business communications, system integration, computer-aided circuit construction and programmable logic controls. Hydraulic Engineering Technicians design, modify and specify motion controls for today's high-speed production equipment. The program will focus on improving hydraulic system efficiency through the integration of technology (hydraulics, PLC's, industrial controls and computers). Individuals with a high mechanical aptitude that enjoy working with their hands as well as their minds should consider this program. This individual must be a people orientated person.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

The fluid power industry is one of the fastest growing technologies today. Hydraulic Engineering Technicians will find employment with industries in automation, material handling and processing, heavy equipment, plant automation and fluid power distribution. These opportunities will exist in large and small companies in local as well as international markets. Jobs will include supervision, hydraulic engineering, inside and outside sales consultant and product development.

Program Requirements

Technical Studies Required 45 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1231	Industrial Electricity I	3
FLPW1236	Industrial Electricity II	3
FLPW1320	Hydraulic Circuits	2
FLPW2000	Programmable Logic Controllers	3
FLPW2180	Circuit Design	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2191	Industrial Circuit Design	3
FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2301	Mobile Circuit Design	3

FLPW2350	Hydraulic Specialist Certification Review	2
METS2100	Statics and Strength of Materials	3

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 9 credits from 2 MnTC Goal Areas 2-10	9

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Hydraulic Engineering Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

Hydraulic Engineering Technicians are responsible for building and modifying hydraulic systems utilized in the fluid power industry. Hydraulic Technicians calculate hydraulic system parameters, design circuits, evaluate operating systems and recommend changes for maximum efficiency. This program will focus on hydraulic component repair and testing, industrial electricity, programmable logic controls, circuit design and system engineering design. Emphasis will be placed on computer-aided circuit construction and software programming of automated systems. Individuals that enjoy working with their hands as well as their minds and have a high mechanical aptitude should consider this program. Hydraulic Engineering Technicians must be able to read various fluid power schematics, determine adjustments to improve system efficiency and recommend circuit changes. Hydraulic Engineering Technicians test hydraulic components and systems, document changes and build new systems.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

Hydraulic Engineering Technicians will find employment with fluid power manufacturing companies, sales organizations and distributors. Positions vary from fluid power technician, inside sales consultant, industrial maintenance technician and product testing.

Program Requirements

Technical Studies Required 58 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1231	Industrial Electricity I	3
FLPW1236	Industrial Electricity II	3
FLPW1320	Hydraulic Circuits	2
FLPW2000	Programmable Logic Controllers	3
FLPW2020	Advanced Programmable Logic Controllers	3
	or	
FLPW2180	Circuit Design	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2191	Industrial Circuit Design	3

FLPW2250	Proportional and Servo Controls (Robotics Application)	3
FLPW2301	Mobile Circuit Design	3
FLPW2321	System Engineering Portfolio	3
FLPW2350	Hydraulic Specialist Certification Review	2
METS1200	Industry Practices and Procedures	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

General Education Required 3 Credits

METS1000	Computers in Manufacturing	3

General Education Elective 3 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 0 Credits

Total Diploma Credits 64

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Industrial Maintenance Mechanic (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Industrial Maintenance Mechanic performs routine maintenance on production equipment such as die casting, plastic manufacturing, food processing, machining and automated woodworking equipment. The job responsibilities include adjusting machines, scheduling preventative maintenance, changing filters, troubleshooting and repairing production machines.

The Industrial Maintenance Mechanic must be able to complete detailed tasks in today`s high speed production environment. The mechanic will read electrical, fluid power and mechanical schematics to ensure machines are operating efficiently.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

Industrial Maintenance Mechanics are employed in the die casting, plastics, food processing, printing, precision metal and woodworking industries. Coursework involves a broad curricula of industrial electricity, hydraulic and pneumatics and blueprint reading. Emphasis will be hands-on training repairing and testing of hydraulic and pneumatic equipment.

Program Requirements

Technical Studies Required 18 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1150	Pneumatic Components	4
	or	
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1231	Industrial Electricity I	3
FLPW1340	Pneumatic Circuits and Air Logic	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 18

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

National Certified Fluid Power Specialist (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

This certificate is designed for students who desire national certification as a Fluid Power Specialist.

Prerequisite: Graduation from the Hydraulic Engineering Technician and Pneumatic Engineering Technician diploma or A.A.S. degree programs.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

Students with this certification are recognized in the industry as possessing the knowledge and skills necessary to perform as an engineering technician in the fluid power industry.

Program Requirements

Technical Studies Required 10 Credits

FLPW2191	Industrial Circuit Design	3
FLPW2321	System Engineering Portfolio	3
FLPW2350	Hydraulic Specialist Certification Review	2
FLPW2360	Pneumatic Specialist Certification Review	2
FLPW2450	Hydraulic Specialist Certification Exam	0
FLPW2460	Pneumatic Specialist Certification Exam	0

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 10

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Pneumatic Engineering Technician (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Pneumatic Engineering Technician A.A.S. degree program prepares individuals to perform high level research and design work utilized in the fluid power industry. Emphasis is placed on pneumatic system design, test and evaluation, problem-solving, business communications, system integration, computer-aided circuit construction and programmable logic controls. Pneumatic Engineering Technicians design, modify and specify motion controls for today's high-speed production equipment. The program will focus on improving pneumatic system efficiency through the integration of technology (pneumatics, PLC's, industrial controls and computers). Individuals with a high mechanical aptitude that enjoy working with their hands as well as their minds should consider this program. This individual must be a people orientated person.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

The fluid power industry is one of the fastest growing technologies today. Pneumatic Engineering Technicians will find employment with industries in automation, material handling and processing, robotics, plant automation and fluid power distribution. These opportunities will exist in large and small companies in local as well as international markets. Jobs will include supervision, pneumatic engineering, inside and outside sales consultant and product development.

Program Requirements

Technical Studies Required 45 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1150	Pneumatic Components	4
FLPW1231	Industrial Electricity I	3
FLPW1236	Industrial Electricity II	3
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3
FLPW2020	Advanced Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2321	System Engineering Portfolio	3
FLPW2360	Pneumatic Specialist Certification Review	2
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 9 credits from 2 MnTC Goal Areas 2-10	9

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Pneumatic Engineering Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

Pneumatic Engineering Technicians are responsible for building and modifying pneumatic systems utilized in the fluid power industry. Pneumatic Engineering Technicians calculate pneumatic system parameters, design circuits, evaluate operating systems and recommend changes for maximum efficiency. This program will focus on pneumatic component repair and testing, industrial electricity, programmable logic controls, circuit design and system engineering design. Emphasis will be placed on computer-aided circuit construction and software programming of automated systems. Individuals that enjoy working with their hands as well as their minds and have a high mechanical aptitude should consider this program. Pneumatic Engineering Technicians must be able to read various fluid power schematics, determine adjustments to improve system efficiency and recommend circuit changes. Pneumatic Engineering Technicians test pneumatic components and systems, document changes and build new systems.

Award Outcomes

Demonstrate teamwork.
Adhere to Occupational Safety & Health Administration (O.S.H.A.) safety guidelines and practices.
Identify components that are utilized in the fluid power industry.
Apply engineering concepts as they relate to fluid power applications.
Employ fluid power best-practices methods when troubleshooting and repairing fluid power systems.
Apply National Electrical Manufacturers Association (N.E.M.A.) and International Electrotechnical Commission (I.E.C.) electrical standards and practices as they relate to electrical concepts and equipment.
Design fluid power systems in accordance with National Fluid Power Association (NFPA) and International Organization for Standardization (ISO) standards and practices.
Utilize calculations as they relate to the design of efficient fluid power applications.
Examine engineering design practices as they relate to the transmission of power.
Develop programmable logic controller (PLC) programs using Boolean algebra methods and computer software applications.
Integrate electrical, programmable logic controller (PLC) and electronic hardware with motion control components.
Instrument fluid power systems.
Utilize data acquisition methods when analyzing fluid power application efficiency.
Incorporate human machine interface (HMI) technologies with fluid power applications.
Produce engineering drawings and schematics using American National Standards Institute (ANSI), International Organization for Standardization (ISO) and industry symbols and standards.
Use applied physics to investigate power transmission methods.
Collaborate with others to create a capstone project that utilizes the engineering portfolio concept.

Career Opportunities

Pneumatic Engineering Technicians will find employment with fluid power manufacturing companies, sales organizations and distributors. Positions vary from fluid power technician, inside sales consultant, industrial maintenance technician and product testing.

Program Requirements

Technical Studies Required 48 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1106	Fluid Power Technology II	4
FLPW1150	Pneumatic Components	4
FLPW1231	Industrial Electricity I	3
FLPW1236	Industrial Electricity II	3
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3
FLPW2020	Advanced Programmable Logic Controllers	3
FLPW2112	Instrumentation of Fluid Power Systems	3
FLPW2321	System Engineering Portfolio	3
FLPW2360	Pneumatic Specialist Certification Review	2
METS1200	Industry Practices and Procedures	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
FLPW1400	Engineering Drawings and Schematics	4

General Education Required 3 Credits

METS1000	Computers in Manufacturing	3

General Education Elective 3 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 10 Credits

Any FLPW course that is not required for this award may be used as an elective.

Total Diploma Credits 64

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Industrial Building Engineering and Maintenance

Industrial Building Engineering and Maintenance (BP) Diploma

Overview and Award Outcomes

Overview

The Industrial Building Engineering and Maintenance diploma provides students with a multi-discipline education in building and machine maintenance technologies. This program will educate the student in various aspects of boiler operation, maintenance carpentry, heating and cooling applications, hydraulic and pneumatic components, industrial electrical and motor control systems, machine-tool processes, welding, fluid conductor application, CAD operation, machine repair and troubleshooting practices.

Award Outcomes

Demonstrate the ability to understand and implement OSHA safety regulations.
Demonstrate teamwork.
Apply electrical concepts as they relate to the installation and troubleshooting analysis of N.E.M.A. and I.E.C. industrial electrical equipment.
Develop the skills necessary to braze and solder fluid conductors.
Develop drawings by using a personal computer and computer aided design (CAD) software.
Interpret blueprints, drawings and schematics.
Utilize calculations as they relate to the design of fluid power systems.
Demonstrate the ability to interpret and troubleshoot hydraulic and pneumatic circuits.
Complete the Environmental Protection Agency certification to handle refrigerants.
Develop programs for programmable logic controllers that meet industry standards.
Demonstrate carpentry finishing skills and techniques.
Demonstrate the ability to construct floor and wall component systems.
Operate welding tools and equipment.
Demonstrate the ability to perform welding techniques.
Demonstrate the ability to perform material handling techniques.

Career Opportunities

The maintenance field is one that offers consistence and long-term employment opportunities. The maintenance of buildings and machines is a vital and ever-present task at all industrial facilities. Career opportunities exist in small and large companies and employment can be found in local as well as in the national markets. The maintenance technician will find jobs that include any or all of these duties: repair and maintenance of the inside and outside of the facility, carpentry, boiler operation, the preservation of heating and air conditioning systems, up-keep of material handling equipment and preventative maintenance and repair of manufacturing machines and related equipment.

Program Requirements

Technical Studies Required 38 Credits

FLPW1101	Fluid Power Technology I	3
FLPW1150	Pneumatic Components	4
FLPW1231	Industrial Electricity I	3
FLPW1236	Industrial Electricity II	3
FLPW1400	Engineering Drawings and Schematics	4
FLPW2000	Programmable Logic Controllers	3
FLPW2020	Advanced Programmable Logic Controllers	3
	or	
FLPW2112	Instrumentation of Fluid Power Systems	3
IBEM1000	Welding Maintenance	3
IBEM1010	Carpentry Maintenance	3
IBEM1020	HVAC Maintenance	3
IBEM1030	Tube and Pipe Repair	2
IBEM1040	Rigging Procedures and Forklift Operations	1
MACH1205	Machine Tool Technology	3

General Education Required 5 Credits

MATH1007	Math for the Trades	2

METS1000	Computers in Manufacturing	3

General Education Elective 0 Credits

Technical Studies Elective 1 Credits

Any FLPW, MACH, METS, PLST, or WLDG course that is not required for this award may be used as an elective.

Total Diploma Credits 44

Semester Sequence

Offered at Brooklyn Park Only

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
FLPW1400	Engineering Drawings and Schematics	4
FLPW2000	Programmable Logic Controllers	3
IBEM1000	Welding Maintenance BPC Only	3

Total Credits 16

Second Semester

FLPW1236	Industrial Electricity II	3
FLPW2020	Advanced Programmable Logic Controllers or	3
FLPW2112	Instrumentation of Fluid Power Systems	3
MACH1205	Machine Tool Technology BPC Only	3
METS1000	Computers in Manufacturing	3
MATH1007	Math for the Trades	2

Total Credits 14

Summer Semester (BPC Campus Only)

FLPW1150	Pneumatic Components	4
IBEM1010	Carpentry Maintenance BPC Only	3
IBEM1020	HVAC Maintenance BPC Only	3
IBEM1030	Tube and Pipe Repair BPC Only	2
IBEM1040	Rigging Procedures and Forklift Operations BPC Only	1
	Technical Studies Electives	1

Total Credits 14

Technical Studies Electives

Any Fluid Power (FLPW), Machine Tool (MACH), Manufacturing Engineering Technology (METS), Plastics Engineering Technology (PLST), or Welding (WLDG) course that is not required for this award may be used as an elective.

Choose a Total of: 1 Credit

Graduation (44 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4804 / EP

Machine Tool Technology & Quality Assurance

Tool and Die/Moldmaking (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Diemakers are machinists with additional skills in designing and constructing metal-stamping dies. They build the dies that mass-produce parts for many industries including small appliances, computers, automobiles, and aircraft. Diemakers use both manual and computer-controlled machine tools to build intricate and close tolerance dies. Diemakers need those skills to work to close tolerances, interpret blueprints, and follow detailed instructions.

Moldmakers are machinists with additional skills in the design and construction of plastic injection molds. They build the molds that mass-produce the plastic products that make our high-tech world possible. The molding process produces products ranging from pens to automobile parts to medical implants. Moldmakers use both manual and computer-controlled machine tools to build plastic injection molds that require intricate 3-dimensional shapes and close tolerances. Moldmakers must be able to visualize 3-dimensional objects from a blueprint, pay attention to details, and work to close tolerances.

Award Outcomes

Apply precision measurement techniques.
Demonstrate sawing procedures.
Demonstrate drilling procedures.
Demonstrate grinding procedures.
Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Apply heat treating principles.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

Career opportunities are available for these highly-skilled professionals. Tool and Die/Moldmakers work in both small and large companies. The Tool and Die/Moldmakers skills qualify him/her for good pay and jobs that encourage creativity and innovation. Opportunities exist to move into management positions or start a business.

Program Requirements

Technical Studies Required 50 Credits

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1120	Turning Technology II	3
MACH1125	Milling Technology I	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2450	Fundamentals of EDM	2
MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3
MACH2500	Introduction to Swiss-Style Machining	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 7 Credits

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2415	CNC Milling	3
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Total Associate in Applied Science Degree Credits 72

Semester Sequence - Full-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4

Total Credits 17

Second Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
	Technical Studies Electives	4

Total Credits 15

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	General Education Electives	3

Total Credits 6

Third Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
	Technical Studies Electives	3
	General Education Electives	3

Total Credits 17

Fourth Semester

MACH2450	Fundamentals of EDM	2
MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3
MACH2500	Introduction to Swiss-Style Machining	3
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 17

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2415	CNC Milling	3
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 7 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4305 / EP

Semester Sequence - Part-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2

Total Credits 8

Second Semester

MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH1135	Precision Grinding	2

Total Credits 8

Summer Semester

MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	General Education Electives	3

Total Credits 6

Third Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1140	Introduction to CNC	3

Total Credits 9

Fourth Semester

MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
	Technical Studies Electives	4

Total Credits 9

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 3

Fifth Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2450	Fundamentals of EDM	2

Total Credits 8

Sixth Semester

MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3

Total Credits 9

Summer Semester

PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 3

Seventh Semester

MACH2500	Introduction to Swiss-Style Machining	3
	Technical Studies Electives	3
	General Education Electives	3

Total Credits 9

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2415	CNC Milling	3
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 7 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4305 / EP

Computer Numerical Control (CNC) Technician (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

CNC Technicians are machinists with additional skills in programming, setup and operating computer driven machine tools. Most high-tech products including computers, aircraft and medical devices use precision components made on CNC machine tools. The CNC Technician relies on a strong background of machining skills. These skills include the understanding of machines, tooling, blueprints, and additional methods used to produce and inspect a part. After determining the best manufacturing strategies and selecting tools, a CNC program is developed. CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) software is many times used to assist in developing the CNC program.

Award Outcomes

Apply precision measurement techniques.
Demonstrate sawing procedures.
Demonstrate drilling procedures.
Demonstrate grinding procedures.
Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Apply heat treating principles.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

The successful CNC Technician may start his/her career as a CNC operator and progress to CNC setup, programmer, or inspector. Well paying jobs are available in the medical, aerospace, computer and recreational industries.

Program Requirements

Technical Studies Required 50 Credits

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1120	Turning Technology II	3
MACH1125	Milling Technology I	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2415	CNC Milling	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2440	Quality Assurance	2
MACH2500	Introduction to Swiss-Style Machining	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	

ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 7 Credits

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Total Associate in Applied Science Degree Credits 72

Semester Sequence - Full-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4

Total Credits 17

Second Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
	Technical Studies Electives	4

Total Credits 15

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	General Education Electives	3

Total Credits 6

Third Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2415	CNC Milling	3
MACH2420	Blueprint Reading II for Machinists	2
	General Education Electives	3

Total Credits 17

Fourth Semester

MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2440	Quality Assurance	2
MACH2500	Introduction to Swiss-Style Machining	3
PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3
	Technical Studies Electives	3

Total Credits 17

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2470	Advanced CNC Turning Centers	3
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 7 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4304 / EP

Semester Sequence - Part-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2

Total Credits 8

Second Semester

MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH1135	Precision Grinding	2

Total Credits 8

Summer Semester

MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2200	College Algebra	4
	General Education Electives	3

Total Credits 6

Third Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1140	Introduction to CNC	3

Total Credits 9

Fourth Semester

MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
	Technical Studies Electives	4

Total Credits 9

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 3

Fifth Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
	Technical Studies Electives	3

Total Credits 9

Sixth Semester

MACH2415	CNC Milling	3
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3

Total Credits 9

Summer Semester

PHIL2100	Critical Thinking for College Success	3
	or	
PHYS2001	Introductory Physics	3

Total Credits 3

Seventh Semester

MACH2440	Quality Assurance	2
MACH2500	Introduction to Swiss-Style Machining	3
	General Education Electives	3

Total Credits 8

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2470	Advanced CNC Turning Centers	3
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 7 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4304 / EP

Tool and Die/Moldmaking (BP) Diploma

Overview and Award Outcomes

Overview

Diemakers are machinists with additional skills in designing and constructing metal-stamping dies. They build the dies that mass-produce parts for many industries including small appliances, computers, automobiles, and aircraft. Diemakers use both manual and computer-controlled machine tools to build intricate and close tolerance dies. Diemakers need those skills to work to close tolerances, interpret blueprints, and follow detailed instructions.

Moldmakers are machinists with additional skills in the design and construction of plastic injection molds. They build the molds that mass-produce the plastic products that make our high-tech world possible. The molding process produces products ranging from pens to automobile parts to medical implants. Moldmakers use both manual and computer-controlled machine tools to build plastic injection molds that require intricate 3-dimensional shapes and close tolerances. Moldmakers must be able to visualize 3-dimensional objects from a blueprint, pay attention to details, and work to close tolerances.

Award Outcomes

Apply precision measurement techniques.
Demonstrate sawing procedures.
Demonstrate drilling procedures.
Demonstrate grinding procedures.
Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Apply heat treating principles.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

Career opportunities are available for these highly-skilled professionals. Tool and Die/Moldmakers work in both small and large companies. The Tool and Die/Moldmakers skills qualify him/her for good pay and jobs that encourage creativity and innovation. Opportunities exist to move into management positions or start a business.

Program Requirements

Technical Studies Required 52 Credits

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1120	Turning Technology II	3
MACH1125	Milling Technology I	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2450	Fundamentals of EDM	2
MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3
MACH2500	Introduction to Swiss-Style Machining	3

General Education Required 6 Credits

COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3
MATH1500	Beginning Algebra	3
	or	
MATH1650	Mathematical Literacy	4

General Education Elective 0 Credits

Technical Studies Elective 6 Credits

Recommended:

MACH1145	Machinists Reference Materials	1
MACH2415	CNC Milling	3
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2440	Quality Assurance	2
MACH2445	Heat Treating and Metallurgy	2
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
METS1000	Computers in Manufacturing	3
ENGC1250	SolidWorks I	4

Total Diploma Credits 64

Semester Sequence - Full-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3

Total Credits 17

Second Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MATH1500	Beginning Algebra	3
	or	
MATH1650	Mathematical Literacy	4
	Technical Studies Electives	3

Total Credits 17

Third Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2
	Technical Studies Electives	3

Total Credits 16

Fourth Semester

MACH2450	Fundamentals of EDM	2
MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3
MACH2500	Introduction to Swiss-Style Machining	3

Total Credits 14

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2415	CNC Milling	3
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2445	Heat Treating and Metallurgy	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 6 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4307 / EP

Semester Sequence - Part-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2

Total Credits 8

Second Semester

MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH1135	Precision Grinding	2

Total Credits 8

Summer Semester

COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3

Total Credits 3

Third Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MATH1500	Beginning Algebra	3
	or	
MATH1650	Mathematical Literacy	4

Total Credits 9

Fourth Semester

MACH1140	Introduction to CNC	3
MACH2410	CAD/CAM	3
MACH2425	Geometry/Trigonometry for Machinists	2

Total Credits 8

Summer Semester

	Technical Studies Electives	3

Total Credits 3

Fifth Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2450	Fundamentals of EDM	2

Total Credits 8

Sixth Semester

MACH2455	Die/Mold Design	3
MACH2460	Die Construction	3
MACH2465	Mold Construction	3

Total Credits 9

Seventh Semester

MACH2420	Blueprint Reading II for Machinists	2
MACH2500	Introduction to Swiss-Style Machining	3
	Technical Studies Electives	3

Total Credits 8

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2415	CNC Milling	3
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2445	Heat Treating and Metallurgy	2
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 6 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4307 / EP

Computer Numerical Control (CNC) Technician (BP) Diploma

Overview and Award Outcomes

Overview

CNC Technicians are machinists with additional skills in programming, setup and operating computer driven machine tools. Most high-tech products including computers, aircraft and medical devices use precision components made on CNC machine tools. The CNC Technician relies on a strong background of machining skills. This includes the understanding of machines, tooling, blueprints, and additional methods used to produce and inspect a part. After determining the best manufacturing strategies and selecting tools, a CNC program is developed. CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) software is many times used to assist in developing the CNC program.

Award Outcomes

Apply precision measurement techniques.
Demonstrate sawing procedures.
Demonstrate drilling procedures.
Demonstrate grinding procedures.
Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Apply heat treating principles.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

The successful CNC Technician may start his/her career as a CNC operator and progress to CNC setup, programmer, or inspector. Well paying jobs are available in the medical, aerospace, computer and recreational fields.

Program Requirements

Technical Studies Required 52 Credits

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1120	Turning Technology II	3
MACH1125	Milling Technology I	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2415	CNC Milling	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2440	Quality Assurance	2
MACH2500	Introduction to Swiss-Style Machining	3

General Education Required 6 Credits

COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3

MATH1500	Beginning Algebra	3
	or	
MATH1650	Mathematical Literacy	4

General Education Elective 0 Credits

Technical Studies Elective 6 Credits

Recommended:

MACH1145	Machinists Reference Materials	1
MACH2440	Quality Assurance	2
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2470	Advanced CNC Turning Centers	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
METS1000	Computers in Manufacturing	3
ENGC1250	SolidWorks I	4

Total Diploma Credits 64

Semester Sequence - Full-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3

Total Credits 17

Second Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
MATH1500	Beginning Algebra	3
	or	
MATH1650	Mathematical Literacy	4
	Technical Studies Electives	3

Total Credits 17

Third Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2415	CNC Milling	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2

Total Credits 16

Fourth Semester

MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3
MACH2440	Quality Assurance	2

MACH2500	Introduction to Swiss-Style Machining	3
	Technical Studies Electives	3

Total Credits 14

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2470	Advanced CNC Turning Centers	3
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 6 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4306 / EP

Semester Sequence - Part-Time

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2

Total Credits 8

Second Semester

MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH1135	Precision Grinding	2

Total Credits 8

Summer Semester

COMM2050	Interpersonal Communication	3
	or	
ENGL1026	Writing for Careers	3

Total Credits 3

Third Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MATH1500	Beginning Algebra	3
	or	

MATH1650	Mathematical Literacy	4

Total Credits 9

Fourth Semester

MACH1140	Introduction to CNC	3
MACH2410	CAD/CAM	3
MACH2425	Geometry/Trigonometry for Machinists	2

Total Credits 8

Summer Semester

	Technical Studies Electives	3

Total Credits 3

Fifth Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2415	CNC Milling	3

Total Credits 9

Sixth Semester

MACH2420	Blueprint Reading II for Machinists	2
MACH2430	CNC Machining Centers	3
MACH2435	CNC Turning Centers	3

Total Credits 8

Seventh Semester

MACH2440	Quality Assurance	2
MACH2500	Introduction to Swiss-Style Machining	3
	Technical Studies Electives	3

Total Credits 8

Technical Studies Electives

Recommended:

MACH1145	Machinists Reference Materials	1
MACH1900	Specialized Lab	1 - 4
MACH2445	Heat Treating and Metallurgy	2
MACH2450	Fundamentals of EDM	2
MACH2470	Advanced CNC Turning Centers	3
MACH2475	Gibbs CAD/CAM Milling	3
MACH2480	ESPRIT Programming	3
MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3
MACH2625	Computer Analysis of Manufacturing Data	2
METS1000	Computers in Manufacturing	3
ENGC1050	Additive Manufacturing	3
ENGC1250	SolidWorks I	4

Choose a Total of: 6 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4306 / EP

CNC Operator (BP) Occupational Certificate

Overview and Award Outcomes

Overview

CNC operators make precision and intricate parts for many industries including medical, computer, aerospace and recreational industries. They use computer-operated machine tools following explicit specifications to produce components. These components are produced from many types of metals and other materials. CNC operators are skilled workers who can efficiently operate basic CNC machine tools. The successful CNC operator must also be able to read shop drawings and use precision measuring instruments and hand tools. They must have acquired enough knowledge and sound judgment to perform many machining operations. In addition, they should be capable of making mathematical calculations required for machining the required parts. Credits earned for this certificate may be combined with other certificates and courses to earn a diploma.

Award Outcomes

Apply precision measurement techniques.
Demonstrate sawing procedures.
Demonstrate drilling procedures.
Demonstrate grinding procedures.
Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Apply heat treating principles.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

CNC operators are employed in both small and large manufacturing firms that produce durable goods. Excellent opportunities exist for personal and professional growth in this industry.

Program Requirements

Technical Studies Required 25 Credits

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1120	Turning Technology II	3
MACH1125	Milling Technology I	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3

General Education Required 3 Credits

MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

General Education Elective 0 Credits

Technical Studies Elective 2 Credits

Recommended:

MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2440	Quality Assurance	2

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MACH1056	Blueprint Reading I	3
MACH1100	Introduction to Machining Technology	3
MACH1105	Drilling and Sawing Processes	2
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MATH1050	Math Pathways Plus for College and Careers	4
	or	
MATH1060	Math Pathways for College and Careers	3

Total Credits 17

Second Semester

MACH1120	Turning Technology II	3
MACH1130	Milling Technology II	3
MACH1135	Precision Grinding	2
MACH1140	Introduction to CNC	3
	Technical Studies Electives	2

Total Credits 13

Technical Studies Electives

Recommended:

MACH2420	Blueprint Reading II for Machinists	2
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2440	Quality Assurance	2

Choose a Total of: 2 Credits

Graduation (30 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4308 / EP

Quality Assurance (BP) Occupational Certificate

Overview and Award Outcomes

Overview

Quality Assurance (QA) will focus on the planned and systematic activities implemented in a quality system so that quality requirements for a product or service fulfill the goals of the manufacturer and the customer. Students will understand the systematic measurement, comparison with a standard, monitoring of processes and an associated feedback loop that confers error prevention.

Award Outcomes

Apply precision measuring techniques.
Interpret blueprints/drawings.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Demonstrate teamwork.

Career Opportunities

Today's advanced manufacturing facilities require the application of well-developed analytical skills to support the delivery of quality products and services. This program addresses Quality Assurance (QA) and will focus on the planned and systematic activities that are part of a quality system of manufacturing requirements for a product or service.

In addition to the foundational principles which govern advanced manufacturing practices, this certificate includes training that allows students to achieve proficiency in Quality Assurance techniques. Precision Measurement principles are introduced and reinforced through practical, real-world examples. Students will become familiar with equipment and tools such as Coordinate Measuring Machines, utilized in state-of-the art facilities for Quality Assurance and Quality Improvement activities.

If you believe in the idea of "quality in, quality out," and you want to play a vital role in helping an organization achieve success through quality, HTC's Quality Assurance Technician program is the way to realize your goal.

- Quality Assurance Specialist, Inspector, Manufacturing Supervisor, Product Design Engineering, Production Engineering.

Program Requirements

Technical Studies Required 14 Credits

MACH2600	Introduction to Quality Assurance	3
MACH2440	Quality Assurance	2
MACH2610	Inspection Processes	3
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 2 Credits

Any ARET, ELEC, ENGC, FLPW, IBEM, MACH, METS, PLST or WLDG course that is not required for this award may be used as an elective.

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MACH2600	Introduction to Quality Assurance	3
MACH2610	Inspection Processes	3
	Technical Studies Electives	2

Total Credits 8

Second Semester

MACH2440	Quality Assurance	2
MACH2615	Inspection Equipment and Techniques	3
MACH2620	Quality Systems	3

Total Credits 8

Technical Studies Electives

Any Automation Robotics Engineering Technology (ARET), Electronic Technology (ELEC), Engineering CAD Technology (ENGC), Fluid Power Technology (FLPW), Industrial Building Engineering and Maintenance (IBEM), Machine Tool Technology (MACH), Manufacturing Engineering Technology (METS), Plastics Engineering Technology (PLST), or Welding and Metal Fabrication (WLDG) course that is not required for this award may be used as an elective.

Choose a Total of: 2 Credits

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4311 / EP

Computer Numerical Control (CNC) Setup Technician (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

CNC Setup Technicians run computer-controlled machine tools that produce highly precise parts used in many of the products we use on a daily basis. Setup Technicians may tend one machine or several at one time. Setup Technician duties vary from operating the machine to setup of cutting tools, fixtures, programs, and producing the complete part. The CNC Setup Technician Advanced Technical certificate builds upon the skills developed for the CNC Operator certificate with additional training in computer numerical control. Emphasis will be placed on basic programming, editing, and operation of CNC lathes and milling machines.

Prerequisite: Graduation from or concurrent enrollment in a 2-year machine tool program or a minimum or 2 years of related work experience.

Award Outcomes

Demonstrate milling procedures.
Demonstrate turning procedures.
Interpret blueprints/drawings.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Operate CNC machines efficiently.
Demonstrate teamwork.
Develop part designs within a group.

Career Opportunities

Many well-paying jobs are available in medical, aerospace, computer and recreational industries. Completion of this certificate may lead to entry-level employment as a CNC Setup Technician.

Program Requirements

Technical Studies Required 17 Credits

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3
MACH2415	CNC Milling	3
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2435	CNC Turning Centers	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3
MACH2410	CAD/CAM	3

Total Credits 9

Second Semester

MACH2415	CNC Milling	3
MACH2425	Geometry/Trigonometry for Machinists	2
MACH2435	CNC Turning Centers	3

Total Credits 8

Graduation (17 Credits)

Prerequisite: Graduation from or concurrent enrollment in a 2-year machine tool program or a minimum of 2 years of related work experience.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 :BP 4309 / EP

CNC Swiss Turning Center Technician (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Swiss-type lathes are a specialized type of lathe used for machining high precision parts in large quantities. They are capable of producing very small parts with many operations in one chucking. The productivity of the Swiss-type lathe is very high as the machine can perform many operations in one setting that would typically require two or more machines to produce. Swiss-type lathes have been an asset to the growing medical device industry. Production of the tiny implantable, high precision parts made from exotic materials like titanium are a good fit for these machines. Skills needed for setup and operation of Swiss-type lathes include basic machining skills and a knowledge of CNC Swiss-type machining centers.

Prerequisite: Graduation from or concurrent enrollment in a 2-year machine tool program or a minimum of 2 years related work experience.

Award Outcomes

Interpret blueprints/drawings.
Machine parts with tolerance.
Apply math skills necessary for industry requirements.
Operate equipment safely.
Inspect machined parts for tolerance requirements.
Operate CNC machines efficiently.

Career Opportunities

As the products we use everyday decrease in size, the parts that make up those products also get smaller. The growing medical device industry is a good example of the need for tiny sophisticated parts. Producing these parts requires special skills, knowledge and machine tools. Increased global competition in manufacturing also requires increased productivity to remain competitive in the market place. Swiss-type turning centers provide capability and the productivity to produce small high-precision parts efficiently. Demand for machinists with these specialized skills is growing and should continue to increase.

Program Requirements

Technical Studies Required 9 Credits

MACH2500	Introduction to Swiss-Style Machining	3
MACH2505	CNC Swiss-Style Lathe Setup and Operation	3
MACH2510	CNC Swiss-Style Lathe Programming	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 9

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MACH2500	Introduction to Swiss-Style Machining	3
MACH2505	CNC Swiss-Style Lathe Setup and Operation	3

Total Credits 6

Second Semester

MACH2510	CNC Swiss-Style Lathe Programming	3

Total Credits 3

Graduation (9 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/16/2020 : BP 4310 / EP

Mazak CNC Technician (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Mazak CNC (Computer Numerical Control) Technicians are machinists who are experienced in the use of the Mazak brand machine and control system to create parts. Mazak machines are used to make a variety of machined parts for many industries, including but not limited to medical, aerospace, defense, agricultural and automotive. Mazak Technicians have a strong background in machining skills, including tool selection, speeds and feeds, material machinability characteristics, blueprint reading, parts inspection and the use of Mazatrol. Mastery of Mazatrol conversational programming language allows technicians to create accurate machine-readable codes quickly and efficiently.

Prerequisite: Graduation from or concurrent enrollment in a 2-year machine tool program or a minimum of 2 years of related work experience.

Award Outcomes

Demonstrate Mazatrol programming system operation
Operate Mazak control panel
Operate equipment safely
Interpret blueprints/drawings
Program machining center parts using Mazatrol
Program turning center parts using Mazatrol
Program mill parts with CAM software
Machine Mazak lathe parts
Machine Mazak mill parts
Apply precision measurement techniques.
Inspect machined parts for tolerance requirements.
Demonstrate team work

Career Opportunities

The successful Mazak CNC Technician may start his/her career as a Mazak CNC operator and progress to Mazak CNC setup, programmer or inspector. Careers are available in medical, aerospace, defense, automotive and more.

Program Requirements

Technical Studies Required 20 Credits

MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2410	CAD/CAM	3
MACH2420	Blueprint Reading II for Machinists	2
MACH2520	Mazak CNC Mazatrol Programming	3
MACH2525	Mazak CNC Turning Center	3
MACH2530	Mazak CNC Machining Center	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 20

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MACH1140	Introduction to CNC	3
MACH2400	CNC Setup and Operation	3
MACH2420	Blueprint Reading II for Machinists	2

MACH2520	Mazak CNC Mazatrol Programming	3

Total Credits 11

Second Semester

MACH2410	CAD/CAM	3
MACH2525	Mazak CNC Turning Center	3
MACH2530	Mazak CNC Machining Center	3

Total Credits 9

Graduation (20 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/20/2020 : BP 4312 / EP

Manufacturing Engineering Technology

Manufacturing Engineering Technology (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

A manufacturing engineering technician is a professional person who is flexible, self-motivated, team oriented, and capable of assigning as well as following instructions. Manufacturing engineering technicians are called upon to assist engineers in the research, development and the modification of new and current designs, products and processes. Many technicians are involved in the assembly, acceptance testing, and providing field service support for current products. The technician possesses an understanding of CAD drafting, engineering drawings, fluid power fundamentals, instrumentation and data acquisition, industrial electrical applications, machining and tooling principles and precision measurement.

The Manufacturing Engineering Technology A.A.S. degree program provides the student with a multi-discipline skill base and prepares the individual to perform the high level tasks that are required in today`s global manufacturing market. This degree is unique in that it allows the student to receive a broad-based education in the manufacturing environment along with a specialization in one or more of the many areas involved in this field. The student may choose to specialize in automated robotics, electronics, engineering CAD, fluid power, machine tool, plastics technology or welding. This degree is also intended for those seeking career advancement. Students may continue their education and proceed towards a Bachelors in Manufacturing degree which prepares the student for supervisory and management positions.

Award Outcomes

Follow safety guidelines and practices as mandated by O.S.H.A.
Apply electrical concepts as they relate to N.E.M.A. and I.E.C. electrical standards and equipment.
Develop PLC programs using Boolean algebra and software methods.
Produce engineering drawings and schematics using ANSI, ISO and industry symbols and standards.
Problem solve by analyzing data using statistical process control (SPC) and quality assurance (QA) theory and methods.
Utilize data acquisition systems and devices that are prevalent in the manufacturing industries.
Generate drawings with a personal computer and computer aided design (CAD) software.
Analyze fluid power applications in accordance with NFPA and industry standards and practices.
Comprehend terms and methods that are used to communicate between manufacturing industry disciplines.
Examine manufacturing engineering design concepts and processes.
Use applied physics to investigate power transmission methods.
Investigate production models using various data methods.
Utilize software applications commonly found in the manufacturing industry.

Career Opportunities

This is one of the fastest growing areas of employment in manufacturing occupations. There is an extensive shortage of individuals who possess a multi-discipline skill base. Global market competition has directed manufacturing companies to seek out the multi-facet candidate. As a result of these situations, demand for the graduate is extremely high. The employment positions offer excellent opportunities for personal and professional growth. Individuals who seek a career as a manufacturing engineering technician may find jobs in a variety of diverse areas such as: assembly, automation, manufacturing, quality assurance, research and development, design, and field service. Job duties may include supervision, engineering, and product development along with customer relations and travel. Manufacturing Engineering Technicians are in high demand in small to large companies and within various government agencies. The Manufacturing Engineering Technician is well positioned for advancement opportunities as well as long-term employment.

Program Requirements

Technical Studies Required 45 Credits

ENGC1011	Engineering Drawing	3
FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
METS1020	Industrial Manufacturing Processes	3
METS1050	Quality Control	3
METS1200	Industry Practices and Procedures	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3
ARET1140	Computer Integrated Manufacturing	3

	and	
ENGC1050	Additive Manufacturing	3
	or	
MACH1205	Machine Tool Technology	3
	and	
PLST1041	Introduction to Plastics Molding Processes	3

Choose one of the following specializations:

~Automation Robotics Engineering Technology Specialization 15 Credits

ARET1130	Maintenance Operations	2
ARET1155	Automation Controls	3
ARET1165	Vision Systems for QA/SPC	3
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2200	FANUC Robotics Operations	2

~Electronics Technology Specialization 15 Credits

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
	Choose at least one additional credit in ELEC	1

~Engineering CAD Technology Specialization 15 Credits

Choose one of the following:

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4

Choose at least 11 credits from the following:

ENGC1021	Working Drawings	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
ENGC1255	SolidWorks II	4
ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4

~Fluid Power Engineering Technology Specialization 15 Credits

Choose one of the following;

ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4

Choose at least 11 credits from the following:

FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1236	Industrial Electricity II	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3

~Machine Tool Technology Specialization 15 Credits

MACH1056	Blueprint Reading I	3
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3

~Plastics Engineering Technology Specialization 15 Credits

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2011	Extrusion Molding Processes I	3
PLST2017	Extrusion Molding Processes II	4
PLST2035	Medical Device Polymer Processes	3
PLST2128	Injection Molding Process I	4
PLST2138	Injection Molding Process II	4
PLST2143	Injection Molding Process III	4

~Welding and Metal Fabrication Specialization 15 Credits

WLDG1135	Gas Metal Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2
WLDG1220	Gas Tungsten Arc Welding I	3
WLDG1350	Flux Cored Arc Welding I	3
	Choose at least four additional credit in WLDG	4

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
MATH2050	Applications of Quantitative Reasoning	3
	or	
MATH2150	Introduction to Statistics	3
	or	
MATH2200	College Algebra	4
	Choose one course from MnTC Goal Area 2	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
METS1200	Industry Practices and Procedures	3
METS2000	Engineering Design Principles	3
	Choose one of the following if required for your specialization:	
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
	or	
	Choose three credits from your specialization courses	3

Total Credits 15

Second Semester

ENGC1011	Engineering Drawing	3

METS1020	Industrial Manufacturing Processes	3
	Choose one of the following:	
	Brooklyn Park Campus	
MACH1205	Machine Tool Technology	3
	and	
PLST1041	Introduction to Plastics Molding Processes	3
	or	
	Eden Prairie Campus	
ARET1140	Computer Integrated Manufacturing	3
	and	
ENGC1050	Additive Manufacturing	3
	Choose three credits from your specialization courses	3

Total Credits 15

Third Semester

METS1050	Quality Control	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose six credits from your specialization courses	6
	Choose one of the following:	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4

Fourth Semester

METS2100	Statics and Strength of Materials	3
	General Education Electives	6
	Choose three credits from your specialization courses	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3

Total Credits 15

Automation Robotics Engineering Technology Specialization - 15 Credits

ARET1130	Maintenance Operations	2
ARET1155	Automation Controls	3
ARET1165	Vision Systems for QA/SPC	3
ARET1190	Programmable Logic Controllers	3
ARET1200	Introduction to Robotics	2
ARET2200	FANUC Robotics Operations	2

Engineering CAD Technology Specialization - 15 Credits

	Choose one of the following:	
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
	Choose at least eleven credits from:	
ENGC1021	Working Drawings	3
ENGC1041	Geometric Dimensioning & Tolerancing	3
ENGC1201	Industrial CAD Project	3
ENGC1255	SolidWorks II	4

ENGC2110	Advanced Creo Parametric (Pro/ENGINEER)	4

Machine Tool Technology Specialization - 15 Credits

MACH1056	Blueprint Reading I	3
MACH1110	Turning Technology I	3
MACH1125	Milling Technology I	3
MACH2400	CNC Setup and Operation	3
MACH2406	CNC Programming	3

Welding and Metal Fabrication Specialization - 15 Credits

WLDG1135	Gas Metal Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2
WLDG1220	Gas Tungsten Arc Welding I	3
WLDG1350	Flux Cored Arc Welding I	3
	Choose four additional WLDG credits	4

Electronics Technology Specialization - 15 Credits

ELEC1000	DC Circuits	4
ELEC1050	AC Circuits	4
ELEC1100	Complex AC Circuits	3
ELEC1150	Diodes and Rectifiers	2
ELEC1200	Soldering Skills	1
	Choose one additional ELEC credit	1

Fluid Power Specialization - 15 Credits

	Choose one of the following:	
ENGC1100	AutoCAD	4
ENGC1160	Inventor	4
ENGC1250	SolidWorks I	4
ENGC2100	Basic Creo Parametric (Pro/ENGINEER)	4
	Choose at least eleven credits from:	
FLPW1106	Fluid Power Technology II	4
FLPW1181	Pumps, Actuators, and Conductors	4
FLPW1191	Hydraulic Components	3
FLPW1236	Industrial Electricity II	3
FLPW1320	Hydraulic Circuits	2
FLPW1340	Pneumatic Circuits and Air Logic	4
FLPW2000	Programmable Logic Controllers	3

Plastics Engineering Technology Specialization - 15 Credits

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2011	Extrusion Molding Processes I	3
PLST2017	Extrusion Molding Processes II	4
PLST2035	Medical Device Polymer Processes	3
PLST2128	Injection Molding Process I	4
PLST2138	Injection Molding Process II	4
PLST2143	Injection Molding Process III	4

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3

INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020: BP 4504 / EP 4505

Manufacturing Technician (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Manufacturing Technician Certificate provides students with a multi-discipline education in manufacturing technologies. This award will educate the student in various aspects of hydraulic and pneumatic systems, industrial electrical and motor control circuits, machine-tool processes, print and schematic reading and troubleshooting practices. These skills are essential for individuals seeking entry level Manufacturing Engineering Technician positions. While this certificate is unique in that the student receives a broad-based manufacturing education, it is also your gateway to earning an Associate Degree in multiple manufacturing areas. Many of the required courses in this certificate transfer into A.A.S. degrees that specialize in Fluid Power Engineering Technology, Engineering CAD Technology and Plastics Engineering Technology. Individuals wishing to enter production support, research and development and engineering technician positions should consider this certificate.

Award Outcomes

Follow safety guidelines and practices as mandated by O.S.H.A.
Apply electrical concepts as they relate to N.E.M.A. and I.E.C. electrical standards and equipment.
Develop PLC programs using Boolean algebra and software methods.
Problem solve by analyzing data using SPC and QA theory and methods.
Analyze fluid power applications in accordance with NFPA and industry standards and practices.
Comprehend terms and methods that are used to communicate between manufacturing industry disciplines.
Examine manufacturing engineering design concepts and processes.
Use applied physics to investigate power transmission methods.
Investigate production models using various data methods.
Utilize software applications commonly found in the manufacturing industry.

Career Opportunities

Career opportunities for manufacturing engineering technicians are found in a variety of diverse areas such as: assembly, automation, manufacturing, quality assurance, research and development, design, and field service. Job duties may include supervision, engineering, and product development along with customer relations and travel. Manufacturing Technicians are in high demand in small to large companies and within various government agencies. The Manufacturing Engineering Technician is well positioned for advancement opportunities as well as long-term employment

Program Requirements

Technical Studies Required 30 Credits

ENGC1011	Engineering Drawing	3
FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
FLPW2000	Programmable Logic Controllers	3
MACH1205	Machine Tool Technology	3
METS1020	Industrial Manufacturing Processes	3
METS1050	Quality Control	3
METS2000	Engineering Design Principles	3
METS2100	Statics and Strength of Materials	3
PLST1041	Introduction to Plastics Molding Processes	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ENGC1011	Engineering Drawing	3

FLPW1101	Fluid Power Technology I	3
FLPW1231	Industrial Electricity I	3
FLPW2000	Programmable Logic Controllers	3
METS2000	Engineering Design Principles	3

Total Credits 15

Second Semester

MACH1205	Machine Tool Technology	3
METS1020	Industrial Manufacturing Processes	3
METS1050	Quality Control	3
METS2100	Statics and Strength of Materials	3
PLST1041	Introduction to Plastics Molding Processes	3

Total Credits 15

Graduation (30 of Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/24/2020 : BP 4521 / EP 4522

Plastics Engineering Technology

Plastics Engineering Technology (BP) Diploma

Overview and Award Outcomes

Overview

Plastics Technicians are needed for the demands of the rapidly growing plastics forming industry. These demands include the operation of processing equipment and the transforming of polymers (plastics) into usable products.

Plastics personnel perform such operations as compounding materials, molding, forming, troubleshooting, inspecting, testing raw materials and finishing products, assisting in mold design and modification and developing new polymers (plastics) applications. Plastics Technicians acquire an understanding of polymers (plastics) processing equipment and materials.

Award Outcomes

Utilize safe working practices.
Identify steps and procedures in the Injection Molding processes.
Identify steps and procedures in the Extrusion Molding processes.
Perform quality control practices.
Identify steps and procedures in Properties and Tests of Plastics.
Operate various types of plastics manufacturing processes.
Apply principles of Plastics, Chemistry and Ingredients.
Demonstrate good manufacturing practices (GMP).
Demonstrate procedures used for plastics manufacturing processes.
Demonstrate procedures used for plastics manufacturing auxiliary equipment.
Demonstrate Communication in the Workplace.
Demonstrate use of Computers in Manufacturing.

Career Opportunities

There is a wide range of employment as well as advancement opportunities for the individual who seeks a career in the plastics forming industry. Plastics Technicians may find jobs in a variety of diverse areas such as; research and development, manufacturing, design and service. Employment potential lies in the following: supervision, molding technician, material handling, quality control, lab technician, engineering aids and in related areas such as the sale of plastics processing equipment and materials.

Program Requirements

Technical Studies Required 21 Credits

METS1050	Quality Control	3
PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST1041	Introduction to Plastics Molding Processes	3
PLST2007	Properties and Tests of Selected Plastics	4

Select from 12 credits of Injection Molding or 7 credits of Extrusion Molding

PLST2128	Injection Molding Process I	4
PLST2138	Injection Molding Process II	4
PLST2143	Injection Molding Process III	4
	or	
PLST2011	Extrusion Molding Processes I	3
PLST2017	Extrusion Molding Processes II	4

General Education Required 5 Credits

COMM1050	Communication in the Workplace	2
METS1000	Computers in Manufacturing	3

General Education Elective 0 Credits

Technical Studies Elective 10 Credits

Any ARET, ELEC, ENGC, FLPW, MACH, METS, PLST or WLDG course that is not required for this award may be used as an elective.

Recommended:

FLPW2112	Instrumentation of Fluid Power Systems	3

PLST1500	Plastics Processes Lab	1 - 3
PLST1900	Specialized Lab	1 - 4
PLST2030	Systematic Medical Device Protocol	3
PLST2035	Medical Device Polymer Processes	3
PLST2300	Plastics Engineering Technology Internship	4

Total Diploma Credits 36

Semester Sequence

Offered at Brooklyn Park Only

First Semester

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST1041	Introduction to Plastics Molding Processes	3
PLST2007	Properties and Tests of Selected Plastics	4
METS1000	Computers in Manufacturing	3
METS1050	Quality Control	3

Total Credits 17

Second Semester

(Select from 7 Credits of Extrusion Molding or 12 Credits of Injection Molding)

PLST2011	Extrusion Molding Processes I	3
PLST2017	Extrusion Molding Processes II	4
	or	
PLST2128	Injection Molding Process I	4
PLST2138	Injection Molding Process II	4
PLST2143	Injection Molding Process III	4
PLST2300	Plastics Engineering Technology Internship	4
	Elective	
COMM1050	Communication in the Workplace	2
	Technical Studies Electives	6

Total Credits 19

Technical Studies Electives

Any Automation Robotics Engineering Technology (ARET), Electronic Technology (ELEC), Engineering CAD Technology (ENGC), Fluid Power Technology (FLPW), Machine Tool Technology (MACH), Manufacturing Engineering Technology (METS), Plastics Engineering Technology (PLST), or Welding and Metal Fabrication (WLDG) course that is not required for this award may be used as an elective.

Recommended:

FLPW2112	Instrumentation of Fluid Power Systems	3
PLST1500	Plastics Processes Lab	1 - 3
PLST1900	Specialized Lab	1 - 4
PLST2030	Systematic Medical Device Protocol	3
PLST2035	Medical Device Polymer Processes	3
PLST2300	Plastics Engineering Technology Internship	4

Choose a Total of: 10 Credits

Graduation (36 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4404 / EP

Extrusion Molding (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed for individuals requiring skills and knowledge in the Extrusion Molding Processes I, II, related Quality Assurance/Statistical Process Control, properties and tests of selected plastics and thermoplastics used in the plastics (forming) industry will be emphasized.

Award Outcomes

Utilize safe working practices.
Demonstrate good manufacturing practices.
Perform quality control practices.
Apply Principles of Plastics, Chemistry and Ingredients.
Demonstrate procedures used for plastics Extrusion Molding processes.
Demonstrate procedures used for plastics Extrusion Molding auxiliary equipment.
Identify steps and procedures in the Extrusion Molding processes.

Career Opportunities

This certificate is ideal for a new career or upgrading present knowledge and skills.

Program Requirements

Technical Studies Required 18 Credits

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2011	Extrusion Molding Processes I	3
PLST2017	Extrusion Molding Processes II	4
METS1050	Quality Control	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 18

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Injection Molding (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed for individuals requiring knowledge and skills in the Injection Molding Process I, II, and III related Quality Assurance, Statistical Process Control and Properties and tests of selected plastics and thermoplastics used in the plastics (forming) industry will be emphasized.

Award Outcomes

Utilize safe working practices.
Demonstrate good manufacturing practices (GMP).
Perform quality control practices.
Apply principles of Plastics, Chemistry and Ingredients.
Demonstrate procedures used for plastics Injection Molding processes.
Demonstrate procedures used for plastics Injection Molding auxiliary equipment.
Identify steps and procedures in the Injection Molding process.

Career Opportunities

This certificate is ideal for a new career or upgrading present knowledge and skills.

Program Requirements

Technical Studies Required 23 Credits

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2128	Injection Molding Process I	4
PLST2138	Injection Molding Process II	4
PLST2143	Injection Molding Process III	4
METS1050	Quality Control	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 23

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Medical Device Molding (BP) Occupational Certificate

Overview and Award Outcomes

Overview

The Medical Device - Plastics Technology Certificate will prepare students for success in Minnesota's robust medical device industry. Students will gain applied skills and knowledge of: Plastics/Chemistry/Ingredients of Polymers; Properties and Tests; Quality Control, Instrument Sensor Devices; Systematic Medical Device Protocol; and Medical Micro-bore Extrusion Processes. Coursework will focus on the technical understanding and skills development in concepts, principals and specific requirements regarding Food and Drug Administration (FDA) and Good Manufacturing Practices (GMP) that strictly regulate how organizations are to produce medical devices.

Award Outcomes

Obtain FDA & GMP requirements and practices.
Demonstrate proper installation of medical extrusion and injection molding systems.
Demonstrate the ability to apply concepts, principals and requirements in the production of medical devices.
Problem solve using analytical thinking.
Demonstrate quality system practices.
Use process control devices.

Career Opportunities

This Medical Device Molding Certificate is ideal for an individual entering a new career or looking to upgrade their current industry knowledge and skills. Excellent opportunities exist as medical device injection and extrusion molding technicians, which are high-skill and high demand positions in the field of plastics technology.

Program Requirements

Technical Studies Required 17 Credits

METS1050	Quality Control	3
PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2030	Systematic Medical Device Protocol	3
PLST2035	Medical Device Polymer Processes	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 17

Semester Sequence

Offered at Brooklyn Park Only

First Semester

PLST1008	Fundamentals of Plastics/Chemistry/Ingredients	4
PLST2007	Properties and Tests of Selected Plastics	4
PLST2035	Medical Device Polymer Processes	3

Total Credits 11

Second Semester

METS1050	Quality Control	3
PLST2030	Systematic Medical Device Protocol	3

Total Credits 6

Graduation (17 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4410 / EP

Scientific Injection Molding Specialist (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Scientific/Decoupled Injection Molding is a strategy of molding from the “plastics point of view”. Process variables vs. plastics variables are revealed for you to develop, validate and document an optimized molding process. This strategy applies to medical, high-performance and critical tolerance injection molded parts. Emphasis will be targeted toward practical setup procedures that will optimize new or existing overall molding cycles.

Prerequisite: Graduation from or concurrent enrollment in a 1 year Plastics Manufacturing Technology related program or a minimum of 2 years of related work experience in the field of Injection Molding.

Award Outcomes

Demonstrate good manufacturing practices (GMP).
Apply knowledge of materials, part design, molds and machine considerations.
Utilize skills in molding from the “Plastics Point of View”.
Apply universal processing parameters.
Perform Scientific/Decoupled II molding practices.
Perform Scientific/Decoupled III molding practices.
Operate computer data acquisition equipment.
Apply math skills for Scientific/Decoupled molding practices.

Career Opportunities

The new Scientific Injection Molding Certificate provides a scientific molding strategy that the custom, proprietary and medical molding industries are seeking. This certificate is specifically designed for individuals who start up new molds or individuals who must optimize existing molding cycles.

Program Requirements

Technical Studies Required 12 Credits

PLST2240	Scientific Injection Molding I	4
PLST2245	Scientific Injection Molding II	4
PLST2250	Scientific Injection Molding III	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 12

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Welding & Metal Fabrication

Welding (BP) Diploma

Overview and Award Outcomes

Overview

This diploma will provide students with the entry-level skills and knowledge to perform as a shielded metal arc welder (SWAW); gas tungsten arc welder (GTAW) and as a gas metal arc welder (GMAW) with a minimum of supervision in all positions on ferrous and non ferrous metals. You can obtain entry-level employment by just taking a few courses that will lead towards a certificate in MIG or TIG welding. Taking additional courses will provide you with the opportunity for job advancement as a welder. Welding courses are also valuable for persons who have careers or interests that require some welding knowledge.

Award Outcomes

Utilize safe working techniques and practices.
Set-up welding and cutting equipment.
Operate welding and cutting equipment.
Produce welds with the Gas Metal Arc Welding Process in steel.
Produce welds with the Flux Cored Arc Welding process in steel.
Produce welds with the Shielded Metal Arc Welding process in steel.
Produce welds with the Gas Tungsten Arc Welding process in steel, stainless steel, and aluminum.
Interpret blueprints and welding symbols.
Preform basic lay-outs on various materials.
Apply metallurgical principles to welding and fabrication processes.
Determine the quality of welds.
Identify steps and procedures in the Flux Cored Arc Welding process.
Identify steps and procedures in the Shielded Metal Arc Welding process.
Identify steps and procedures in the Gas Metal Arc Welding process.
Identify steps and procedures in Gas Tungsten Arc Welding process.

Career Opportunities

There are many employment opportunities available in the following areas: construction, transportation, manufacturing industry, sheet metal industry, custom job shops, medical/pharmaceutical industry, pipe/tubing, food industry and the aerospace industry.

Program Requirements

Technical Studies Required 46 Credits

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1135	Gas Metal Arc Welding I	3
WLDG1140	Gas Metal Arc Welding II	3
WLDG1165	Gas Metal Arc Welding III	3
WLDG1175	GMAW Fabrication Methods	3
WLDG1182	Blueprint Reading for Welders	2
WLDG1220	Gas Tungsten Arc Welding I	3
WLDG1225	Gas Tungsten Arc Welding II	3
WLDG1235	Gas Tungsten Arc Welding III	3
WLDG1245	GTAW Fabrication Methods	3
WLDG1310	Shielded Metal Arc Welding I	3
WLDG1320	Shielded Metal Arc Welding II	3
WLDG1330	Shielded Metal Arc Welding III	3
WLDG1340	Structural Iron Fabrication Methods	3
WLDG1350	Flux Cored Arc Welding I	3
WLDG1360	Flux Cored Arc Welding II	3

General Education Required 0 Credits

General Education Elective 6 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 3 Credits

Any WLDG course that is not required for this award may be used as an elective.

Recommended:

WLDG1000	Cutting Processes	3
WLDG1100	Oxyacetylene Welding	3
WLDG1500	Welding Process Lab	1 - 3
WLDG1900	Specialized Lab	1 - 4
WLDG2050	Introduction to Automated Cutting and Welding	3

Total Diploma Credits 55

Semester Sequence

Offered at Brooklyn Park Only

First Semester

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1135	Gas Metal Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2
WLDG1220	Gas Tungsten Arc Welding I	3

Total Credits 10

Second Semester

WLDG1140	Gas Metal Arc Welding II	3
WLDG1165	Gas Metal Arc Welding III	3
WLDG1225	Gas Tungsten Arc Welding II	3

Total Credits 9

Third Semester

WLDG1175	GMAW Fabrication Methods	3
WLDG1235	Gas Tungsten Arc Welding III	3
WLDG1310	Shielded Metal Arc Welding I	3

Total Credits 9

Fourth Semester

WLDG1245	GTAW Fabrication Methods	3
WLDG1320	Shielded Metal Arc Welding II	3
WLDG1350	Flux Cored Arc Welding I	3

Total Credits 9

Fifth Semester

WLDG1330	Shielded Metal Arc Welding III	3
WLDG1340	Structural Iron Fabrication Methods	3
WLDG1360	Flux Cored Arc Welding II	3

Total Credits 9

Sixth Semester

	Technical Studies Electives	3
	General Education Electives	6

Total Credits 9

Technical Studies Electives

Recommended:

WLDG1000	Cutting Processes	3
WLDG1100	Oxyacetylene Welding	3
WLDG1500	Welding Process Lab	1 - 3
WLDG1900	Specialized Lab	1 - 4
WLDG2050	Introduction to Automated Cutting and Welding	3

Choose a Total of: 3 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 6 Credits

Graduation (55 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4604 / EP

GMAW Production Welder (MIG) (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide the student with entry-level skills and knowledge to perform as a gas metal arc welder (GMAW) with minimum supervision in all positions in the following areas: production manufacturing, pipe/tubing, food industry, aero space, and ornamental/sculpture, on ferrous and non ferrous metals. You can obtain entry-level employment by just taking a few courses that will lead towards a certificate in MIG or TIG welding. Taking additional courses will provide you with the opportunity for job advancement as a welder. Welding courses are also valuable for persons who have careers or interests that require some welding knowledge.

Award Outcomes

Utilize safe working techniques and practices.
Set-up welding and cutting equipment.
Operate welding and cutting equipment.
Produce welds with the Gas Metal Arc Welding Process in steel.
Interpret blueprints and welding symbols.
Preform basic lay-outs on various materials.
Apply metallurgical principles to welding and fabrication processes.
Determine the quality of welds.
Identify steps and procedures in the Gas Metal Arc Welding process.

Career Opportunities

There are many employment opportunities available in the following areas: construction, machinery manufacturing, sheet metal industry, and custom job shop.

Program Requirements

Technical Studies Required 16 Credits

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1135	Gas Metal Arc Welding I	3
WLDG1140	Gas Metal Arc Welding II	3
WLDG1165	Gas Metal Arc Welding III	3
WLDG1175	GMAW Fabrication Methods	3
WLDG1182	Blueprint Reading for Welders	2

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park Only

First Semester

WLDG1135	Gas Metal Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2

Total Credits 5

Second Semester

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1140	Gas Metal Arc Welding II	3

Total Credits 5

Third Semester

WLDG1165	Gas Metal Arc Welding III	3
WLDG1175	GMAW Fabrication Methods	3

Total Credits 6

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4606 / EP

GTAW Production Welder (TIG) (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide the student with entry-level skills and knowledge to perform as a gas tungsten arc welder (GTAW) with minimal supervision in all positions on ferrous and non ferrous metals. You can obtain entry-level employment by just taking a few courses that will lead towards a certificate in MIG or TIG welding. Taking additional courses will provide you with the opportunity for job advancement as a welder. Welding courses are also valuable for persons who have careers or interests that require some welding knowledge.

Award Outcomes

Utilize safe working techniques and practices.
Set-up welding and cutting equipment.
Operate welding and cutting equipment.
Produce welds with the Gas Tungsten Arc Welding process in steel, stainless steel, and aluminum.
Interpret blueprints and welding symbols.
Preform basic lay-outs on various materials.
Apply metallurgical principles to welding and fabrication processes.
Determine the quality of welds.
Identify steps and procedures in Gas Tungsten Arc Welding process.

Career Opportunities

There are many employment opportunities available in the following areas manufacturing areas: medical/pharmaceutical, pipe/tubing, food and aerospace.

Program Requirements

Technical Studies Required 16 Credits

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1182	Blueprint Reading for Welders	2
WLDG1220	Gas Tungsten Arc Welding I	3
WLDG1225	Gas Tungsten Arc Welding II	3
WLDG1235	Gas Tungsten Arc Welding III	3
WLDG1245	GTAW Fabrication Methods	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park Only

First Semester

WLDG1220	Gas Tungsten Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2

Total Credits 5

Second Semester

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1225	Gas Tungsten Arc Welding II	3

Total Credits 5

Third Semester

WLDG1235	Gas Tungsten Arc Welding III	3

WLDG1245	GTAW Fabrication Methods	3

Total Credits 6

Graduation (16 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4607 / EP

Structural Iron Fabrication and Repair (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This program will provide the student with entry-level skills and knowledge to perform fabrication and repair in the following areas: structural iron fabrication, heavy equipment repair, industrial maintenance and precision layout and design.

Award Outcomes

Utilize safe working techniques and practices.
Set-up welding and cutting equipment.
Operate welding and cutting equipment.
Produce welds with the Flux Cored Arc Welding process in steel.
Produce welds with the Shielded Metal Arc Welding process in steel.
Interpret blueprints and welding symbols.
Preform basic lay-outs on material.
Apply metallurgical principles to welding and fabrication processes.
Determine the quality of welds.
Identify steps and procedures in the Flux Cored Arc Welding process.
Identify steps and procedures in the Shielded Metal Arc Welding process.

Career Opportunities

There are many employment opportunities available in the following industries: agricultural, construction, heavy equipment repair and manufacturing, tank and pressure vessel repair.

Program Requirements

Technical Studies Required 22 Credits

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1182	Blueprint Reading for Welders	2
WLDG1310	Shielded Metal Arc Welding I	3
WLDG1320	Shielded Metal Arc Welding II	3
WLDG1330	Shielded Metal Arc Welding III	3
WLDG1340	Structural Iron Fabrication Methods	3
WLDG1350	Flux Cored Arc Welding I	3
WLDG1360	Flux Cored Arc Welding II	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 22

Semester Sequence

Offered at Brooklyn Park Only

First Semester

WLDG1310	Shielded Metal Arc Welding I	3
WLDG1182	Blueprint Reading for Welders	2

Total Credits 5

Second Semester

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1350	Flux Cored Arc Welding I	3

Total Credits 5

Third Semester

WLDG1320	Shielded Metal Arc Welding II	3
WLDG1360	Flux Cored Arc Welding II	3

Total Credits 6

Fourth Semester

WLDG1330	Shielded Metal Arc Welding III	3
WLDG1340	Structural Iron Fabrication Methods	3

Total Credits 6

Graduation (22 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4605 / EP

Robotic Arc Welding (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate will provide the student with entry-level skills and knowledge to perform as a gas metal arc welder or robotic arc welding operator with minimum supervision. Students will be taught foundational and advanced techniques for programming and troubleshooting robotic welding cells, robot calibration and manipulation as well as integrating the welding power sources with a robotic welder. Students will become familiar with the robotic welding of components and assemblies using ferrous and non-ferrous metals in the aerospace, equipment and production manufacturing industries.

Award Outcomes

Utilize safe working techniques and practices.
Set-up welding and cutting equipment.
Operate robotic welding and cutting equipment.
Produce manual welds with the Gas Metal Arc Welding Process in steel.
Produce welds with a robotic welding cell.
Interpret blueprints and welding symbols.
Perform basic lay-outs on various materials.
Apply metallurgical principles to welding and fabrication processes.
Determine the quality of welds.
Identify steps and procedures in the manual Gas Metal Arc Welding process.
Identify steps and procedures in the robotics Gas Metal Arc Welding process.
Program basic robotic welding equipment.

Career Opportunities

There are many employment opportunities available in the following areas: production manufacturing, machinery manufacturing, sheet metal industry, and in the job shop environment.

Program Requirements

Technical Studies Required 19 Credits

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1135	Gas Metal Arc Welding I	3
WLDG1140	Gas Metal Arc Welding II	3
WLDG1165	Gas Metal Arc Welding III	3
WLDG1182	Blueprint Reading for Welders	2
WLDG2050	Introduction to Automated Cutting and Welding	3
WLDG2055	Advanced Robotic Welding	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 19

Semester Sequence

Offered at Brooklyn Park Only

First Semester

WLDG1010	Practical Application for Estimating and Layout	2
WLDG1135	Gas Metal Arc Welding I	3
WLDG1140	Gas Metal Arc Welding II	3
WLDG1182	Blueprint Reading for Welders	2

Total Credits 10

Second Semester

WLDG1165	Gas Metal Arc Welding III	3
WLDG2050	Introduction to Automated Cutting and Welding	3
WLDG2055	Advanced Robotic Welding	3

Total Credits 9

Graduation (19 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 4608 / EP

Media Communication

Audio Production

Audio Production Specialist (EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Audio engineers record and mix music, narration and sound effects for music and commercial productions, video, television, film and audiovisual projects. They are also involved with mastering and duplication to several audio formats, including compact disk and emerging mediums. Today`s recording engineer needs to be well-versed in digital audio, including disk-based recording, MIDI and SMPTE applications, sampling and traditional analog tape recording technology.

Award Outcomes

Exhibit professional and ethical behavior.
Utilize audio production software and hardware.
Understand MIDI, virtual instruments and synchronization.
Record music sound effects and ADR (automatic dialog replacement) for video (film).
Produce music sound effects and ADR (automatic dialog replacement) for video (film).
Mix music sound effects and ADR (automatic dialog replacement) for video (film).
Understand roles and functions as a part of a production team.
Understand acoustics and studio design.
Record music projects for clients.
Produce music projects for clients.
Mix music projects for clients.
Master music projects for clients.
Understand location recording and sound design skills.

Career Opportunities

Typical entry-level positions are often competitive and may involve long hours. Candidates who strive to advance beyond entry-level status must show a great degree of creativity, motivation and persistence. Well developed interpersonal skills are a must for success.

Entrepreneurism is alive and well in the audio field. Many engineers have secured permanent positions as a result of competent freelance work. Others have built their freelance work into successful businesses. Jobs exist in music and voice recording, location audio for video, corporate media production and live sound reinforcement. Many musicians/engineers specialize in advertising work, composing and recording exclusively for commercials and industrial clients. Relocation may be necessary to pursue your career as an audio recording specialist!

Program Requirements

Technical Studies Required 50 Credits

ARSP1100	Introduction to Recording	3
ARSP1110	Studio Operations	4
ARSP1130	Audio Transducers	3
ARSP1140	Critical Listening	1
ARSP1300	Multitrack Recording Theory I	3
ARSP1310	Multitrack Recording Lab I	3
ARSP1320	Audio Signal Processing	3
ARSP1331	Introduction to MIDI	3
ARSP1351	Music Fundamentals	1
ARSP1500	Multitrack Recording Theory II	3
ARSP1510	Multitrack Recording Lab II	3
ARSP1541	Acoustics and Recording Studio Design	2
ARSP2100	Multitrack Recording Theory III	1
ARSP2111	Multitrack Recording Lab III	3
ARSP2120	Digital Audio Theory (Pro Tools 101/110)	3
ARSP2150	Music Business	2
ARSP2325	Digital Audio Theory II (Pro Tools 201/210M)	3
ARSP2340	Audio Configuration and Troubleshooting	2
ARSP2580	Audio Recording Internship I	2
ARSP2585	Audio Recording Internship II	2

General Education Required 15 Credits

COMM2060	Small Group Communication	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3
PHYS2001	Introductory Physics	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 65

Semester Sequence - Full-Time

Offered at Eden Prairie Only

First Semester

ARSP1100	Introduction to Recording	3
ARSP1110	Studio Operations	4
ARSP1130	Audio Transducers	3
ARSP1140	Critical Listening	1
ARSP1351	Music Fundamentals	1
COMM2060	Small Group Communication	3

Total Credits 15

Second Semester

ARSP1300	Multitrack Recording Theory I	3
ARSP1310	Multitrack Recording Lab I	3
ARSP1320	Audio Signal Processing	3
ARSP1331	Introduction to MIDI	3
ARSP2120	Digital Audio Theory (Pro Tools 101/110)	3

Total Credits 15

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3

Total Credits 6

Third Semester

ARSP1500	Multitrack Recording Theory II	3
ARSP1510	Multitrack Recording Lab II	3
ARSP1541	Acoustics and Recording Studio Design	2
ARSP2325	Digital Audio Theory II (Pro Tools 201/210M)	3
ARSP2340	Audio Configuration and Troubleshooting	2

Total Credits 13

Fourth Semester

ARSP2100	Multitrack Recording Theory III	1
ARSP2111	Multitrack Recording Lab III	3
ARSP2150	Music Business	2
ARSP2580	Audio Recording Internship I	2
ARSP2585	Audio Recording Internship II	2

PHIL2200	Ethics	3
PHYS2001	Introductory Physics	3

Total Credits 16

Graduation (65 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

3/20/2020 : BP / EP 1004

Semester Sequence - Part-Time

Offered at Eden Prairie Only

First Semester

ARSP1100	Introduction to Recording	3
ARSP1110	Studio Operations	4
ARSP1130	Audio Transducers	3

Total Credits 10

Second Semester

ARSP1140	Critical Listening	1
ARSP1300	Multitrack Recording Theory I	3
ARSP1310	Multitrack Recording Lab I	3
ARSP1320	Audio Signal Processing	3

Total Credits 10

Summer Semester

ARSP1331	Introduction to MIDI	3
ARSP1351	Music Fundamentals	1
ARSP2120	Digital Audio Theory (Pro Tools 101/110)	3
PHYS2001	Introductory Physics	3

Total Credits 10

Third Semester

ARSP1500	Multitrack Recording Theory II	3
ARSP1510	Multitrack Recording Lab II	3
ARSP2325	Digital Audio Theory II (Pro Tools 201/210M)	3

Total Credits 9

Fourth Semester

ARSP1541	Acoustics and Recording Studio Design	2
ARSP2100	Multitrack Recording Theory III	1
ARSP2111	Multitrack Recording Lab III	3
ARSP2150	Music Business	2
ARSP2340	Audio Configuration and Troubleshooting	2

Total Credits 10

Summer Semester

ARSP2580	Audio Recording Internship I	2
ARSP2585	Audio Recording Internship II	2
PHIL2200	Ethics	3

Total Credits 9

Fifth Semester

COMM2060	Small Group Communication	3
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3

Total Credits 9

Graduation (65 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

10/20/2020 : BP / EP 1004

Audio Production Specialist (EP) Diploma

Overview and Award Outcomes

Overview

Audio engineers record and mix music, narration and sound effects for music and commercial productions, video, television, film and audiovisual projects. They are also involved with mastering and duplication to several audio formats, including compact disk and emerging mediums. Today`s recording engineer needs to be well-versed in digital audio, including disk-based recording, MIDI and SMPTE applications, sampling and traditional analog tape recording technology.

Award Outcomes

Exhibit professional and ethical behavior.
Utilize audio production software and hardware.
Understand MIDI, virtual instruments and synchronization.
Record music sound effects and ADR (automatic dialog replacement) for video (film).
Produce music sound effects and ADR (automatic dialog replacement) for video (film).
Mix music sound effects and ADR (automatic dialog replacement) for video (film).
Understand roles and functions as a part of a production team.
Understand acoustics and studio design.
Record music projects for clients.
Produce music projects for clients.
Mix music projects for clients.
Master music projects for clients.
Understand location recording and sound design skills.

Career Opportunities

Typical entry-level positions are often competitive and may involve long hours. Candidates who strive to advance beyond entry-level status must show a great degree of creativity, motivation and persistence. Well developed interpersonal skills are a must for success.

Entrepreneurism is alive and well in the audio field. Many engineers have secured permanent positions as a result of competent freelance work. Others have built their freelance work into successful businesses. Jobs exist in music and voice recording, location audio for video, corporate media production and live sound reinforcement. Many musicians/engineers specialize in advertising work, composing and recording exclusively for commercials and industrial clients. Relocation may be necessary to pursue your career as an audio recording specialist!

Program Requirements

Technical Studies Required 52 Credits

ARSP1100	Introduction to Recording	3
ARSP1110	Studio Operations	4
ARSP1130	Audio Transducers	3
ARSP1140	Critical Listening	1
ARSP1300	Multitrack Recording Theory I	3
ARSP1310	Multitrack Recording Lab I	3
ARSP1320	Audio Signal Processing	3
ARSP1331	Introduction to MIDI	3
ARSP1340	Location Recording	2
ARSP1351	Music Fundamentals	1
ARSP1500	Multitrack Recording Theory II	3
ARSP1510	Multitrack Recording Lab II	3
ARSP1541	Acoustics and Recording Studio Design	2
ARSP2100	Multitrack Recording Theory III	1
ARSP2111	Multitrack Recording Lab III	3
ARSP2120	Digital Audio Theory (Pro Tools 101/110)	3
ARSP2150	Music Business	2
ARSP2325	Digital Audio Theory II (Pro Tools 201/210M)	3
ARSP2340	Audio Configuration and Troubleshooting	2
ARSP2580	Audio Recording Internship I	2
ARSP2585	Audio Recording Internship II	2

General Education Required 2 Credits

CCDS1040	Job Seeking Skills	2

General Education Elective 4 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 2 Credits

Any ARSP course that is not required for this award may be used as an elective.

Total Diploma Credits 60

Semester Sequence

Offered at Eden Prairie Only

First Semester

ARSP1100	Introduction to Recording	3
ARSP1110	Studio Operations	4
ARSP1130	Audio Transducers	3
ARSP1140	Critical Listening	1
ARSP1351	Music Fundamentals	1

Total Credits 12

Second Semester

ARSP1300	Multitrack Recording Theory I	3
ARSP1310	Multitrack Recording Lab I	3
ARSP1320	Audio Signal Processing	3
ARSP1331	Introduction to MIDI	3
ARSP1340	Location Recording	2
ARSP2120	Digital Audio Theory (Pro Tools 101/110)	3

Total Credits 17

Third Semester

ARSP1500	Multitrack Recording Theory II	3
ARSP1510	Multitrack Recording Lab II	3
ARSP1541	Acoustics and Recording Studio Design	2
ARSP2325	Digital Audio Theory II (Pro Tools 201/210M)	3
ARSP2340	Audio Configuration and Troubleshooting	2
	Technical Studies Electives	2

Total Credits 15

Fourth Semester

ARSP2100	Multitrack Recording Theory III	1
ARSP2111	Multitrack Recording Lab III	3
ARSP2150	Music Business	2
ARSP2580	Audio Recording Internship I	2
ARSP2585	Audio Recording Internship II	2
CCDS1040	Job Seeking Skills	2
	General Education Electives	4

Total Credits 16

Technical Studies Electives

Any Audio Production Specialist (ARSP) course that is not required for this award may be used as an elective.

Choose a Total of: 2 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

3/20/2020 : BP / EP 1005

Graphic Design and Web Design

Graphic Design: Creative (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Graphic design by definition is the applied art of designing any information, thought, idea or message for print and digital media. Graphic designers skillfully master advanced technology to transform an idea or concept. The transformation procedure is an integral part of the print or digital media production process. Graphic designers have an inherent ability to create by utilizing basic design principles and color theory; applying typographical knowledge and techniques; capturing digital graphic images; and manipulating photos and illustrations through various industry standard software and hardware components. The finished design may be delivered via the printed piece or web.

The field of graphic design is an exciting and challenging career choice, a choice that gives the individual the power to be an effective participant in the world of media communications. This degree is also an excellent stepping-stone for those students who wish to pursue a four-year degree at some point in the future.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of industry standard technology and design.
Develop visual solutions to communicate client's needs.
Exhibit proficient use of technology workflow.
Produce clean proofs and prints for press-ready documents.
Demonstrate the roles and functions of working on a team.
Develop a creative portfolio of work that demonstrates skills as a designer and visual communicator.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, sales, creative production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, print production artist, web designer, web producer, web developer, production artist, advertising artist, art typographer. Common working environments might include design or production, in a corporation, agency, advertising or marketing setting, printing company, or graphics service bureau.

Program Requirements

Technical Studies Required 51 Credits

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1310	InDesign	3
MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP1360	Acrobat	2
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MGDP2010	Applied Graphic Design	3
MGDP2030	Packaging and Display Advertising	3
MGDP2040	Collateral Advertising	3
MGDP2080	Applied Typography	3
MGDP2200	Design Portfolio	3

General Education Required 12 Credits

	Choose one of the following:	
COMM2050	Interpersonal Communication	3

COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3
	Choose any course from MnTC Goal Area 2	3
	Choose any course from MnTc Goal Area 5	3

General Education Elective 3 Credits

Choose three credits from MnTC Goal Areas 3-10

Technical Studies Elective 3 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Associate in Applied Science Degree Credits 69

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1310	InDesign	3
MGDP1360	Acrobat	2

Total Credits 17

Second Semester

MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MGDP2010	Applied Graphic Design	3
MGDP2080	Applied Typography	3
	Choose 3 credits from MnTC Goal Areas 3-10	3

Total Credits 19

Summer Semester

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one course from MnTC Goal Area 2	3

Total Credits 6

Third Semester

MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3

MGDP2040	Collateral Advertising	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 15

Fourth Semester

MGDP2030	Packaging and Display Advertising	3
MGDP2200	Design Portfolio	3
	Technical Studies Electives	3
	Choose one course from MnTC Goal Area 5	3

Total Credits 12

Technical Studies Electives

Any Audio Production (ARSP), IT/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 3 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3

SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (69 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

6/3/2020 : BP 1504 / EP

Graphic Design: Creative (BP) Diploma

Overview and Award Outcomes

Overview

Graphic design by definition is the applied art of designing any information, thought, idea or message for print and digital media. Graphic designers skillfully master advanced technology to transform an idea or concept. The transformation procedure is an integral part of the print or digital media production process.

Graphic designers have an inherent ability to create by utilizing basic design principles and color theory; applying typographical knowledge and techniques; capturing digital graphic images; and manipulating photos and illustrations through various industry standard software and hardware components.

The field of graphic design is an exciting and challenging career choice, a choice that gives the individual the power to be an effective participant in the world of media communications. This diploma prepares you for the creative Graphic Design field that works so closely with printing, web and multi-media industries.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of industry standard technology and design.
Develop visual solutions to communicate client's needs.
Exhibit proficient use of technology workflow.
Produce clean proofs and prints for press-ready documents.
Demonstrate the roles and functions of working on a team.
Develop a creative portfolio of work that demonstrates skills as a designer and visual communicator.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, sales, creative production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, print production artist, web designer, web producer, web developer, production artist, advertising artist, art typographer. Common working environments might include design or production, in a corporation, agency, advertising or marketing setting, printing company, or graphics service bureau.

Program Requirements

Technical Studies Required 51 Credits

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1310	InDesign	3
MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP1360	Acrobat	2
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MGDP2010	Applied Graphic Design	3
MGDP2030	Packaging and Display Advertising	3
MGDP2040	Collateral Advertising	3
MGDP2080	Applied Typography	3
MGDP2200	Design Portfolio	3

General Education Required 9 Credits

ENGL1026	Writing for Careers	3
	Choose one of the following:	

COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

General Education Elective 0 Credits

Technical Studies Elective 4 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1310	InDesign	3
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2

Total Credits 19

Second Semester

MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MGDP2080	Applied Typography	3
ENGL1026	Writing for Careers	3

Total Credits 17

Summer Semester

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

Total Credits 6

Third Semester

MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP2040	Collateral Advertising	3
	Technical Studies Electives	2

Total Credits 14

Fourth Semester

MGDP2030	Packaging and Display Advertising	3
MGDP2200	Design Portfolio	3
	Technical Studies Electives	2

Total Credits 8

Technical Studies Electives

Any Audio Production (ARSP), IT/Computer careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

6/3/2020 : BP 1507 / EP

Graphic Design: Production (BP) Diploma

Overview and Award Outcomes

Overview

This diploma is an in-depth Graphic Design Production that offers the student technical hands-on skills. Upon completion this student will have numerous opportunities for employment in the printing and communications industry. Students will receive industry specific training on software programs designed to produce print media and electronic communications material. Examples of such software include: InDesign, Illustrator, Photoshop and Acrobat. Training will be provided using different computerized systems, printers and desktop scanners to produce basic publications, ads, or print materials. If you are creative and enjoy producing magazine ads, publications, books, brochures and advertisements, forms, business cards, or invitations, this degree is designed for you. This diploma is focused on training the student for the production workforce within the printing and publishing industry.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of industry standard technology and design.
Exhibit use of technology workflow.
Perform troubleshooting strategies.
Produce clean proofs and prints for press-ready documents.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, sales, creative production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, print production artist, web designer, web producer, web developer, production artist, advertising artist, art typographer. Common working environments might include design or production, in a corporation, agency, advertising or marketing setting, printing company, or graphics service bureau.

Program Requirements

Technical Studies Required 44 Credits

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1250	Web Design & Development I	3
MGDP1310	InDesign	3
MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MGDP2040	Collateral Advertising	3
MGDP2080	Applied Typography	3

General Education Required 6 Credits

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

General Education Elective 0 Credits

Technical Studies Elective 4 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Diploma Credits 54

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1010	Basic Drawing	3
MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1310	InDesign	3

Total Credits 15

Second Semester

MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MGDP2080	Applied Typography	3

Total Credits 14

Summer Semester

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

Total Credits 6

Third Semester

MGDP1250	Web Design & Development I	3
MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3

Total Credits 12

Fourth Semester

MGDP2040	Collateral Advertising	3
	Technical Studies Electives	4

Total Credits 7

Technical Studies Electives

Any Audio Production (ARSP), IT/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 4 Credits

Graduation (54 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/13/2020 : BP 1510 / EP

Graphic Design: Web Design (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This degree is designed for individuals who wish to be involved in the design and implementation of web sites. Students will learn user interactivity and basic fundamentals of optimum Internet usage. These concepts are critical to the conception and design of a web site. The navigation, functionality, file size, image generation, and unity of design are stressed. Each student will design and develop a web portfolio or work as an intern in the industry as a requirement for graduation. There is an opportunity in this degree to take electives in Computer Careers or Creative Graphic Design to enhance student skills.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of industry standard technology and design.
Develop solutions that meet client's needs.
Exhibit proficient use of technology workflow.
Produce web sites that meet the industry standards for usability.
Demonstrate use of programming language(s) into web site design.
Demonstrate the roles and functions of working on a team.
Develop a creative portfolio of work that demonstrates skills as a designer and visual communicator.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, web production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, web designer, web producer, web developer. Common working environments might include design or production in a corporation, agency, advertising, marketing, or web design studio.

Program Requirements

Technical Studies Required 51 Credits

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1250	Web Design & Development I	3
MGDP1360	Acrobat	2
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MGDP2010	Applied Graphic Design	3
MGDP2050	Web Design & Development II	3
MGDP2060	Web Design & Development III	3
MGDP2100	Web Design/Production	3
MGDP2200	Design Portfolio	3
MMVP1500	Concepts of Interactive Media	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3

General Education Required 12 Credits

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

Choose one of the following:

ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3
	Choose any course from MnTC Goal Area 2	3
	Choose any course from MnTc Goal Area 5	3

General Education Elective 3 Credits

Choose three credits from MnTC Goal Areas 3-10

Technical Studies Elective 3 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Associate in Applied Science Degree Credits 69

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1250	Web Design & Development I	3
MMVP1500	Concepts of Interactive Media	3
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2

Total Credits 19

Second Semester

MGDP1230	Photoshop	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
	Technical Studies Electives	3

Total Credits 17

Summer Semester

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one course from MnTC Goal Area 2	3

Total Credits 6

Third Semester

MGDP1240	Illustrator	3
MGDP2050	Web Design & Development II	3
MGDP2100	Web Design/Production	3
MMVP2010	JavaScript for Designers	3
	Choose one of the following:	
ENGL2121	Writing and Research	4

ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 15

Fourth Semester

MGDP2060	Web Design & Development III	3
MGDP2200	Design Portfolio	3
	Choose one course from MnTC Goal Area 5	3
	Choose 3 credits from MnTC Goal Areas 3-10	3

Total Credits 12

Technical Studies Electives

Any Audio Production (ARSP), Information Technology/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 3 Credits

General Education Electives

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (69 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

6/3/2020 : BP 1505 / EP

Graphic Design: Web Design (BP) Diploma

Overview and Award Outcomes

Overview

This diploma is designed for individuals who wish to be involved in the design and implementation of web sites. Students will learn user interactivity and basic fundamentals of optimum Internet usage. These concepts are critical to the conception and design of a web site. The navigation, functionality, file size, image generation, and unity of design are stressed. Each student will design and develop a web portfolio or work as an intern in the industry as a requirement for graduation. There is an opportunity in this diploma to take electives in Computer Careers or Creative Graphic Design to enhance student skills.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of web technologies and design.
Develop solutions that meet client's needs.
Exhibit proficient use of technology workflow.
Produce web sites that meet the industry standards for usability.
Demonstrate use of programming language(s) into web site design.
Demonstrate the roles and functions of working on a team.
Develop a creative portfolio of work that demonstrates skills as a designer and visual communicator.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, web production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, web designer, web producer, web developer. Common working environments might include design or production in a corporation, agency, advertising, marketing, or web design studio.

Program Requirements

Technical Studies Required 51 Credits

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1250	Web Design & Development I	3
MGDP1360	Acrobat	2
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MGDP2010	Applied Graphic Design	3
MGDP2050	Web Design & Development II	3
MGDP2060	Web Design & Development III	3
MGDP2100	Web Design/Production	3
MGDP2200	Design Portfolio	3
MMVP1500	Concepts of Interactive Media	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3

General Education Required 9 Credits

ENGL1026	Writing for Careers	3
	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	

PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

General Education Elective 0 Credits

Technical Studies Elective 4 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP1340	Advanced Photoshop	3
MGDP2215	Graphic Design Internship	1 - 12

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1220	Concepts in Creativity	3
MGDP1250	Web Design & Development I	3
MMVP1500	Concepts of Interactive Media	3
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2

Total Credits 19

Second Semester

MGDP1230	Photoshop	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
	Technical Studies Electives	1

Total Credits 15

Summer Semester

	Choose one of the following:	
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
	Choose one of the following:	
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3

Total Credits 6

Third Semester

MGDP1240	Illustrator	3
MGDP2050	Web Design & Development II	3
MGDP2100	Web Design/Production	3
MMVP2010	JavaScript for Designers	3
ENGL1026	Writing for Careers	3

Total Credits 15

Fourth Semester

MGDP1340	Advanced Photoshop	3
	Elective	

MGDP2060	Web Design & Development III	3
MGDP2200	Design Portfolio	3

Total Credits 9

Technical Studies Electives

Any Audio Production (ARSP), IT/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP1340	Advanced Photoshop	3
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice

6/3/2020 : BP 1508 / EP

Production Technician for Digital Publishing (BP) Occupational Certificate

Overview and Award Outcomes

Overview

Ever wonder how to produce a printed flyer, brochure, business card, letterhead or book? This certificate is designed for someone employed or self-employed in the publishing industry. The certificate is for the person who is a writer or works on the fringe of the printing and publishing industry and wants to acquire the skills necessary to produce their own printed materials.

Prerequisites: Testing score equivalent or CPLT1100 Essential Computer Applications, CPLT1200 Introduction to Macintosh.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of industry standard technology and design.
Exhibit use of technology workflow.
Perform troubleshooting strategies.
Produce clean proofs and prints for press-ready documents.

Career Opportunities

Graphic design is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, customer service, customer support, sales, creative production, consulting or training. Occupational titles include but are not limited to creative designer, graphic designer, print production artist, web designer, web producer, web developer, production artist, advertising artist, art typographer. Common working environments might include design or production, in a corporation, agency, advertising or marketing setting, printing company, or graphics service bureau.

Program Requirements

Technical Studies Required 26 Credits

MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1310	InDesign	3
MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3
MGDP2040	Collateral Advertising	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Occupational Certificate Credits 29

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1230	Photoshop	3
MGDP1240	Illustrator	3
MGDP1310	InDesign	3

MGDP1360	Acrobat	2
MGDP2010	Applied Graphic Design	3

Total Credits 14

Second Semester

MGDP1330	Advanced Page Layout	3
MGDP1340	Advanced Photoshop	3
MGDP1350	Advanced Illustrator	3
MGDP2040	Collateral Advertising	3
	Technical Studies Electives	3

Total Credits 15

Technical Studies Electives

Any Audio Production (ARSP), IT/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 3 Credits

Graduation (29 credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/12/2020 : BP 1514 / EP

Basic Web Technologies (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate is designed for the student as an overview of Web Technologies. The coursework is designed to meet the needs of personnel already employed in a related industry who wish to enhance their skills for job advancement, change, or comprehension. Students will complete introductory-level coursework and obtain the skills necessary for them to understand the technologies related to web design and development.

Prerequisite: Basic computer literacy, familiarity with the Internet, college-level reading and communication ability, and proficiency in basic mathematics.

All students must pass the Computer Literacy assessment test before being admitted.

Award Outcomes

Utilize the elements and principles of design.
Integrate the use of web technologies and design.
Exhibit proficient use of technology workflow.
Produce web sites that meet the industry standards for usability.
Demonstrate use of programming language(s).
Demonstrate the roles and functions of working on a team.

Career Opportunities

Web Design and Programming is an ever-changing and evolving professional career with many occupational categories and opportunities. One might find employment in a production environment, web development, web programming, customer service, customer support, sales, creative production, consulting or training.

Program Requirements

Technical Studies Required 27 Credits

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1250	Web Design & Development I	3
MGDP2050	Web Design & Development II	3
MGDP2100	Web Design/Production	3
MMVP1500	Concepts of Interactive Media	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any ARSP, CCIS, MGDP, or MMVP course that is not required for this award may be used as an elective.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1205	Fundamentals of Graphic Design	3
MGDP1210	Graphic Design Essentials	3
MGDP1250	Web Design & Development I	3
MMVP1500	Concepts of Interactive Media	3

MMVP1570	Introduction to Programming for Designers	3

Total credits 15

Second Semester

MGDP2050	Web Design & Development II	3
MGDP2100	Web Design/Production	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3
	Technical Studies Electives	3

Total Credits 15

Technical Studies Electives

Any Audio production (ARSP),IT/Computer Careers (CCIS), Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MGDP1120	Introduction to Digital Photography	2
MGDP2215	Graphic Design Internship	1 - 12

Choose a Total of: 3 credits

Graduation (30 Credits)

Prerequisite: Basic computer literacy, familiarity with the internet, college-level reading and communication ability, and proficiency in basic mathematics.

All students must pass the computer literacy assessment test before being admitted.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/12/2020 : BP 1516 / EP

Interactive Design and Video Production

Animation and Motion Graphic Artist (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Animators and motion graphics artists work for advertising companies, the film and video industry, and for digital design firms. They create the animations and visual effects in films, TV shows, video games, and commercials. The designer must be able to use good written, verbal and visual communication skills, both with clients and other team members. Some jobs will require independent work and others will be part of a team effort.

Award Outcomes

Create assets for film, video, and games.
Demonstrate the ability to generate mood, emotion, character, and story.
Demonstrate mastery of animation and motion graphics software and technology.
Create animations using both 2D and 3D techniques.
Understand workflow and production processes in animation and motion graphics.
Communicate ideas and production direction in both written and spoken forms.
Produce a professional portfolio up to industry standards.

Career Opportunities

Animators and motion graphic artists are needed to work on video games, movie and television special effects, and interactive media. They are also needed to work on 3D animated movies. In addition, growth will occur due to an increasing need for computer graphics in the growing number of mobile technologies. Occupational titles include animator, motion graphics artist, special effects designer, effects artists, digital artist, media designer, media artist, 3D designer, 3D artist, 3D animator, and concept artist.

Program Requirements

Technical Studies Required 45 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP1580	Animation	3
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2065	3D Advanced Production	4
MMVP2560	After Effects	3
MMVP2565	Advanced After Effects	3
MMVP2600	Digital Post Production	4
MMVP2641	Portfolio Production	3
MGDP1340	Advanced Photoshop	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
	Choose six credits from MnTC Goal Area 2	6
	Choose three credits from MnTC Goal Areas 3-10	3

Choose one of the following:

ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Fall Start Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1580	Animation	3
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 16

Second Semester

MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP2560	After Effects	3
MMVP2600	Digital Post Production	4
COMM2130	Public Speaking	3

Total Credits 16

Third Semester

MGDP1340	Advanced Photoshop	3
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2565	Advanced After Effects	3
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 15

Fourth Semester

MMVP2065	3D Advanced Production	4
MMVP2641	Portfolio Production	3
	Choose 3 credits from MnTC Goal Areas 3-10	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 15

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5

PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 6 Credits

MnTC Goal Areas 3-10

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/21/2020 : BP 1109 / EP

Spring Start Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP2560	After Effects	3
COMM2130	Public Speaking	3

Total Credits 16

Second Semester

MMVP1505	Introduction to Visual Communications	3
	or	
MMVP2600	Digital Post Production	4
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2565	Advanced After Effects	3
MMVP1580	Animation	3

Total Credits 15 or 16

Third Semester

MGDP1340	Advanced Photoshop	3
MMVP1562	Audio for Media	3
MMVP2065	3D Advanced Production	4
MMVP2641	Portfolio Production	3
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 15

Fourth Semester

MMVP1505	Introduction to Visual Communications	3
	or	
MMVP2600	Digital Post Production	4
	Choose 3 credits from MnTC Goal Areas 3-10	3

	Choose 3 credits from MnTC Goal Area 2	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 12 or 13

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 6 Credits

MnTC Goal Areas 3-10

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Choose a Total of: 3 Credits

Graduation (60 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/21/2020 : BP 1109 / EP

Animation and Motion Graphic Artist (BP) Diploma

Overview and Award Outcomes

Overview

Animators and motion graphics artists work for advertising companies, the film and video industry, and for digital design firms. They create the animations and visual effects in films, TV shows, video games, and commercials. The designer must be able to use good written, verbal and visual communication skills, both with clients and other team members. Some jobs will require independent work and others will be part of a team effort.

Award Outcomes

Create assets for film, video, and games.
Demonstrate the ability to generate mood, emotion, character, and story.
Demonstrate mastery of animation and motion graphics software and technology.
Create animations using both 2D and 3D techniques.
Understand workflow and production processes in animation and motion graphics.
Communicate ideas and production direction in both written and spoken forms.
Produce a professional portfolio up to industry standards.

Career Opportunities

Animators and motion graphic artists are needed to work on video games, movie and television special effects, and interactive media. They are also needed to work on 3D animated movies. In addition, growth will occur due to an increasing need for computer graphics in the growing number of mobile technologies. Occupational titles include animator, motion graphics artist, special effects designer, effects artists, digital artist, media designer, media artist, 3D designer, 3D artist, 3D animator, and concept artist.

Program Requirements

Technical Studies Required 45 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP1580	Animation	3
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2560	After Effects	3
MMVP2065	3D Advanced Production	4
MMVP2565	Advanced After Effects	3
MMVP2600	Digital Post Production	4
MMVP2641	Portfolio Production	3
MGDP1340	Advanced Photoshop	3

General Education Required 9 Credits

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2130	Public Speaking	3
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 54

Fall Start Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1580	Animation	3

Total Credits 13

Second Semester

MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP2560	After Effects	3
MMVP2600	Digital Post Production	4
COMM2130	Public Speaking	3

Total Credits 16

Third Semester

MGDP1340	Advanced Photoshop	3
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2565	Advanced After Effects	3
CCDS1040	Job Seeking Skills	2

Total Credits 14

Fourth Semester

MMVP2065	3D Advanced Production	4
MMVP2641	Portfolio Production	3
COMM1050	Communication in the Workplace	2
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

Total Credits 11

Graduation (54 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/21/2020 : BP 1110 / EP

Spring Start Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP2560	After Effects	3
COMM2130	Public Speaking	3

Total Credits 16

Second Semester

MMVP1505	Introduction to Visual Communications	3
	or	
MMVP2600	Digital Post Production	4
MMVP1580	Animation	3
MMVP2045	3D Modeling	3
MMVP2055	3D Animation	3
MMVP2565	Advanced After Effects	3

Total Credits 15 or 16

Third Semester

MGDP1340	Advanced Photoshop	3
MMVP1562	Audio for Media	3
MMVP2065	3D Advanced Production	4
MMVP2641	Portfolio Production	3

Total Credits 13

Fourth Semester

MMVP1505	Introduction to Visual Communications	3
	or	
MMVP2600	Digital Post Production	4
CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

Total Credits 9 or 10

Graduation (54 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 1110 / EP

Interactive Designer (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Interactive Designer is responsible for the creative production of computer generated artwork and presentation materials. The designer must be able to use good written, verbal and visual communication skills, both with clients and other team members. Some jobs will require independent work and others will be part of a team effort. This production work may include CD ROMs, interactive programs, web graphics, ad design, 2D and 3D animations, video graphics and print materials.

Award Outcomes

Produce media solutions for clients.
Analyze end-user needs.
Demonstrate proficiency with industry-standard media production hardware and software.
Demonstrate production workflows.
Develop creative solutions with visual and audio techniques.
Understand roles and function as a part of a production team.
Develop positive and accurate written communications.
Apply legal and ethical principles to personal, social, and professional behaviors.

Career Opportunities

Interactive Designers with good artistic design skills are in high demand by media producers, film and animation companies, production houses, government agencies, printing houses, ad agencies, educational institutions and businesses who are engaged in local and global communications with outside customers or company employees.

Program Requirements

Technical Studies Required 49 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3
MMVP2025	Interactive Game Design	3
MMVP2560	After Effects	3
MMVP2575	Interactive Mobile Design	3
MMVP2641	Portfolio Production	3
MGDP1240	Illustrator	3
MGDP1250	Web Design & Development I	3
MGDP1340	Advanced Photoshop	3
MGDP2050	Web Design & Development II	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
	Choose six credits from MnTC Goal Area 2	6
	Choose three credits from MnTC Goal Areas 3-10	3

Choose one of the following:

ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MGDP1250	Web Design & Development I	3
MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1570	Introduction to Programming for Designers	3

Total Credits 16

Second Semester

MGDP2050	Web Design & Development II	3
MMVP1562	Audio for Media	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3
COMM2130	Public Speaking	3

Total Credits 15

Summer Semester

	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 3

Third Semester

MGDP1340	Advanced Photoshop	3
MMVP1545	3D Basics	3
MMVP2025	Interactive Game Design	3
MMVP2575	Interactive Mobile Design	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 15

Fourth Semester

MGDP1240	Illustrator	3
MMVP2560	After Effects	3
MMVP2641	Portfolio Production	3
	Choose 3 credits from MnTC Goal Area 2	3
	Choose three credits from MnTC Goal Areas 3-10	3

Total Credits 15

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3

MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 6 Credits

MnTC Goal Areas 3-10

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

Choose a Total of: 3 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/5/2020 : BP 1104 / EP

Interactive Designer (BP) Diploma

Overview and Award Outcomes

Overview

The Interactive Designer is responsible for the creative production of computer generated artwork and presentation materials. The designer must be able to use good written, verbal and visual communication skills, both with clients and other team members. Some jobs will require independent work and others will be part of a team effort. This production work may include CD ROMs, interactive programs, web graphics, ad design, 2D and 3D animations, video graphics and print materials.

Award Outcomes

Produce media solutions for clients.
Analyze end-user needs.
Demonstrate proficiency with industry-standard media production hardware and software.
Demonstrate production workflows.
Develop creative solutions with visual and audio techniques.
Understand roles and function as a part of a production team.
Develop positive and accurate written communications.
Apply legal and ethical principles to personal, social, and professional behaviors.

Career Opportunities

Interactive Designers with good artistic design skills are in high demand by media producers, film and animation companies, production houses, government agencies, printing houses, ad agencies, educational institutions and businesses who are engaged in local and global communications with outside customers or company employees.

Program Requirements

Technical Studies Required 49 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1545	3D Basics	3
MMVP1562	Audio for Media	3
MMVP1570	Introduction to Programming for Designers	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3
MMVP2025	Interactive Game Design	3
MMVP2560	After Effects	3
MMVP2575	Interactive Mobile Design	3
MMVP2641	Portfolio Production	3
MGDP1240	Illustrator	3
MGDP1250	Web Design & Development I	3
MGDP1340	Advanced Photoshop	3
MGDP2050	Web Design & Development II	3

General Education Required 9 Credits

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2130	Public Speaking	3
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 58

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1570	Introduction to Programming for Designers	3
MGDP1250	Web Design & Development I	3

Total Credits 16

Second Semester

MMVP1562	Audio for Media	3
MMVP1580	Animation	3
MMVP2010	JavaScript for Designers	3
MGDP2050	Web Design & Development II	3
COMM2130	Public Speaking	3

Total Credits 15

Third Semester

MMVP1545	3D Basics	3
MMVP2025	Interactive Game Design	3
MMVP2575	Interactive Mobile Design	3
MGDP1340	Advanced Photoshop	3
CCDS1040	Job Seeking Skills	2

Total Credits 14

Fourth Semester

MMVP2560	After Effects	3
MMVP2641	Portfolio Production	3
MGDP1240	Illustrator	3
COMM1050	Communication in the Workplace	2
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

Total Credits 13

Graduation (58 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/5/2020 : BP 1107 / EP

Video Production Specialist (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Video Production Specialist will perform an ever-changing variety of tasks from writing scripts, shooting video and lighting, to digital non-linear editing. This person must have an understanding and ability to work with the latest technologies. Computers are a common tool and the Video Specialist must not only be creative, but have a technical grasp of new and evolving hardware and software applications as they relate to video.

Award Outcomes

Produce media solutions for clients.
Analyze end-user needs.
Demonstrate proficiency with industry-standard media production hardware and software.
Demonstrate production workflows.
Develop creative solutions with visual and audio techniques.
Define roles and function as a part of a production team.
Develop positive and accurate written communications.
Apply legal and ethical principles to personal, social, and professional behaviors.

Career Opportunities

A Video Production Specialist has the potential for finding employment in the following areas: video production and animation houses, multimedia, CD and web development companies, law firms, training departments in large and mid-size corporations, hospitals, television broadcast and cable stations. Related positions can also be found in sales as account executives for production companies or equipment rental suppliers/vendors.

Program Requirements

Technical Studies Required 54 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1562	Audio for Media	3
MMVP1600	Introduction to Video Production	4
MMVP1605	Videography and Directing	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MMVP1700	DSLR Video Production	3
MMVP2001	Advanced Lighting	3
MMVP2550	Video Field Production	3
MMVP2560	After Effects	3
MMVP2600	Digital Post Production	4
MMVP2605	Corporate Video Production	4
MMVP2610	Avid Non-Linear Editing	3
MMVP2641	Portfolio Production	3
MGDP1230	Photoshop	3

General Education Required 15 Credits

COMM2130	Public Speaking	3
	Choose six credits from MnTC Goal Area 2	6
	Choose three credits from MnTC Goal Areas 3, 4, or 5	3

Choose one of the following:

ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may be used as an elective.

Recommended:

MMVP2630	Advanced Production Lab	1 - 8
MMVP2650	Interactive Design Video Production Internship	1 - 8

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1600	Introduction to Video Production	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2

Total Credits 18

Second Semester

MMVP1562	Audio for Media	3
MMVP1700	DSLR Video Production	3
MMVP2001	Advanced Lighting	3
MMVP2600	Digital Post Production	4
COMM2130	Public Speaking	3

Total Credits 16

Summer Semester

	Choose 3 credits from MnTC Goal Area 3, 4, or 5	3
	Choose one of the following:	
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Total Credits 6

Third Semester

MGDP1230	Photoshop	3
MMVP1605	Videography and Directing	4
MMVP2550	Video Field Production	3
	Choose 3 credits from MnTC Goal Area 2	3
	Technical Studies Electives	3

Total Credits 16

Fourth Semester

MMVP2560	After Effects	3
MMVP2605	Corporate Video Production	4
MMVP2610	Avid Non-Linear Editing	3
MMVP2641	Portfolio Production	3
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 16

Technical Studies Electives

Any Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that are not required for this award

may be used as an elective.

Recommended:

MMVP2630	Advanced Production Lab	1 - 8
MMVP2650	Interactive Design Video Production Internship	1 - 8

Choose a Total of: 3 Credits

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 6 Credits

MnTC Goal Areas 3, 4, or 5

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

	MnTC Goal Area 3	
BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2010	College Physics II	4
PHYS2015	Introductory Physics II	3
	MnTC Goal Area 4	
MATH2050	Applications of Quantitative Reasoning	3
MATH2150	Introduction to Statistics	3
MATH2200	College Algebra	4
PHIL2000	Introduction to Logic	3
	MnTC Goal Area 5	
ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3

SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/27/2020 : BP 1105 / EP

Video Production Specialist (BP) Diploma

Overview and Award Outcomes

Overview

The Video Production Specialist will perform an ever-changing variety of tasks from writing scripts, shooting video and lighting, to digital non-linear editing. This person must have an understanding and ability to work with the latest technologies. Computers are a common tool and the Video Specialist must not only be creative, but have a technical grasp of new and evolving hardware and software applications as they relate to video.

Award Outcomes

Produce media solutions for clients.
Analyze end-user needs.
Demonstrate proficiency with industry-standard media production hardware and software.
Demonstrate production workflows.
Develop creative solutions with visual and audio techniques.
Define roles and function as a part of a production team.
Develop positive and accurate written communications.
Apply legal and ethical principles to personal, social, and professional behaviors.

Career Opportunities

A Video Production Specialist has the potential for finding employment in the following areas: video production and animation houses, multimedia, CD and web development companies, law firms, training departments in large and mid-size corporations, hospitals, television broadcast and cable stations. Related positions can also be found in sales as account executives for production companies or equipment rental suppliers/vendors.

Program Requirements

Technical Studies Required 54 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1562	Audio for Media	3
MMVP1600	Introduction to Video Production	4
MMVP1605	Videography and Directing	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MMVP1700	DSLR Video Production	3
MMVP2001	Advanced Lighting	3
MMVP2550	Video Field Production	3
MMVP2560	After Effects	3
MMVP2600	Digital Post Production	4
MMVP2605	Corporate Video Production	4
MMVP2610	Avid Non-Linear Editing	3
MMVP2641	Portfolio Production	3
MGDP1230	Photoshop	3

General Education Required 9 Credits

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2130	Public Speaking	3
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

General Education Elective 0 Credits

Technical Studies Elective 1 Credit

Any Graphic Design (MGDP) or Interactive Design and Video Production (MMVP) course that is not required for this award may

be used as an elective.

Recommended:

MMVP2630	Advanced Production Lab	1 - 8
MMVP2650	Interactive Design Video Production Internship	1 - 8

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1505	Introduction to Visual Communications	3
MMVP1511	Production Planning	4
MMVP1600	Introduction to Video Production	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2

Total Credits 18

Second Semester

MMVP1562	Audio for Media	3
MMVP1700	DSLR Video Production	3
MMVP2001	Advanced Lighting	3
MMVP2600	Digital Post Production	4
COMM2130	Public Speaking	3

Total Credits 16

Third Semester

MGDP1230	Photoshop	3
MMVP1605	Videography and Directing	4
MMVP2550	Video Field Production	3
COMM1050	Communication in the Workplace	2
CCDS1040	Job Seeking Skills	2
ENGL1026	Writing for Careers	3
	or	
MATH1007	Math for the Trades	2

Total Credits 16

Fourth Semester

MMVP2560	After Effects	3
MMVP2605	Corporate Video Production	4
MMVP2610	Avid Non-Linear Editing	3
MMVP2641	Portfolio Production	3
	Technical Studies Electives	1

Total Credits 14

Technical Studies Electives

Any Graphic Design (MGDP) or Interactive Video Design Production (MMVP) course that is not required for this award may be used as an elective.

Recommended:

MMVP2630	Advanced Production Lab	1 - 8
MMVP2650	Interactive Design Video Production Internship	1 - 8

Choose a Total of: 1 Credit

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is

subject to change without notice.

5/28/2020 : BP 1106 / EP

Media Producer (BP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate provides training for setup, operation and preventative maintenance of multimedia equipment including sound systems, video and computer presentation equipment, speaker support and lighting equipment. These positions often require communication with presenters and other personnel to facilitate the use of media. It is necessary to have good problem solving skills, work well under pressure and have the ability to lift and move heavy equipment.

Award Outcomes

Demonstrate proficiency with industry-standard media production hardware and software.
Demonstrate production workflows.
Develop creative solutions with visual and audio techniques.
Define roles and function as a part of a production team.
Apply legal and ethical principles to personal, social, and professional behaviors.

Career Opportunities

Primary employers include conference and convention centers, hotels and rental agencies, but any company or educational institution that has presentation facilities may also be a possible employer. Schedules may vary because of the seven day per week, as well as the evening operation of those facilities.

Program Requirements

Technical Studies Required 24 Credits

MMVP1500	Concepts of Interactive Media	3
MMVP1562	Audio for Media	3
MMVP1580	Animation	3
MMVP1600	Introduction to Video Production	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MMVP2560	After Effects	3
MMVP2600	Digital Post Production	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 1 Credit

Any Graphic Design (MGDP) or Interactive Video Design Production (MMVP) course that is not required for this award may be used as an elective.

Recommended:

MMVP2650	Interactive Design Video Production Internship	1 - 8

Total Occupational Certificate Credits 25

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1500	Concepts of Interactive Media	3
MMVP1600	Introduction to Video Production	4
MMVP1640	Social Media Production I	2
MGDP1645	Social Media Production II	2
MMVP2600	Digital Post Production	4

Total Credits 15

Second Semester

MMVP1562	Audio for Media	3

MMVP1580	Animation	3
MMVP2560	After Effects	3
	Technical Studies Electives	1

Total Credits 10

Technical Studies Electives

Any Graphic Design (MGDP) or Interactive Video Design Production (MMVP) course that is not required for this award may be used to satisfy an elective requirement.

Recommended:

MMVP2650	Interactive Design Video Production Internship	1 - 8

Choose a Total of: 1 Credit

Graduation (25 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/28/2020 : BP 1108 / EP

Motion Graphics (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

In this advanced certificate students will learn 2D and 3D animation, visual effects, motion graphics, and 3D modeling. This certificate is for the student who already has a background in film or video.

Prerequisite: Video production and editing experience is required to enroll in this certificate program.

Award Outcomes

Create assets for film, video, and games
Demonstrate the ability to generate mood, emotion, character, and story
Demonstrate mastery of animation and motion graphics software and technology
Create animations using both 2D and 3D techniques
Understand workflow and production processes in animation and motion graphics

Career Opportunities

Animators and motion graphic artists are needed to work on video games, movie and television special effects, and interactive media. They are also needed to work on 3D animated movies. In addition, growth will occur due to an increasing need for computer graphics in the growing number of mobile technologies. Occupational titles include animator, motion graphics artist, special effects designer, effects artists, digital artist, media designer, media artist, 3D designer, 3D artist, and 3D animator, and concept artist.

Program Requirements

Technical Studies Required 15 Credits

MMVP1545	3D Basics	3
MMVP1580	Animation	3
MMVP2045	3D Modeling	3
MMVP2560	After Effects	3
MMVP2565	Advanced After Effects	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Any ARSP, MGDP, or MMVP course not required for this award can be used as an elective.

Total Advanced Technical Certificate Credits 18

Spring Start Semester Sequence

Offered at Brooklyn Park Only

First Semester

MMVP1545	3D Basics	3
MMVP1580	Animation	3
MMVP2560	After Effects	3

Total Credits 9

Second Semester

MMVP2045	3D Modeling	3
MMVP2565	Advanced After Effects	3
	Technical Studies Electives	3

Total Credits 9

Technical Studies Electives

Any Audio Production (ARSP), Graphic Design (MGDP), or Interactive Video Design Production (MMVP) course that is not

required for this award may be used to satisfy an elective requirement.

Choose a Total of: 3 Credits

Graduation (18 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/5/2020 : BP 1111 / EP

Service and Education

Child Development

Child Development (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

This degree is designed to prepare individuals for employment in a variety of early child care and educational settings as teachers, family child care providers or nannies. Persons working in this profession provide a healthy, safe and developmentally appropriate environment in support of families. Students learn how to plan age appropriate activities which recognize the diversity of children and families. This degree expands the student`s knowledge of child development in areas of communication, writing and developmental skills.

Award Outcomes

Develop self-reflective habits as an early childhood professional.
Implement developmentally appropriate curriculum and teaching practices.
Apply developmental theories and practices.
Implement assessment and curriculum cycle.
Cultivate family and community relationships.
Develop an environment that honors diversity.

Career Opportunities

Job opportunities are available in child care centers, special needs programs, in home care (nanny), family child care, schoolage care, recreational and parent/child programs.

Program Requirements

Technical Studies Required 44 Credits

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1030	Creative Activities and Environments	3
CDEV1520	Guiding Children’s Behavior	3
CDEV1530	Health, Safety and Nutrition	3
CDEV1550	Curriculum Planning	3
CDEV1725	Practicum I	3
CDEV1750	Practicum II	3
CDEV2000	Children with Differing Abilities	3
CDEV2016	Leadership in Early Childhood	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2125	Infant/Toddler Development and Learning	3
CDEV2500	Introduction to Language and Literacy	3
CDEV2230	Preschool Development and Learning	2
	or	
CDEV2255	Schoolage Development and Learning	2
	or	
CDEV2300	Multicultural Learning Experiences	2

General Education Required 16 Credits

ENGL2121	Writing and Research	4
	Choose one course from MnTC Goal Area 2	3
	Choose two courses from MnTC Goal Area 5	6
	Choose one course from MnTC Goal Area 7	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1030	Creative Activities and Environments	3
ENGL2121	Writing and Research	4

Total Credits 16

Second Semester

CDEV1550	Curriculum Planning	3
CDEV2230	Preschool Development and Learning	2
	or	
CDEV2255	Schoolage Development and Learning	2
	or	
CDEV2300	Multicultural Learning Experiences	2
	Choose 3 credits from MnTC Goal Area 2	3
	Choose 6 credits from MnTC Goal Area 5	

Total Credits 14

Third Semester

CDEV1520	Guiding Children's Behavior	3
CDEV1530	Health, Safety and Nutrition	3
CDEV1725	Practicum I	3
CDEV2000	Children with Differing Abilities	3
CDEV2016	Leadership in Early Childhood	3

Total Credits 15

Fourth Semester

CDEV1750	Practicum II	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2125	Infant/Toddler Development and Learning	3
CDEV2500	Introduction to Language and Literacy	3
	Choose 3 credits from MnTC Goal Area 7	3

Total Credits 15

Technical Studies Electives

Recommended:

CDEV1900	Specialized Lab	1 - 4
CDEV2230	Preschool Development and Learning	2
CDEV2255	Schoolage Development and Learning	2
CDEV2300	Multicultural Learning Experiences	2

Choose a Total of: 2 Credits

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3

INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 6 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
LANG2000	American Sign Language/Deaf Culture I	3
LANG2010	American Sign Language/Deaf Culture II	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

Criminal Background Studies: Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice

4/20/2020 : BP 7004 / EP 7005

Child Development (BP/EP) Associate of Science

Overview and Award Outcomes

Overview

This degree is designed to prepare individuals for employment in a variety of early child care and educational settings as teachers, family child care providers or nannies. Persons working in this profession provide a healthy, safe and developmentally appropriate environment in support of families. Students learn how to plan age appropriate activities which recognize the diversity of children and families. This degree expands the student's knowledge of child development in areas of communication, writing and developmental skills. Many employers recognize the benefit from this extensive training and require a degree of the employees at the teacher level. This award will transfer to select other institutions towards a Bachelors Degree.

Award Outcomes

Develop self-reflective habits as an early childhood professional.
Implement developmentally appropriate curriculum and teaching practices.
Apply developmental theories and practices.
Implement assessment and curriculum cycle.
Cultivate family and community relationships.
Develop an environment that honors diversity.

Career Opportunities

Job opportunities are available in child care centers, special needs programs, in home care (nanny), family child care, schoolage care, recreational and parent/child programs. Upon completion of an articulated bachelor's degree, there are expanded opportunities in early childhood programs, as well as the ability to teach through third grade in public school systems.

Program Requirements

Technical Studies Required 30 Credits

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1030	Creative Activities and Environments	3
CDEV1520	Guiding Children’s Behavior	3
CDEV1530	Health, Safety and Nutrition	3
CDEV1725	Practicum I	3
CDEV2000	Children with Differing Abilities	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2500	Introduction to Language and Literacy	3

General Education Required 30 Credits

BIOL2001	Biology in Society	4
	or	
PHYS2005	College Physics I	4
COMM2130	Public Speaking	3
ENGL2121	Writing and Research	4
MATH2200	College Algebra	4
PHIL2100	Critical Thinking for College Success	3
PSYC2300	General Psychology	3
	or	
PSYC2310	Psychology Throughout the Lifespan	3
	or	
PSYC2320	Psychology of Living in the 21st Century	3
	or	
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

	or	
	Choose 3 credits from MnTC Goal Area 7	3
	Choose 3 credits from MnTC Goal Area 6 or 8	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate of Science Credits 60

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1030	Creative Activities and Environments	3
ENGL2121	Writing and Research	4

Total Credits 16

Second Semester

COMM2130	Public Speaking	3
MATH2200	College Algebra	4
PHIL2100	Critical Thinking for College Success	3
PSYC2300	General Psychology	3
	or	
PSYC2310	Psychology Throughout the Lifespan	3
	or	
PSYC2320	Psychology of Living in the 21st Century	3
	or	
PSYC2330	Abnormal Psychology	3

Total Credits 13

Third Semester

CDEV1520	Guiding Children's Behavior	3
CDEV1530	Health, Safety and Nutrition	3
CDEV2000	Children with Differing Abilities	3
BIOL2001	Biology in Society	4
	or	
PHYS2005	College Physics I	4
SOCI2000	Marriage and Family	3

Total Credits 16

Fourth Semester

CDEV1725	Practicum I	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2500	Introduction to Language and Literacy	3
SOCI2200	Racial and Ethnic Relations	3
	or	
	Choose 3 credits from MnTC Goal Area 7	3
	Choose 3 credits from MnTC Goal Area 6 or 8	3

Total Credits 15

MnTC Goal Area 6

ARTS2000	Elements of Design	3
ARTS2050	Introduction to Art	3
ARTS2120	Photographic Arts	3
ARTS2130	Digital Photography I	3
ENGL2130	Introduction to Creative Writing	3
ENGL2140	Topics in Literature: Trades and Industry	3
ENGL2200	Introduction to Cinema	3
PHIL2200	Ethics	3
PHIL2400	Medical Ethics	4
PHIL2500	World Religions	3

Choose a Total of: 3 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
LANG2000	American Sign Language/Deaf Culture I	3
LANG2010	American Sign Language/Deaf Culture II	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 8

ARTS2050	Introduction to Art	3
BIOL2003	Nutrition and Health	3
ECON2300	Principles of Macroeconomics	3
PHIL2500	World Religions	3

Choose a Total of: 3 Credits

Graduation (60 Credits)

60 credits completed with a 2.8 GPA or better

Criminal Background Studies: Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice

4/20/2020 : BP 7008 / EP 7009

Child Development (BP/EP) Diploma

Overview and Award Outcomes

Overview

This diploma provides students with the skills necessary to work in a variety of child care careers. Skills to be developed include planning age appropriate activities which recognize the diversity of children and families. In addition, students will practice guidance techniques and supervise snack, cleanup and other daily routines to provide for a safe and healthy environment.

Award Outcomes

Develop self-reflective habits as an early childhood professional.
Implement developmentally appropriate curriculum and teaching practices.
Apply developmental theories and practices.
Implement assessment and curriculum cycle.

Career Opportunities

Job opportunities are available in child care centers, special needs programs, in home care (nanny), family child care, schoolage care, recreational and parent/child programs.

Program Requirements

Technical Studies Required 24 Credits

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1030	Creative Activities and Environments	3
CDEV1520	Guiding Children's Behavior	3
CDEV1530	Health, Safety and Nutrition	3
CDEV1550	Curriculum Planning	3
CDEV1725	Practicum I	3

General Education Required 4 Credits

ENGL2121	Writing and Research	4

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

	Recommended:	
CDEV1750	Practicum II	3
CDEV2000	Children with Differing Abilities	3
CDEV2016	Leadership in Early Childhood	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2125	Infant/Toddler Development and Learning	3
CDEV2500	Introduction to Language and Literacy	3

Total Diploma Credits 31

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

CDEV1000	Introduction to Early Childhood Education	3
CDEV1010	Child Growth and Development	3
CDEV1020	Observation and Assessment	3
CDEV1530	Health, Safety and Nutrition	3
ENGL2121	Writing and Research	4

Total Credits 16

Second Semester

CDEV1030	Creative Activities and Environments	3
CDEV1520	Guiding Children's Behavior	3
CDEV1550	Curriculum Planning	3
CDEV1725	Practicum I	3
	Technical Studies Electives	3

Total Credits 15

Technical Studies Electives

	Recommended:	
CDEV1750	Practicum II	3
CDEV2000	Children with Differing Abilities	3
CDEV2075	Working with Diverse Families and Children	3
CDEV2125	Infant/Toddler Development and Learning	3
CDEV2500	Introduction to Language and Literacy	3

Choose a Total of: 3 Credits

Graduation (31 Credits)

Criminal Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with children, patients, and residents at a health or child care facility licensed by the State of Minnesota must have a background study conducted by the state. Individuals with specified felony convictions are prohibited from having direct contact with children, patients, and residents of licensed facilities. Anyone refusing to cooperate in the criminal background study cannot participate in coursework that requires direct contact with children, patients or residents. Students who are disqualified from having direct patient/resident/child contact will not be able to participate in coursework which includes a practical experience. Therefore, completion of coursework for the program major will not be possible without documentation of a cleared background study.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/20/2020 : BP 7006 / EP 7007

Culinary Arts

Culinary Arts (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Culinary Arts A.A.S. degree prepares individuals for career opportunities in hotels, restaurants, clubs and institutional food service facilities. Responsibilities may include menu planning, purchasing food, equipment, and supplies, selecting, and developing recipes, selecting and using various food preparation methods and techniques. Management duties may include, but are not limited to financial planning, hiring, training and supervising employees.

Award Outcomes

Prepare high quality food in a cost effective and efficient manner as utilized in professional foodservice operations.
Demonstrate ability to meet Certified Culinarian requirements of the American Culinary Federation.
Exhibit knowledge and hands-on ability to perform the activities of all key personnel engaged in food service production operations.
Design a variety of menus, select recipes, plan food consumption, procure appropriate products, properly store items and prepare them to American Culinary Federation accepted professional standards.
Apply mathematical, reading, and communication skills essential to the food service industry.
Practice positive human relationship skills with the diverse population of the hospitality industry employees and guests.
Create a professional career plan utilizing portfolio format.

Career Opportunities

Employment may be found in hotels, restaurants, clubs, health care facilities, schools, resorts and many other food related operations. Depending on qualifications and experience numerous positions are available to graduates such as restaurant cooks, banquet cooks, bakers, assistant pastry chefs, pantry personnel, kitchen managers, food salespersons, personal chefs, purchasing clerks, caterers, and entry-level chef/managers are some of the many career positions possible upon course completion. Students who complete the Culinary Arts program are eligible to pursue American Culinary Federation certification. The American Culinary Federation accrediting commission nationally accredits the curriculum at Hennepin Technical College.

Program Requirements

Technical Studies Required 50 Credits

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4
CULA1301	Culinary Arts Nutrition	2
CULA1321	Decorative Work and Showpieces	2
CULA1325	Menu Planning	2
CULA1335	Purchasing and Cost Control	2
CULA1525	Dining Experience and Expectations	4
CULA1530	Advanced Baking and Pastry	4
CULA1535	Advanced Garde Manger and Entremétier	4
CULA1540	Advanced Culinary Techniques	4
CULA1700	Human Relations Management	2
CULA1710	Beverage Management	2
CULA2056	Global Cuisine	4
CULA2075	Catering	2

General Education Required 9 Credits

PHIL2100	Critical Thinking for College Success	3
	or	
PHIL2200	Ethics	3
SOCI2130	Food, Culture and Society	3
	Choose one course from MnTC Goal Area 1	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 65

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4

Total Credits 16

Second Semester

CULA1301	Culinary Arts Nutrition	2
CULA1325	Menu Planning	2
CULA1335	Purchasing and Cost Control	2
CULA2056	Global Cuisine	4
SOCI2130	Food, Culture and Society	3
	Choose one course from MnTC Goal Area 1	3

Total Credits 16

Third Semester

CULA1525	Dining Experience and Expectations	4
CULA1530	Advanced Baking and Pastry	4
CULA1535	Advanced Garde Manger and Entremétier	4
CULA1540	Advanced Culinary Techniques	4

Total Credits 16

Fourth Semester

CULA1321	Decorative Work and Showpieces	2
CULA1700	Human Relations Management	2
CULA1710	Beverage Management	2
CULA2075	Catering	2
PHIL2100	Critical Thinking for College Success	3
	or	
PHIL2200	Ethics	3
	General Education Electives	6

Total Credits 17

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

MnTC Goal Area 1

A complete list of MnTC courses and Goal Area that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3

ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

Choose a Total of: 3 Credits

Graduation (65 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 7104 / EP

Culinary Arts (BP) Diploma

Overview and Award Outcomes

Overview

The Culinary Arts diploma prepares individuals for career opportunities in hotels, restaurants, clubs and institutional food service operations. Responsibilities may include menu planning, purchasing food, equipment, and supplies, selecting and developing recipes, selecting and using various food preparation methods and techniques. Management duties may include, but are not limited to financial planning, hiring, training and supervising employees.

Award Outcomes

Prepare high quality food in a cost effective and efficient manner as utilized in professional foodservice operations.
Demonstrate ability to meet Certified Culinarian requirements of the American Culinary Federation.
Exhibit knowledge and hands-on ability to perform the activities of all key personnel engaged in food service production operations.
Design a variety of menus, select recipes, plan food consumption, procure appropriate products, properly store items and prepare them to American Culinary Federation accepted professional standards.
Apply mathematical, reading, and communication skills essential to the food service industry.
Practice positive human relationship skills with the diverse population of the hospitality industry employees and guests.
Create a professional career plan utilizing portfolio format.

Career Opportunities

Employment may be found in hotels, restaurants, clubs, health care facilities, schools, resorts and many other food related operations. Depending on qualifications and experience numerous positions are available to graduates such as restaurant cooks, banquet cooks, bakers, assistant pastry chefs, pantry personnel, kitchen managers, food salespersons, personal chefs, purchasing clerks, caterers, and entry-level chef/managers are some of the many career positions possible upon course completion. Students who complete the Culinary Arts diploma program are eligible to pursue American Culinary Federation certification. The American Culinary Federation accrediting commission nationally accredits the curriculum at Hennepin Technical College.

Program Requirements

Technical Studies Required 32 Credits

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4
CULA1525	Dining Experience and Expectations	4
CULA1530	Advanced Baking and Pastry	4
CULA1535	Advanced Garde Manger and Entremétier	4
CULA1540	Advanced Culinary Techniques	4

General Education Required 6 Credits

Choose six Credits from the following:

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3
ECON2200	Principles of Microeconomics	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3
SOCI2100	Introduction to Sociology	3
SOCI2130	Food, Culture and Society	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 38

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4

Total Credits 16

Second Semester

CULA1525	Dining Experience and Expectations	4
CULA1530	Advanced Baking and Pastry	4
CULA1535	Advanced Garde Manger and Entremétier	4
CULA1540	Advanced Culinary Techniques	4

Total Credits 16

Third Semester

Choose 6 Credits from the following:

CCDS1040	Job Seeking Skills	2
COMM1050	Communication in the Workplace	2
COMM2050	Interpersonal Communication	3
ECON2200	Principles of Microeconomics	3
PHIL2100	Critical Thinking for College Success	3
PHIL2200	Ethics	3
SOCI2100	Introduction to Sociology	3
SOCI2130	Food, Culture and Society	3

Total Credits 6

Graduation (38 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 7108 / EP

Culinary Assistant (BP) Occupational Certificate

Overview and Award Outcomes

Overview

Completion of this certificate will prepare students who are primarily interested in immediate entry-level employment in the foodservice industry. Areas of study will include, but are not limited to: foodservice related mathematics, weights and measures, use of knives and foodservice equipment, product identification, basic baking techniques, product fabricating, preparations of stocks, sauces and soups and fundamental cooking methods and techniques.

Award Outcomes

Prepare high quality food in a cost effective manner.
Apply mathematical skills essential to the food service industry.
Create a professional career plan.

Career Opportunities

Career opportunities exist in a variety of food service operations such as health care and family style restaurants. Depending on your skill level and knowledge, you may seek employment as a line cook, cooks` helper, baker and/or pastry chefs` assistant, pantry worker, and fry or vegetable cook. Completion of this certificate will provide you with a solid, although limited, foundation on which to build your culinary career.

Program Requirements

Technical Studies Required 16 Credits

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 16

Semester Sequence

Offered at Brooklyn Park Only

First Semester

CULA1000	Culinary Calculations	1
CULA1106	Culinary Culture and Industry	2
CULA1116	Sanitation and Safety	1
CULA1126	Baking and Pastry	4
CULA1136	Garde Manger and Entremétier	4
CULA1156	Classic Culinary Techniques	4

Total Credits 16

Graduation (16 credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

5/20/2020 : BP 7110 / EP

Culinary Gourmet Technician (BP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

The Culinary Certificate is a hands-on focused award that builds on the culinary fundamentals skills learned in 1st semester. Giving students an opportunity to apply those basic skills, in the campus restaurant where students have an opportunity to plan, organize, prepare and serve their menus to the public.

Prerequisite: Completion of the Culinary Assistant Certificate or completion of the 1st semester of the Culinary Arts A.A.S. degree or Diploma.

Award Outcomes

Prepare high quality food in a cost effective manner.
Execute a variety of menus.
Demonstrate the ability to plan a variety of menus.
Apply mathematical skills essential to the food service industry.
Create a professional career plan.
Perform the duties of operational personnel in food service industry.

Career Opportunities

Career opportunities exist in a variety of food service operations such as health care and family style restaurants. Depending on your skill level and knowledge, you may seek employment as a line cook, cooks' helper, baker and/or pastry chefs' assistant, pantry worker, and fry or vegetable cook. Completion of this certificate will provide you with a solid, although limited, foundation on which to build your culinary career.

Program Requirements

Technical Studies Required 16 Credits

CULA1525	Dining Experience and Expectations	4
CULA1530	Advanced Baking and Pastry	4
CULA1535	Advanced Garde Manger and Entremétier	4
CULA1540	Advanced Culinary Techniques	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Advanced Technical Certificate Credits 16

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Transportation

Auto Body Collision Technology

Auto Body Technician (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Auto Body Repair and Refinishing Technicians repair vehicles that are damaged as a result of collisions, corrosion and wear. They provide customers with cost estimates for repair, replace or repair body parts and paint vehicles using various materials, equipment and methods.

Award Outcomes

Demonstrate electrical circuit repairs.
Perform repairs on plastics.
Create damage report utilizing the procedure pages.
Perform proper replacement techniques on structural parts.
Apply straightening techniques on structural parts.
Demonstrate stationary glass replacement.
Solve paint application problems.
Apply primer surfacer to paint company and industry standards.
Perform techniques for removing and replacing bolt-on parts.
Body fill a one hour dent to industry standards.
Execute MIG welding metal procedures according to I-CAR standards.
Demonstrate metal cutting using an oxy/act torch.

Career Opportunities

Auto Body Technicians work for automotive dealerships, independent auto shops, government agencies and other organizations that maintain their own fleets of trucks and cars. There are also opportunities to be employed as an insurance adjuster, manufacturer`s representative, auto service and sales person or wholesale parts and tool sales person.

Program Requirements

Technical Studies Required 57 Credits

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1150	Trim, Moveable Glass and Hardware	2
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1160	Bolt-on, Weld-on Panel Replacement and Alignment	4
ABCT1165	Using Body Filler II	2
ABCT1240	Detailing	2
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4
ABCT2006	Stationary Glass Replacement	1
ABCT2015	Steering and Suspension	2
ABCT2040	Restraint Systems	1
ABCT2051	Damage Analysis and Straightening Structural Parts	4
ABCT2055	Panel Replacement and Restoring Corrosion Protection	4
ABCT2146	Electrical and Electronic Systems	2
ABCT2150	Brake Systems	1
ABCT2175	Analyzing Damage/Creating a Manual Damage Report	2
ABCT2185	Plastic Adhesive and Welding Repairs	2
ABCT2190	Air Conditioning and Cooling Systems	2
ABCT2495	Auto Body Internship I	4
ABCT2505	Auto Body Internship III	3

General Education Required 9 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 2	3
	Choose one course from MnTC Goal Area 5	3

General Education Elective 6 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1150	Trim, Moveable Glass and Hardware	2
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1160	Bolt-on, Weld-on Panel Replacement and Alignment	4
ABCT2146	Electrical and Electronic Systems	2

Total Credits 15

Second Semester

ABCT1240	Detailing	2
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3

Total Credits 17

Summer Semester

	General Education Electives	6

Total Credits 6

Third Semester

ABCT2006	Stationary Glass Replacement	1
ABCT2015	Steering and Suspension	2
ABCT2040	Restraint Systems	1
ABCT2051	Damage Analysis and Straightening Structural Parts	4
ABCT2055	Panel Replacement and Restoring Corrosion Protection	4
ABCT2150	Brake Systems	1
ABCT2190	Air Conditioning and Cooling Systems	2
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 18

Fourth Semester

ABCT1165	Using Body Filler II	2

ABCT2175	Analyzing Damage/Creating a Manual Damage Report	2
ABCT2185	Plastic Adhesive and Welding Repairs	2
ABCT2495	Auto Body Internship I	4
ABCT2505	Auto Body Internship III	3
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 16

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 6 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 5004 / EP 5005

Auto Body Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

Auto Body Repair and Refinishing Technicians repair vehicles that are damaged as a result of collisions, corrosion and wear. They provide customers with cost estimates for repair, replace or repair body parts and paint vehicles using various materials, equipment and methods.

Award Outcomes

Demonstrate electrical circuit repairs.
Perform repairs on plastics.
Create damage report utilizing the procedure pages.
Perform proper replacement techniques on structural parts.
Apply straightening techniques on structural parts.
Demonstrate stationary glass replacement.
Solve paint application problems.
Apply primer surfacer to paint company and industry standards.
Perform techniques for removing and replacing bolt-on parts.
Body fill a one hour dent to industry standards.
Execute MIG welding metal procedures according to I-CAR standards.
Demonstrate metal cutting using an oxy/act torch.

Career Opportunities

Auto Body Technicians work for automotive dealerships, independent auto shops, government agencies and other organizations that maintain their own fleets of trucks and cars. There are also opportunities to be employed as an insurance adjuster, manufacturer`s representative, auto service and sales person or wholesale parts and tool sales person.

Program Requirements

Technical Studies Required 58 Credits

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1150	Trim, Moveable Glass and Hardware	2
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1160	Bolt-on, Weld-on Panel Replacement and Alignment	4
ABCT1165	Using Body Filler II	2
ABCT1240	Detailing	2
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4
ABCT2006	Stationary Glass Replacement	1
ABCT2015	Steering and Suspension	2
ABCT2040	Restraint Systems	1
ABCT2051	Damage Analysis and Straightening Structural Parts	4
ABCT2055	Panel Replacement and Restoring Corrosion Protection	4
ABCT2146	Electrical and Electronic Systems	2
ABCT2150	Brake Systems	1
ABCT2175	Analyzing Damage/Creating a Manual Damage Report	2
ABCT2185	Plastic Adhesive and Welding Repairs	2
ABCT2190	Air Conditioning and Cooling Systems	2
ABCT2495	Auto Body Internship I	4
ABCT2501	Auto Body Internship II	4

General Education Required 2 Credits

CCDS1040	Job Seeking Skills	2

General Education Elective 4 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 0 Credits

Total Diploma Credits 64

Semester Sequence

Offered at Brooklyn Park and Eden Prairie

First Semester

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1150	Trim, Moveable Glass and Hardware	2
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1160	Bolt-on, Weld-on Panel Replacement and Alignment	4
ABCT2146	Electrical and Electronic Systems	2

Total Credits 15

Second Semester

ABCT1240	Detailing	2
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4
	General Education Electives	2

Total Credits 16

Third Semester

ABCT2006	Stationary Glass Replacement	1
ABCT2015	Steering and Suspension	2
ABCT2040	Restraint Systems	1
ABCT2051	Damage Analysis and Straightening Structural Parts	4
ABCT2055	Panel Replacement and Restoring Corrosion Protection	4
ABCT2150	Brake Systems	1
ABCT2190	Air Conditioning and Cooling Systems	2
CCDS1040	Job Seeking Skills	2

Total Credits 17

Fourth Semester

ABCT1165	Using Body Filler II	2
ABCT2175	Analyzing Damage/Creating a Manual Damage Report	2
ABCT2185	Plastic Adhesive and Welding Repairs	2
ABCT2495	Auto Body Internship I	4
ABCT2501	Auto Body Internship II	4
	General Education Electives	2

Total Credits 16

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1

CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 5006 / EP 5007

Custom Fabrication and Finishing (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

Auto Body Repair and Refinishing Technicians repair vehicles that are damaged as a result of corrosion and wear. They provide customers with cost estimates for repair, replace or repair body parts and paint vehicles using various materials, equipment and methods.

Award Outcomes

Perform proper replacement techniques on structural parts.
Solve paint application problems.
Apply primer surfacer to paint company and industry standards.
Body fill a one hour dent to industry standards.
Execute MIG welding metal procedures according to I-CAR standards.
Demonstrate metal cutting using an oxy/act torch.

Career Opportunities

The student will have the ability to learn how to restore older model vehicles.

Program Requirements

Technical Studies Required 19 Credits

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 19

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Non-Structural Repair Technician Assistant (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

This certificate prepares students to perform non-structural repairs. This includes panel repairs of four hours or less, bolt-on panel replacements and weld-on panel replacements.

Award Outcomes

Demonstrate electrical circuit repairs.
Perform repairs on plastics.
Create damage report utilizing the procedure pages.
Perform proper replacement techniques on structural parts.
Apply straightening techniques on structural parts.
Demonstrate stationary glass replacement.
Solve paint application problems.
Apply primer surfacer to paint company and industry standards.
Perform techniques for removing and replacing bolt-on parts.
Body fill a one hour dent to industry standards.
Execute MIG welding metal procedures according to I-CAR standards.
Demonstrate metal cutting using an oxy/act torch.

Career Opportunities

Auto Body Technician Assistants work for automotive dealerships, independent auto shops, government agencies and other organizations that maintain their own fleets of trucks and cars. As a Non-structural Repair Technician Assistant the student will assist the Journeyman in repairing and replacing components in the day-to-day operations of vehicle repair.

Program Requirements

Technical Studies Required 13 Credits

ABCT1145	Cutting, Heating and MIG Welding	3
ABCT1150	Trim, Moveable Glass and Hardware	2
ABCT1155	Metal Straightening and Body Filler I	4
ABCT1160	Bolt-on, Weld-on Panel Replacement and Alignment	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Recommended:

ABCT1165	Using Body Filler II	2
ABCT2495	Auto Body Internship I	4
ABCT2600	Collision Lab	1 - 8

Total Occupational Certificate Credits 16

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Refinishing Technician Assistant (BP/EP) Occupational Certificate

Overview and Award Outcomes

Overview

Refinishing Assistants buff cars and trucks, install detail, sand, tape, mix paint and paint small jobs and used cars.

Award Outcomes

Solve paint application problems.
Apply primer surfacer to paint company and industry standards.

Career Opportunities

Auto Body Technicians work for automotive dealerships, independent auto shops, government agencies and other organizations that maintain their own fleets of trucks and cars. As a Refinishing Technician`s Assistant the student will work with a Journeyman Painter who will direct the student in the refinish environment. There are also opportunities to be employed as an insurance adjuster, manufacturer`s representative, auto service and sales person or wholesale parts and tool sales person.

Program Requirements

Technical Studies Required 14 Credits

ABCT1240	Detailing	2
ABCT1255	Environmental Health, Safety and Equipment Preparation for Finishes	4
ABCT1260	Surface Preparing and Finish Application	4
ABCT1265	Tinting and Blending	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 3 Credits

Recommended:

ABCT1235	Finish Defects	2
ABCT1250	Auto Body Painting Internship	1 - 4
ABCT2600	Collision Lab	1 - 8

Total Occupational Certificate Credits 17

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Structural Repair Technician Assistant (BP/EP) Advanced Technical Certificate

Overview and Award Outcomes

Overview

Structural Assistants perform wheel alignments, replace suspension parts, prepare vehicles for structural repairs, perform minor structural repairs and replace panels.

Prerequisite: Completion of Non-Structural Repair Technician Assistant certificate or two years related experience in industry.

Award Outcomes

Demonstrate electrical circuit repairs.
Perform proper replacement techniques on structural parts.
Apply straightening techniques on structural parts.
Demonstrate stationary glass replacement.
Perform techniques for removing and replacing bolt-on parts.
Body fill a one hour dent to industry standards.
Execute MIG welding metal procedures according to I-CAR standards.
Demonstrate metal cutting using an oxy/act torch.

Career Opportunities

Auto Body Technicians work for automotive dealerships, independent auto shops, government agencies and other organizations that maintain their own fleets of trucks and cars. As a Structural Repair Technician the student will work with a Body Repair Technician who will guide the student in the repair, replacement and alignments of vehicles needing these repairs.

Program Requirements

Technical Studies Required 12 Credits

ABCT2006	Stationary Glass Replacement	1
ABCT2015	Steering and Suspension	2
ABCT2040	Restraint Systems	1
ABCT2051	Damage Analysis and Straightening Structural Parts	4
ABCT2055	Panel Replacement and Restoring Corrosion Protection	4

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 4 Credits

Recommended:

ABCT2000	Advanced Welding Methods	1
ABCT2060	Straightening Structural Parts II	1
ABCT2495	Auto Body Internship I	4
ABCT2501	Auto Body Internship II	4
ABCT2600	Collision Lab	1 - 8

Total Advanced Technical Certificate Credits 16

Semester Sequence

Prerequisite Semester

First Semester

Second Semester

Third Semester

Fourth Semester

Automotive Technology

Automotive Technician (BP/EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Automotive Technology degree prepares the student in all areas of automobile and light truck service, diagnosis and repair at an entry level. An Automotive Technician will diagnose, determine condition, estimate cost of repair and replace or repair various components in engines, powertrains, suspensions, brakes, electrical systems, fuel systems, emission controls and computer controlled systems.

Award Outcomes

Evaluate scan tool readings.
Evaluate vehicle suspension systems.
Evaluate engine condition using precision instruments.
Interpret wiring diagrams.
Perform digital multimeter (DMM) measurements.
Use transmission test equipment.
Analyze heating ventilation/air conditioning systems.
Interpret electronic service information.
Diagnose hydraulic system components.
Analyze driveline components.
Determine customer vehicle repair needs.

Career Opportunities

Due to increased vehicle ownership, longer useful life of vehicles and increased maintenance requirements of new and complicated automotive systems, the demand for trained automotive technicians is at an extremely high level and is increasing annually. A wide range of employment opportunities exist in dealerships, fleets, mass merchandisers, independent garages and service stations.

The degree program also provides opportunities for advancement into shop management positions such as shop foreman, service manager and shop owner.

Program Requirements

Technical Studies Required 57 Credits

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1615	Basic Electrical	3
ATEC1620	Starting and Charging Systems	3
ATEC1625	Chassis Electrical	3
ATEC1705	Heating and Air Conditioning	4
ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
ATEC2685	Automotive Industry Internship I	5

General Education Required 12 Credits

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
PHYS2001	Introductory Physics	3

	Choose one course from MnTC Goal Area 5	3
	Choose one course from MnTC Goal Area 7	3

General Education Elective 3 Credits

Choose credits from Hennepin Technical College's 2000-level general education courses.

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 72

Semester Sequence - Full Time

Offered at Brooklyn Park and Eden Prairie

First Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1615	Basic Electrical	3
ATEC1620	Starting and Charging Systems	3

Total Credits 16

Second Semester

ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1625	Chassis Electrical	3
ATEC2685	Automotive Industry Internship I	5
PHYS2001	Introductory Physics	3

Total Credits 17

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 7	3

Total Credits 6

Third Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
	Choose one course from MnTC Goal Area 5	3

Total Credits 17

Fourth Semester

ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
	General Education Electives	3

Total Credits 16

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 credits

MnTC Goal Area 5

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
LANG2000	American Sign Language/Deaf Culture I	3
LANG2010	American Sign Language/Deaf Culture II	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/6/2020 : BP 5104 / EP 5105

Semester Sequence - Spring Start - Option 1

Offered at Brooklyn Park and Eden Prairie

Spring Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1615	Basic Electrical	3
ATEC1625	Chassis Electrical	3
PHYS2001	Introductory Physics	3

Total Credits 17

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose one course from MnTC Goal Area 7	3

Total Credits 6

Fall Semester

ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1620	Starting and Charging Systems	3
ATEC2685	Automotive Industry Internship I	5

Total Credits 16

Spring Semester

ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
	General Education Electives	3

Total Credits 16

Fall Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
	Choose one course from MnTC Goal Area 5	3

Total Credits 17

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 5

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

10/13/2020 : BP 5104 / EP 5105

Semester Sequence - Spring Start - Option 2

Offered at Brooklyn Park and Eden Prairie

Spring Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1615	Basic Electrical	3
ATEC1625	Chassis Electrical	3
PHYS2001	Introductory Physics	3

Total Credits 17

Summer Semester

ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	Choose 3 credits from MnTC Goal Area 7	3

Total Credits 6

Fall Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
ATEC2685	Automotive Industry Internship I	5

Total Credits 19

Spring Semester

ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
	General Education Electives	3

Total Credits 16

Fall Semester

ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1620	Starting and Charging Systems	3
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 14

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 5

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

10/13/2020 : BP 5104 / EP 5105

Semester Sequence - Spring Start - Fast Track

Offered at Brooklyn Park and Eden Prairie

Spring Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1615	Basic Electrical	3
ATEC1625	Chassis Electrical	3
PHYS2001	Introductory Physics	3

Total Credits 17

Summer Semester

ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1620	Starting and Charging Systems	3
	Choose one course from MnTC Goal Area 5	3
	Choose one course from MnTC Goal Area 7	3

Total Credits 17

Fall Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
ATEC2685	Automotive Industry Internship I	5

Total Credits 19

Spring Semester

ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
ENGL2121	Writing and Research	4
	or	
ENGL2125	Technical Writing	3
	General Education Electives	3

Total Credits 19

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 3 Credits

MnTC Goal Area 5

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Choose a Total of: 3 Credits

Graduation (72 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is

subject to change without notice.

10/13/2020 : BP 5104 / EP 5105

Automotive Technician (BP/EP) Diploma

Overview and Award Outcomes

Overview

The Automotive Mechanics Technician diploma prepares the student in all areas of automobile and light truck service, diagnosis and repair at an entry level. An automotive technician will diagnose, determine condition, estimate cost of repair and replace or repair various components in engines, powertrains, suspensions, brakes, electrical systems, fuel systems, emission controls and computer controlled systems.

Award Outcomes

Evaluate scan tool readings.
Evaluate vehicle suspension systems.
Evaluate engine condition using precision instruments.
Interpret wiring diagrams.
Perform digital multimeter (DMM) measurements.
Use transmission test equipment.
Analyze heating ventilation/air conditioning systems.
Interpret electronic service information.
Diagnose hydraulic system components.
Analyze driveline components.
Determine customer vehicle repair needs.

Career Opportunities

Due to increased vehicle ownership, longer useful life of vehicles and increased maintenance requirements of new and complicated automotive systems, the demand for trained automotive technicians is at an extremely high level and is increasing annually. A wide range of employment opportunities exist in dealerships, fleets, mass merchandisers, independent garages and service stations.

Program Requirements

Technical Studies Required 59 Credits

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1615	Basic Electrical	3
ATEC1620	Starting and Charging Systems	3
ATEC1625	Chassis Electrical	3
ATEC1705	Heating and Air Conditioning	4
ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
ATEC2100	Automotive Professional Service	2
ATEC2685	Automotive Industry Internship I	5

General Education Required 6 Credits

CCDS1040	Job Seeking Skills	2
EMSV1020	CPR/First Aid	1
PHYS2001	Introductory Physics	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 65

Semester Sequence - Fall Start

Offered at Brooklyn Park and Eden Prairie

First Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1615	Basic Electrical	3
ATEC1620	Starting and Charging Systems	3

Total Credits 16

Second Semester

ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1625	Chassis Electrical	3
ATEC2685	Automotive Industry Internship I	5
PHYS2001	Introductory Physics	3

Total Credits 17

Third Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
ATEC1820	Hybrid Electric Vehicle Systems	1
CCDS1040	Job Seeking Skills	2

Total Credits 17

Fourth Semester

ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
ATEC2100	Automotive Professional Service	2
EMSV1020	CPR/First Aid	1

Total Credits 15

Graduation (65 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/5/2020 : BP 5106 / EP 5107

Semester Sequence - Spring Start

Offered at Brooklyn Park and Eden Prairie

Spring Semester

ATEC1050	Introduction to Automotive Technology	2
ATEC1105	Engine Repair I	3
ATEC1110	Engine Repair II	3
ATEC1615	Basic Electrical	3
ATEC1625	Chassis Electrical	3
PHYS2001	Introductory Physics	3

Total Credits 17

Summer Semester

ATEC1405	Steering and Suspension	4
ATEC1505	Brakes	4
ATEC1620	Starting and Charging Systems	3
CCDS1040	Job Seeking Skills	2

Total Credits 13

Fall Semester

ATEC1205	Automatic Transmissions I	3
ATEC1210	Automatic Transmissions II	3
ATEC1305	Manual Drive Train & Axles	4
ATEC1705	Heating and Air Conditioning	4
ATEC2685	Automotive Industry Internship I	5

Total Credits 19

Spring Semester

ATEC1820	Hybrid Electric Vehicle Systems	1
ATEC1850	Ignition Systems	4
ATEC1855	Fuel Systems	4
ATEC1860	Engine Performance	4
ATEC2100	Automotive Professional Service	2
EMSV1020	CPR/First Aid	1

Total Credits 16

Graduation (65 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

2/6/2020 : BP 5106 / EP 5107

Ford ASSET

Automotive Technology (Ford ASSET) (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Ford Automotive Student Service Educational Training (ASSET) program is a factory authorized training program that is jointly sponsored by Ford Motor Company, Ford and Lincoln-Mercury Dealers, and Hennepin Technical College. It is designed to train automotive technicians to repair all the newer model Ford Motor Company vehicles. Students can only enter this program by special application and by the sponsorship of a Ford or Lincoln-Mercury dealership.

Award Outcomes

Analyze customer concerns.
Demonstrate safe service and repair procedures.
Navigate electronic service information.
Apply communication skills in the workplace.
Demonstrate a commitment to ethical and professional responsibilities in repair.
Utilize electronic service equipment.
Complete current Ford STST certifications.
Evaluate systems components using precision measuring equipment.
Identify problem-solving techniques used in Ford service repair.
Apply principles of mechanical concepts.

Career Opportunities

All students who successfully complete this program will be Ford certified in all STST specialty areas. They will be employed by Ford and/or Lincoln-Mercury dealers as dealership repair technicians. A large number of jobs exist for qualified automotive technicians in the metropolitan and rural communities. The potential to advance to service writer, service manager, sales positions, company representatives or other dealership management is excellent.

Program Requirements

Technical Studies Required 81 Credits

FMLR1200	Ford Electrical Systems	3
FDAS1250	Ford Gasoline Engine Performance I	2
FDAS1260	Ford Gasoline Engine Performance II	3
FMLR1301	Related Mechanical Skills	2
FDAS1420	Ford Driveline	3
FDAS1500	Engine Repair	3
FDAS1550	Engine Operation	2
FMLR1601	Ford Suspension and Alignment	3
FDAS1611	Noise Vibration Harshness (NVH)	3
FMLR1650	Ford Steering and Balance	2
FDAS1701	Ford Climate Control	3
FDAS1750	Ford Fuel Systems	2
FMLR1810	Ford Dealership Internship I	6
FMLR1820	Ford Dealership Internship II	6
FDAS2030	Ford Dealership Internship III	6
FDAS2040	Ford Dealership Internship IV	6
FDAS2055	Ford Dealership Summer Internship I	4
FDAS2060	Ford Dealership Summer Internship II	4
FDAS2230	Ford Car Transmissions	3
FDAS2240	Ford Truck Transmissions	3
FDAS2502	Ford Advanced Engine Performance	3
FDAS2552	Ford Diesel	4
FMLR2600	Ford Braking Systems	3
FDAS2650	Ford New Technology	2

General Education Required 15 Credits

COMM2050	Interpersonal Communication	3

ENGL2125	Technical Writing	3
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
SOCI2100	Introduction to Sociology	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 96

Semester Sequence

Offered at Brooklyn Park Only

First Semester

FMLR1200	Ford Electrical Systems	3
FMLR1301	Related Mechanical Skills	2
FMLR1650	Ford Steering and Balance	2
FMLR1810	Ford Dealership Internship I	6
FMLR2600	Ford Braking Systems	3
COMM2050	Interpersonal Communication	3

Total Credits 19

Second Semester

FDAS1500	Engine Repair	3
FDAS1550	Engine Operation	2
FDAS1750	Ford Fuel Systems	2
FMLR1601	Ford Suspension and Alignment	3
FMLR1820	Ford Dealership Internship II	6
ENGL2125	Technical Writing	3
SOCI2100	Introduction to Sociology	3

Total Credits 22

Summer Semester

FDAS1250	Ford Gasoline Engine Performance I	2
FDAS1701	Ford Climate Control	3
FDAS2055	Ford Dealership Summer Internship I	4

Total Credits 9

Third Semester

FDAS1260	Ford Gasoline Engine Performance II	3
FDAS2030	Ford Dealership Internship III	6
FDAS2230	Ford Car Transmissions	3
FDAS2240	Ford Truck Transmissions	3
PHYS2001	Introductory Physics	3

Total Credits 18

Fourth Semester

FDAS1420	Ford Driveline	3
FDAS1611	Noise Vibration Harshness (NVH)	3
FDAS2040	Ford Dealership Internship IV	6
FDAS2552	Ford Diesel	4
PHIL2100	Critical Thinking for College Success	3

Total Credits 19

Summer Semester

FDAS2060	Ford Dealership Summer Internship II	4
FDAS2502	Ford Advanced Engine Performance	3

FDAS2650	Ford New Technology	2

Total Credits 9

Graduation (96 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 5304 / EP

Maintenance Light Repair (BP) Occupational Certificate

Overview and Award Outcomes

Overview

The Ford Maintenance Light Repair certificate is designed to provide students will the skills necessary to successfully perform light maintenance service on domestic and import cars and light trucks. This one-year certificate will allow students to enter the automotive industry with advanced skills in basic service procedures and receive up to 25% of Ford training specialty training.

Award Outcomes

Demonstrate safe service and repair procedures.
Navigate electronic service information.
Utilize electronic service equipment.
Complete Ford STST certifications for the Quick Lane.
Identify problem solving techniques used in Ford service repair.

Career Opportunities

Maintenance and light service repair technicians will be able to perform jobs in the automotive light service industry such as Ford dealership quicklanes, independent service shops, and other franchise dealerships that perform light-duty maintenance. As a light service maintenance technician, the student will perform basic automotive maintenance and light repair such as oil changes, transmission flushes, tune-ups, and brake service. Furthermore, maintenance light repair technicians will assist journeyman in the day-to-day operations of vehicle repair.

Program Requirements

Technical Studies Required 13 Credits

FMLR1200	Ford Electrical Systems	3
FMLR1301	Related Mechanical Skills	2
FMLR1601	Ford Suspension and Alignment	3
FMLR1650	Ford Steering and Balance	2
FMLR2600	Ford Braking Systems	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 17 Credits

Any FDAS or FMLR course that is not required for this award may be used as an elective.

Recommended:

FMLR1810	Ford Dealership Internship I	6
FMLR1820	Ford Dealership Internship II	6

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Brooklyn Park Only

First Semester

FMLR1200	Ford Electrical Systems	3
FMLR1301	Related Mechanical Skills	2
FMLR1650	Ford Steering and Balance	2
FMLR2600	Ford Braking Systems	3
	Technical Studies Electives	8

Total Credits 18

Second Semester

FMLR1601	Ford Suspension and Alignment	3
	Technical Studies Electives	9

Total Credits 12

Technical Studies Electives

Any FDAS or FMLR course that is not required for this award may be used as an elective.

Recommended:

FMLR1810	Ford Dealership Internship I	6
FMLR1820	Ford Dealership Internship II	6

Choose a Total of: 9 Credits

Graduation (30 Credits)

A one-time $150.00 fee is added for access to Ford Web-based training.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/14/2020 : BP 5305 / EP

Marine, Motorsport and Outdoor Power Equipment Technology

Marine, Motorsport and Outdoor Power Equipment Technician (EP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

The Marine, Motorsport and Outdoor Power Equipment Technology degree prepares the student in all areas of the Marine, Motor Sports and Power Equipment as a repair and service technician. A marine/motor sports technician will diagnose, evaluate, estimate repair costs and repair various types of marine, motorcycle, power equipment and small engines.

Award Outcomes

Demonstrate ability to measure engine parts.
Employ skills and procedures to identify parts.
Service fuel Systems.
Service ignition systems.
Demonstrate troubleshooting and diagnostic skills.
Integrate technology into work processes such as scan tolls, service manuals online, etc.
Employ safety standards.
Service drive systems.
Explain air and liquid cooling systems.
Integrate customer service and communication skills into repair work.

Career Opportunities

The Marine, Motorsport and Outdoor Power Equipment Technology Associate in Applied Science degree will allow the graduate the opportunities to advance to careers in the major manufacturer's research and development departments. Service or sales representative positions would be available to a person holding an A.A.S. also. Another possible opportunity would be for a promotion to a supervisory position.

Program Requirements

Technical Studies Required 54 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2105	Motorcycle Transmissions and Clutch Service	3
MMST2110	Motorcycle Wheels and Suspension	3
MMST2126	Marine Lower Unit and Cooling System Service	3
MMST2140	Marine Tilt/Trim and Controls	3
MMST2175	Power Equipment Drive Systems	3
MMST2180	Power Equipment Accessory Maintenance	3
MMST2300	Advanced Fuel Systems	3
MMST2305	Advanced Electrical Systems	3
MMST2310	Engine Overhaul	3
MMST2315	Tune Up	3

General Education Required 3 Credits

	Choose 3 credits from MnTC Goal Area 2	3

General Education Elective 12 Credits

	Choose twelve credits of General Education from any three MnTC Goal Areas	12

Technical Studies Elective 3 Credits

Any Marine, Motorsport and Outdoor Power Equipment Technology (MMST) course that is not required for this award may be used as an elective.

Recommended:

MMST2320	Customizing Lab	1 - 3
MMST2325	EETC/Advanced Troubleshooting	3
MMST2340	Repair and Accessory Lab	3
MMST2350	Internship	1 - 3
MMST2400	Fuel Injection Systems	3

Total Associate in Applied Science Degree Credits 72

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 18

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3
MMST2175	Power Equipment Drive Systems	3
MMST2315	Tune Up	3
	General Education Electives	3

Total Credits 18

Third Semester

MMST2300	Advanced Fuel Systems	3
MMST2305	Advanced Electrical Systems	3
MMST2310	Engine Overhaul	3
	Technical Studies Electives	3
	General Education Electives	6

Total Credits 18

Fourth Semester

MMST2105	Motorcycle Transmissions and Clutch Service	3
MMST2110	Motorcycle Wheels and Suspension	3
MMST2126	Marine Lower Unit and Cooling System Service	3
MMST2140	Marine Tilt/Trim and Controls	3
MMST2180	Power Equipment Accessory Maintenance	3
	General Education Electives	3

Total Credits 18

Technical Studies Electives

Any Marine, Motorsport and Outdoor Power Equipment Technology (MMST) course that is not required for this award may be used as an elective.

Recommended:

MMST2320	Customizing Lab	1 - 3
MMST2325	EETC/Advanced Troubleshooting	3
MMST2340	Repair and Accessory Lab	3

MMST2350	Internship	1 - 3
MMST2400	Fuel Injection Systems	3

Choose a Total of: 3 Credits

General Education Electives

Hennepin Technical College's 2000-level general education courses meet the guidelines of the Minnesota Transfer Curriculum (MnTC).

Choose a Total of: 12 Credits

MnTC Goal Area 2

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5
MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

Choose a Total of: 3 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5404

Marine, Motorsport and Outdoor Power Equipment Technician (EP) Diploma

Overview and Award Outcomes

Overview

The Marine, Motorsport and Outdoor Power Equipment Technology degree prepares the student in all areas of the Marine, Motor Sports and Power Equipment as a repair and service technician. A marine/motor sports technician will diagnose, evaluate, estimate repair costs and repair various types of marine, motorcycle, power equipment and small engines.

Award Outcomes

Demonstrate ability to measure engine parts.
Employ skills and procedures to identify parts.
Service fuel Systems.
Service ignition systems.
Demonstrate troubleshooting and diagnostic skills.
Integrate technology into work processes such as scan tolls, service manuals online, etc.
Employ safety standards.
Service drive systems.
Explain air and liquid cooling systems.
Integrate customer service and communication skills into repair work.

Career Opportunities

Marine, Motorsport and Outdoor Power Equipment Technicians find employment at marine, motorcycle or snowmobile dealerships, distributors and manufacturers. Technicians are also in demand at service repair shops and businesses that service and repair motorcycles, outboard and inboard boat motors and lawn and garden equipment.

Program Requirements

Technical Studies Required 54 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2105	Motorcycle Transmissions and Clutch Service	3
MMST2110	Motorcycle Wheels and Suspension	3
MMST2126	Marine Lower Unit and Cooling System Service	3
MMST2140	Marine Tilt/Trim and Controls	3
MMST2175	Power Equipment Drive Systems	3
MMST2180	Power Equipment Accessory Maintenance	3
MMST2300	Advanced Fuel Systems	3
MMST2305	Advanced Electrical Systems	3
MMST2310	Engine Overhaul	3
MMST2315	Tune Up	3

General Education Required 2 Credits

CCDS1040	Job Seeking Skills	2

General Education Elective 5 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 3 Credits

Any Marine, Motorsport and Outdoor Power Equipment Technology (MMST) course that is not required for this award may be used as an elective.

Recommended:

MMST2320	Customizing Lab	1 - 3
MMST2325	EETC/Advanced Troubleshooting	3
MMST2340	Repair and Accessory Lab	3
MMST2350	Internship	1 - 3
MMST2400	Fuel Injection Systems	3

Total Diploma Credits 64

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3

Total Credits 15

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3
MMST2175	Power Equipment Drive Systems	3
MMST2315	Tune Up	3
	General Education Electives	3

Total Credits 18

Third Semester

MMST2300	Advanced Fuel Systems	3
MMST2305	Advanced Electrical Systems	3
MMST2310	Engine Overhaul	3
CCDS1040	Job Seeking Skills	2
	Technical Studies Electives	3
	General Education Electives	2

Total Credits 16

Fourth Semester

MMST2105	Motorcycle Transmissions and Clutch Service	3
MMST2110	Motorcycle Wheels and Suspension	3
MMST2126	Marine Lower Unit and Cooling System Service	3
MMST2140	Marine Tilt/Trim and Controls	3
MMST2180	Power Equipment Accessory Maintenance	3

Total Credits 15

Technical Studies Electives

Any Marine/Motorsport and Outdoor Power Equipment Technology (MMST) course that is not required for this award may be used as an elective.

Recommended:

MMST2320	Customizing Lab	1 - 3
MMST2325	EETC/Advanced Troubleshooting	3
MMST2340	Repair and Accessory Lab	3
MMST2350	Internship	1 - 3
MMST2400	Fuel Injection Systems	3

Choose a Total of: 3 Credits

General Education Electives

If a General Education course is required it may not be used as a General Education Elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements. A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 5 Credits

Graduation (64 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5404

General Maintenance Technician (EP) Occupational Certificate

Overview and Award Outcomes

Overview

The Marine, Motorsport and Outdoor Power Equipment program at Hennepin Technical College is divided into coursework specific to each aspect of the industry. The emphasis of the General Maintenance Technician Certificate is to provide students with the foundational skills and knowledge needed for a career pathway into more advanced level courses or into an entry-level employment in the industry.

Award Outcomes

Perform quality checks on completed work.
Employ safety standards.
Employ skills and procedures to identify parts.
Service fuel systems.
Demonstrate troubleshooting and diagnostic skills.
Integrate customer service and communication skills into repair work.

Career Opportunities

General Maintenance Technicians are qualified for employment in entry-level, general maintenance positions in the Marine, Motorsport and Outdoor Power Equipment industry. Graduates of this certificate can find employment as set-up and maintenance technicians for dealerships, distributers, manufacturers and maintenance facilities.

Program Requirements

Technical Studies Required 30 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2175	Power Equipment Drive Systems	3
MMST2315	Tune Up	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3

Total Credits 15

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3
MMST2175	Power Equipment Drive Systems	3
MMST2315	Tune Up	3

Total Credits 15

Graduation (30 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5409

Motorcycle Technician (EP) Occupational Certificate

Overview and Award Outcomes

Overview

Motorcycle Technicians service, diagnose and repair motorcycles.

Award Outcomes

Perform quality checks on completed work.
Service fuel Systems.
Service ignition systems.
Employ safety standards.
Service drive systems.
Integrate customer service and communication skills into repair work.

Career Opportunities

Motorcycle Technicians find employment at motorcycle dealerships, distributors and manufacturers. Technicians are also in demand at service repair shops and businesses.

Program Requirements

Technical Studies Required 30 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2105	Motorcycle Transmissions and Clutch Service	3
MMST2110	Motorcycle Wheels and Suspension	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3

Total Credits 15

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3
MMST2105	Motorcycle Transmissions and Clutch Service	3

MMST2110	Motorcycle Wheels and Suspension	3

Total Credits 15

Graduation (30 credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5405

Outboard Technician (EP) Occupational Certificate

Overview and Award Outcomes

Overview

Outboard Marine Technicians service, diagnose and repair outboard motors.

Award Outcomes

Perform quality checks on completed work.
Service fuel Systems.
Service ignition and electrical systems.
Employ safety standards.
Service drive systems.
Integrate customer service and communication skills into repair work.

Career Opportunities

Outboard Marine Technicians find employment at marine dealerships, distributors and manufacturers. Technicians are also in demand at service repair shops and businesses.

Program Requirements

Technical Studies Required 30 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2126	Marine Lower Unit and Cooling System Service	3
MMST2140	Marine Tilt/Trim and Controls	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3

Total Credits 15

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3
MMST2126	Marine Lower Unit and Cooling System Service	3

MMST2140	Marine Tilt/Trim and Controls	3

Total Credits 15

Graduation (30 Credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5406

Power Equipment Certificate (EP) Occupational Certificate

Overview and Award Outcomes

Overview

Power Equipment student will perform repairs on a variety of lawn and garden equipment. Lawn and garden equipment will include lawn mowers, snow blowers and most hand-held chore performing devices.

Award Outcomes

Perform quality checks on completed work.
Service fuel Systems.
Service ignition and electrical systems.
Employ safety standards.
Service drive systems.
Integrate customer service and communication skills into repair work.

Career Opportunities

Employment for the power equipment graduate will have a wide range of opportunities including lawn and garden shops, rental shops, golf course maintenance facilities, farm equipment dealerships, and many other small engine repair shops.

Program Requirements

Technical Studies Required 30 Credits

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1130	Introduction to Drive Systems	3
MMST1145	Trailer Maintenance	3
MMST2175	Power Equipment Drive Systems	3
MMST2180	Power Equipment Accessory Maintenance	3

General Education Required 0 Credits

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Occupational Certificate Credits 30

Semester Sequence

Offered at Eden Prairie Only

First Semester

MMST1100	Introduction to Marine and Motorsport Technology	3
MMST1105	Introduction to Engine Theory	3
MMST1110	Introduction to Fuel Systems	3
MMST1115	Introduction to Electrical Systems	3
MMST1130	Introduction to Drive Systems	3

Total Credits 15

Second Semester

MMST1120	Introduction to Ignition Systems	3
MMST1125	Service Management	3
MMST1145	Trailer Maintenance	3

MMST2175	Power Equipment Drive Systems	3
MMST2180	Power Equipment Accessory Maintenance	3

Total Credits 15

Graduation (30 credits)

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP / EP 5407

Medium/Heavy Truck Technology

Medium/Heavy Truck Technology (BP) Associate in Applied Science Degree

Overview and Award Outcomes

Overview

Students in the Medium/Heavy Truck Technology A.A.S. degree program are sponsored by a trucking company. Students split their learning between taking courses at the college and developing skills through paid internships at truck repair companies. Students spend the first-half of each semester taking courses at the college and the second-half of each semester on a paid internship developing the skills just learned in class. This schedule is repeated throughout the two-year program. The college assists students in obtaining a trucking industry sponsor for the internship portion of the program.

This program is designed to provide individuals with the knowledge and skills needed to be an entry-level technician in the trucking industry. Students will practice their skills in a well equipped lab and develop production level skills at their industry sponsored company. Some of the areas of study are electrical and electronic systems, steering and suspension, air and hydraulic ABS brake systems and vehicle maintenance. Students will perform diesel engine troubleshooting, overhaul procedures, and tune-ups on both mechanical and electronic engines. Clutch, transmission, and drive axle diagnosis, repair and overhaul will be taught along with preventive maintenance procedures. Instruction will include classroom theory, shop demonstrations, and hands-on skill development. Much of the lab work is performed on actual vehicles or engines in operating condition.

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial drivers license and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Award Outcomes

Perform vehicle inspection procedures.
Perform preventative maintenance.
Repair vehicle electrical systems.
Repair truck brake systems.
Analyze ABS brake systems.
Repair truck steering systems.
Repair truck suspension systems.
Diagnose truck HVAC systems.
Repair driveline components.
Overhaul truck transmissions.
Overhaul diesel engines.
Interpret diagnostic tool readings.

Career Opportunities

Career opportunities as a skilled truck technician are available in truck dealerships, leasing companies, trucking fleets, and independent truck repair shops. Students may choose other options such as railroads, heavy equipment, mass transit companies, or marine applications. Electronic diesel engines, transmissions, and ABS brake systems have revolutionized the trucking industry creating a great demand for the skilled truck technician.

Program Requirements

Technical Studies Required 79 Credits

MHTT1002	Truck Technology Fundamentals	2
MHTT1011	Electricity in Truck Technology I	4
MHTT1015	Electricity in Truck Technology II	3
MHTT1020	Vehicle Service	3
MHTT1031	Internship/Industry Partnership I	6
MHTT1100	Hydraulic Brake Systems	3
MHTT1115	Air Brake Systems and Controls	3
MHTT1131	Internship/Industry Partnership II	6
MHTT1200	Steering and Suspension Systems	3
MHTT1210	Clutch and Driveline	3
MHTT1300	Introduction to Diesel Engines	3
MHTT1321	Heating and Air Conditioning	3

MHTT1331	Internship/Industry Partnership III	6
MHTT1401	Diesel Engine II	3
MHTT1410	Transmission Technologies	3
MHTT1420	Drive Axles	3
MHTT1431	Internship/Industry Partnership IV	6
MHTT1501	Diesel Engine III	3
MHTT1512	Diesel Engine IV	4
MHTT1532	Internship/Industry Partnership V	9

General Education Required 15 Credits

COMM2050	Interpersonal Communication	3
	or	
	Any 3 credit course from MnTC Goal Area 7	3
ENGL2125	Technical Writing	3
	or	
	Choose 3 credits from MnTC Goal Area 1	3
PHIL2100	Critical Thinking for College Success	3
	or	
	Choose 3 credits from MnTC Goal Area 2	3
PHYS2001	Introductory Physics	3
	or	
	Any 3 credit course from MnTC Goal Area 3	3
SOCI2100	Introduction to Sociology	3
	or	
	Choose 3 credits from MnTC Goal Area 5	3

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Associate in Applied Science Degree Credits 94

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MHTT1002	Truck Technology Fundamentals	2
MHTT1011	Electricity in Truck Technology I	4
MHTT1020	Vehicle Service	3
MHTT1031	Internship/Industry Partnership I	6
COMM2050	Interpersonal Communication	3
	or	
	Choose 3 credits from MnTC Goal Area 7	3

Total Credits 18

Second Semester

MHTT1100	Hydraulic Brake Systems	3
MHTT1115	Air Brake Systems and Controls	3
MHTT1131	Internship/Industry Partnership II	6
MHTT1200	Steering and Suspension Systems	3
ENGL2125	Technical Writing	3
	or	
	Choose 3 credits from MnTC Goal Area 1	3

Total Credits 18

Summer Semester

MHTT1015	Electricity in Truck Technology II	3
MHTT1300	Introduction to Diesel Engines	3
MHTT1321	Heating and Air Conditioning	3
SOCI2100	Introduction to Sociology	3
	or	
	Choose 3 credits from MnTC Goal Area 5	3

Total Credits 12

Third Semester

MHTT1210	Clutch and Driveline	3
MHTT1331	Internship/Industry Partnership III	6
MHTT1410	Transmission Technologies	3
MHTT1420	Drive Axles	3
PHYS2001	Introductory Physics	3
	or	
	Choose 3 credits from MnTC Goal Area 3	3

Total Credits 18

Fourth Semester

MHTT1401	Diesel Engine II	3
MHTT1431	Internship/Industry Partnership IV	6
MHTT1501	Diesel Engine III	3
MHTT1512	Diesel Engine IV	4
PHIL2100	Critical Thinking for College Success	3
	or	
	Choose 3 credits from MnTC Goal Area 2	3

Total Credits 19

Summer Semester

MHTT1532	Internship/Industry Partnership V	9

Total Credits 9

MnTC Goal Area 1

A complete list of MnTC courses and Goal Areas that can be used to meet General Education requirements can be found at www.hennepintech.edu. The same course cannot satisfy more than one MnTC Goal Area requirement.

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
COMM2060	Small Group Communication	3
COMM2130	Public Speaking	3
ENGL2001	Workplace Correspondence	2
ENGL2050	Short Form Composition and Reporting	4
ENGL2121	Writing and Research	4
ENGL2125	Technical Writing	3
ENGL2130	Introduction to Creative Writing	3

MnTC Goal Area 2

BIOL2001	Biology in Society	4
BIOL2003	Nutrition and Health	3
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
COMM2060	Small Group Communication	3
ECON2100	Consumer Economics	3
INFS2000	Research Skills in the Information Age	3
MATH2050	Applications of Quantitative Reasoning	3
MATH2250	Precalculus with Trigonometry	5

MATH2300	Calculus I	5
PHIL2100	Critical Thinking for College Success	3
PHYS2001	Introductory Physics	3
PHYS2015	Introductory Physics II	3
SOCI2100	Introduction to Sociology	3

MnTC Goal Area 3

BIOL2001	Biology in Society	4
BIOL2005	General Biology I	4
BIOL2045	Human Biology	4
BIOL2105	General Biology II	4
BIOL2125	Anatomy and Physiology I	4
BIOL2225	Anatomy and Physiology II	4
BIOL2235	Microbiology	4
CHEM2000	Introduction to Chemistry	4
CHEM2201	General, Organic, and Biological Chemistry Foundations	4
PHYS2001	Introductory Physics	3
PHYS2005	College Physics I	4
PHYS2015	Introductory Physics II	3

MnTC Goal Area 5

ECON2100	Consumer Economics	3
ECON2200	Principles of Microeconomics	3
ECON2300	Principles of Macroeconomics	3
PSYC2300	General Psychology	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
PSYC2330	Abnormal Psychology	3
SOCI2000	Marriage and Family	3
SOCI2100	Introduction to Sociology	3
SOCI2120	Introduction to Criminal Justice	3
SOCI2130	Food, Culture and Society	3
SOCI2200	Racial and Ethnic Relations	3

MnTC Goal Area 7

COMM2020	Intercultural Communication	3
COMM2050	Interpersonal Communication	3
LANG2000	American Sign Language/Deaf Culture I	3
LANG2010	American Sign Language/Deaf Culture II	3
PSYC2310	Psychology Throughout the Lifespan	3
PSYC2320	Psychology of Living in the 21st Century	3
SOCI2000	Marriage and Family	3
SOCI2200	Racial and Ethnic Relations	3

Graduation (94 Credits)

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial driver's license and be able to pass and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice.

4/15/2020 : BP 5204 / EP

Medium/Heavy Truck Drivetrain Technician (BP) Diploma

Overview and Award Outcomes

Overview

Students in this Medium/Heavy Truck Drivetrain Technician program will split their learning between the college and industry at a paid internship site. This is a one-year, three-semester course of instruction including: classroom theory, shop demonstrations, and hands-on skill development. Some of the areas of study are: clutch and driveline, manual transmissions, drive axles, mechanical and electronically controlled diesel engines. Diagnosis, repair, and overhaul procedures will be performed on actual vehicles and engines in operating condition.

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial drivers license and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Prerequisite: Graduation from the Medium/Heavy Truck Maintenance Technician program or two years of truck mechanic experience.

Award Outcomes

Repair driveline components.
Overhaul truck transmissions.
Overhaul diesel engines.
Interpret diagnostic tool readings.

Career Opportunities

Career opportunities as a skilled maintenance technician are available in truck dealerships, leasing companies, truck fleets, and independent truck repair shops. Electronic diesel engines, transmissions, and ABS brake systems have revolutionized the trucking industry creating a great demand for the skilled truck technician.

Program Requirements

Technical Studies Required 40 Credits

MHTT1210	Clutch and Driveline	3
MHTT1331	Internship/Industry Partnership III	6
MHTT1401	Diesel Engine II	3
MHTT1410	Transmission Technologies	3
MHTT1420	Drive Axles	3
MHTT1431	Internship/Industry Partnership IV	6
MHTT1501	Diesel Engine III	3
MHTT1512	Diesel Engine IV	4
MHTT1532	Internship/Industry Partnership V	9

General Education Required 0 Credits

General Education Elective 4 Credits

Any HTC 1000 level or higher general education course may be used to satisfy the elective requirements.

Technical Studies Elective 0 Credits

Total Diploma Credits 44

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MHTT1210	Clutch and Driveline	3
MHTT1331	Internship/Industry Partnership III	6
MHTT1410	Transmission Technologies	3
MHTT1420	Drive Axles	3
	General Education Electives	2

Total Credits 17

Second Semester

MHTT1401	Diesel Engine II	3
MHTT1431	Internship/Industry Partnership IV	6
MHTT1501	Diesel Engine III	3
MHTT1512	Diesel Engine IV	4
	General Education Electives	2

Total Credits 18

Summer Semester

MHTT1532	Internship/Industry Partnership V	9

Total Credits 9

General Education Electives

If a General Education course is required it may not be used as a General Education elective.

Minnesota Transfer Curriculum (MnTC) may also be used to meet General Education Elective requirements.

A complete list of MnTC courses can be found at www.hennepintech.edu.

CCDS1000	College Success Seminar	1
CCDS1020	Interviewing Skills	1
CCDS1040	Job Seeking Skills	2
CCDS1100	Student Success	3
COMM1050	Communication in the Workplace	2
COMM1060	Career Portfolio	3
CPLT1000	Computer Keyboarding	2
CPLT1005	Advanced Keyboarding and Document Processing	3
CPLT1100	Computer Essentials	3
CPLT1200	Introduction to Macintosh	3
EMSV1020	CPR/First Aid	1
ENGL1010	Business English	3
ENGL1021	Essay Fundamentals	3
ENGL1026	Writing for Careers	3
MATH1007	Math for the Trades	2
MATH1020	Geometry and Trigonometry	2
MATH1050	Math Pathways Plus for College and Careers	4
MATH1060	Math Pathways for College and Careers	3
MATH1500	Beginning Algebra	3
MATH1650	Mathematical Literacy	4
MATH1700	Intermediate Algebra	3
METS1000	Computers in Manufacturing	3
PHYS1000	Fundamentals of Physics	2

Choose a Total of: 4 credits

Graduation (44 Credits)

Prerequisite: Student must graduate from the medium/Heavy Truck Maintenance Technician major or have two years of truck mechanic experience.

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial driver's license and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice

4/15/2020 : BP 5206 / EP

Medium/Heavy Truck Maintenance Technician (BP) Diploma

Overview and Award Outcomes

Overview

Students in this Medium/Heavy Truck Maintenance Technician program will split their learning between the college and industry at a paid internship site. This is a one-year, three-semester course of instruction including: classroom theory, shop demonstrations, and hands-on skill development. Some of the areas of study are: truck preventive maintenance, electrical systems, air and hydraulic ABS brake systems, heating and air conditioning systems, diesel engine systems, and steering and suspension systems. Much of the shop work is performed on actual vehicles and engines in operating condition.

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial drivers license and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Award Outcomes

Perform vehicle inspection procedures.
Perform preventative maintenance.
Repair vehicle electrical systems.
Repair truck brake systems.
Analyze ABS brake systems.
Repair truck steering systems.
Repair truck suspension systems.
Diagnose truck HVAC systems.
Interpret diagnostic tool readings.

Career Opportunities

Career opportunities as a skilled maintenance technician are available in truck dealerships, leasing companies, trucking fleets, and independent truck repair shops.

Program Requirements

Technical Studies Required 39 Credits

MHTT1002	Truck Technology Fundamentals	2
MHTT1011	Electricity in Truck Technology I	4
MHTT1015	Electricity in Truck Technology II	3
MHTT1020	Vehicle Service	3
MHTT1031	Internship/Industry Partnership I	6
MHTT1100	Hydraulic Brake Systems	3
MHTT1115	Air Brake Systems and Controls	3
MHTT1131	Internship/Industry Partnership II	6
MHTT1200	Steering and Suspension Systems	3
MHTT1300	Introduction to Diesel Engines	3
MHTT1321	Heating and Air Conditioning	3

General Education Required 4 Credits

MATH1007	Math for the Trades	2
COMM1050	Communication in the Workplace	2

General Education Elective 0 Credits

Technical Studies Elective 0 Credits

Total Diploma Credits 43

Semester Sequence

Offered at Brooklyn Park Only

First Semester

MHTT1002	Truck Technology Fundamentals	2
MHTT1011	Electricity in Truck Technology I	4

MHTT1020	Vehicle Service	3
MHTT1031	Internship/Industry Partnership I	6
COMM1050	Communication in the Workplace	2

Total Credits 17

Second Semester

MHTT1100	Hydraulic Brake Systems	3
MHTT1115	Air Brake Systems and Controls	3
MHTT1131	Internship/Industry Partnership II	6
MHTT1200	Steering and Suspension Systems	3
MATH1007	Math for the Trades	2

Total Credits 17

Third Semester

MHTT1015	Electricity in Truck Technology II	3
MHTT1300	Introduction to Diesel Engines	3
MHTT1321	Heating and Air Conditioning	3

Total Credits 9

Graduation (43 Credits)

Students entering the Medium/Heavy Truck Technology program must be eligible to obtain a commercial driver's license and be able to pass and be able to pass a DOT (Department of Transportation) physical, drug screening, and background check as a condition of employment for the internship portion of the program.

Semester listings reflect the recommended sequence. Due to circumstances beyond our control, the information herein is subject to change without notice

4/15/2020 : BP 5205 / EP

Course Outlines

The following course descriptions are alphabetically ordered by rubric or subject area (ABCT through WLDG).

Chemistry	CHEM (p. 754)
Communication	COMM (p. 764)
Computer Literacy	CPLT (p. 768)
Economics	ECON (p. 795)
English	ENGL (p. 847)
English for Speakers of Other Languages	ESOL (p. 870)
Health Science (Broad Field)	HLTH (p. 940)
Information Science	INFS (p. 977)
Mathematics	MATH (p. 1077)
Philosophy	PHIL (p. 1177)
Physics	PHYS (p. 1181)
Psychology	PSYC (p. 1208)
Sociology	SOCI (p. 1222)

Health Careers

Dental Assistant	DNTL (p. 786)
Emergency Medical Services	EMSV (p. 814)
Health Science (Broad Field)	HLTH (p. 940)
Health Unit Coordinator	HLUC (p. 943)
Health Care Core Curriculum	HCCC (p. 935)
Medical Assistant	MAST (p. 1068)
Medical Office Careers	OFCR (p. 1173)
Nursing Assistant	NAHA (p. 1165)
Pharmacy Technology	PHRM
Practical Nursing	NURS (p. 1169)

ABCT - Auto Body Collision Technology

ABCT 1145 - Cutting, Heating and MIG Welding (3)

Students will learn how to use oxy-acetylene cutting, heating, and metal inert gas (MIG) welding on automotive sheet metal. Students will become familiar with how the MIG welding process are used, requirements for metal joining processes and their application to auto collision repair.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze MIG welding
Analyze Gas welding
Identify procedures for safe handling of high pressure gas cylinders
Apply industry standard welds
Perform proper MIG welding technics
Adjust welders
Determine the correct welder type, (electrode, wire type, diameter, and gas) to be used in a specific welding situation
Set up welding equipment
Explain proper weld joints for industry standard
Determine proper protection techniques when welding on a vehicle
Explain proper safety procedures when welding on vehicles with electronic modules

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ABCT 1150 - Trim, Moveable Glass and Hardware (2)

Many repairs made to vehicle doors and other glass installations require the removal and installation of glass. Proper removal and installation is necessary to prevent damage to the glass or vehicle. Improper removal and installation can also cause wind noise and water leaks. Selection of proper tools, safe use of tools and proper removal procedures will be emphasized in this course. Installation procedures will be covered.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Inspect, (run channels, glass, power mechanisms,) and related controls
Perform personal and environmental safety
Replace, removable, manually or power operated roof panel
Remove, replace exterior trim
Identify types of auto glass

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 1155 - Metal Straightening and Body Filler I (4)

This course will cover metal straightening, the purpose of plastic fillers and how to use them for their intended purpose in autobody repair.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply metal straightening procedures
Differentiate between types of tools
Protect autobody parts
Exercise metal shrinking procedures
Exercise metal grinding procedures
Identify the uses of plastic fillers
Demonstrate mixing plastic filler
Manipulate plastic filler
Employ plastic filler sanding procedures
Manipulate plastic filler to correct contour
Assess checking straightness
Demonstrate metal finishing techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 1160 - Bolt-on, Weld-on Panel Replacement and Alignment (4)

Proper use and selection of tools is very important to properly remove, install and align bolt-on-panels. Properly

removing, installing and aligning bolt-on-parts is essential to restoring the vehicle to pre-accident condition. Proper tools and equipment along with proper techniques are essential for the removal and replacement of weld-on-panels. The fit and finish of the final repair is determined by proper panel installation. Alignment to adjacent panels, gaps at door and decklid, panel warpage and damage to adjacent panels are major factors in the quality of the finished product.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify body tools
Evaluate fasteners
Identify removal procedures of broken fasteners
Demonstrate different panel alignment methods
Demonstrate bolt on panel removal procedures
Demonstrate bolt on panel removal
Model welding procedures
Demonstrate quarter panel removal
Facilitate outer door panel welding
Analyze door frame damage
Identify corrosion protection procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 1165 - Using Body Filler II (2)

Proper finish of plastic body filler in a quick, efficient manner is necessary to minimize labor costs and maximize earnings. At the completion of this course the student will be able to repair a heavily damaged panel in the most cost effective manner.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manipulate shrink stretched panel areas to proper contour using heat
Demonstrate hammer and dolly techniques
Identify different types of panels
Repair panels
Identify different types of tools

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 1235 - Finish Defects (2)

Today`s vehicles have finishes that are very refined and free from noticeable defects. To maintain and restore these features in a finish, the technician will learn to identify types of finish defects and the proper correction procedures using the least aggressive methods. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify paint film problems
Perform personal and environmental safety
Analyze finish defects
Perform repair techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ABCT 1240 - Detailing (2)

This course is designed to teach the technician specific skills needed to enter the field of reconditioning on new and used cars. It includes buffing and polishing the exteriors, cleaning and detailing the interior, cleaning and painting the engine compartment and installing body accent stripes and moldings. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate tasks involved in detailing vehicles
Apply compounds, polishes, and waxes
Demonstrate the use of buffing equipment and techniques
Analyze how to wet-sand defects in top coats
Apply decorative decals or stripes
Examine interior, exterior, and glass for cleanliness

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 1250 - Auto Body Painting Internship (1 - 4)

Following internship guidelines and guidelines in all previous successfully completed courses, the technician will work in a designated auto body repair facility with a journeyman and paint vehicles to manufacturers specifications.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit enthusiasm.
Demonstrate initiative.
Display judgment.
Demonstrate courtesy.
Display punctuality.
Demonstrate dependability.
Organize work area.
Create successful working relationship.
Demonstrate safe work habits.
Follow prescribed procedures.
Demonstrate customer relations.
Demonstrate cooperation.
Exhibit professionalism.
Maintain work stations.
Perform shop duties (1-8 hours).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 1-4

ABCT 1255 - Environmental Health, Safety and Equipment Preparation for Finishes (4)

The student will develop a plan for refinishing a vehicle using the correct operation of equipment and paint. Concerns for environmental health and safety will be followed and enforced. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain EPA hazardous waste disposal regulations
Illustrate OSHA standards for fire protection equipment
Analyze personal paint shop safety
Evaluate different types of paint
Identify vehicle color codes
Develop a plan for refinishing using a total product system
Prepare painting environment
Practice daily clean up
Demonstrate mixing paint using a formula
Identify how a paint system is applied by the manufacturer
Identify a vehicle color code
Use vehicle color codes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 1260 - Surface Preparing and Finish Application (4)

This course will enable the technician to identify type and color of a finish. The student will understand undercoat materials, sanding procedures and masking procedures in the preparation of the surface for refinishing.

Manufacturers of today`s vehicles use various refinish systems such as single stage, base coat, clearcoat and tri-stage. To properly refinish a vehicle and meet customer expectations, the technician will understand and apply these types of finishes. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply finish using appropriate spray techniques
Apply selected product on test panel
Administer selected product on test panel
Use manufactures' recommendations
Simulate safe workstation
Model daily shop duties
Demonstrate environmental safety standards
Prepare broken areas for refinishing
Protect unfinished surfaces
Apply single stage colorcosts
Apply base coat finishes
Administer clearcoat finishing
Use tri-coat finishes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

ABCT 1265 - Tinting and Blending (4)

The students will learn how to achieve a blendable match with all colors. Students will become familiar with paint application problems and the use of preventive measures. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Plot solid colors
Plot metallic colors
Differentiate colors for match test
Apply knowledge of color movement
Apply base-coat blend
Apply clear coat
Use multiple finish coat blends

Analyze a tinting formula to achieve a blendable match
Demonstrate blend repair
Identify defects caused by spray techniques
Identify problems caused by drying and curing
Analyze paint problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 1300 - Auto Body Structural Repair Internship I (4)

Following internship guidelines and guidelines in all previous successfully completed courses, the technician will work in a designated auto body repair facility with a journeyman and repair vehicles to manufacturers specifications in non-structural repairs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit enthusiasm.
Demonstrate initiative.
Display judgment.
Demonstrate courtesy.
Display punctuality.
Demonstrate dependability.
Organize work area.
Create successful working relationship.
Demonstrate safe work habits.
Follow instructions from assigned Journeyman.
Demonstrate customer relations.
Demonstrate cooperation.
Exhibit professionalism.
Maintain work stations.
Perform shop duties.
Perform personal and environmental safety (daily).
Advance skills as Internship progresses.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 4

ABCT 1305 - Auto Body Structural Repair Internship II (4)

The technician will work in a designated auto body repair facility with a journeyman and repair vehicles to manufacturers specifications.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit enthusiasm.
Demonstrate initiative.
Display judgment.
Demonstrate courtesy.
Display punctuality.
Demonstrate dependability.
Organize work area.
Create successful working relationship.
Demonstrate safe work habits.
Follow prescribed procedures.
Demonstrate customer relations.
Demonstrate cooperation.
Exhibit professionalism.
Maintain work stations.
Work with journeyman on structural repair and replacement.
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 4

ABCT 1400 - Collision Damage Analysis (3)

Students will have the opportunity to learn about various vehicle designs, manufacturing processes, energy management processes, repair issues, and measuring for repair processes. Students will be able to recognize damage to various mechanical components, interior components, and exterior components. Repair processes to manufactures guidelines of finish, fit-up and proper corrosion protection will also be covered.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify 5 types of collision damage
Diagnose direct damage repair
Select clamping procedures for tie downs
Describe the proper repair of a uni-body vehicle
Apply knowledge of different metals used in automotive construction
Identify five type of frame damage
Illustrate proper stress relieving procedures
Analyze extent indirect damage
Illustrate electronic measuring

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ABCT 1405 - Estimating (2)

The student will be introduced to estimating procedures which include identifying vehicle components, selecting appropriate replacement parts, labor costs, utilizing manual estimating systems and computerized estimating systems. The students will create damage reports from this information including calculating parts, labor, supplies and materials for accurate repair costs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the collision repair estimate.
Identify a damage report.
Select a damage report.
Identify vehicle data.
Identify vehicle components.
Identify damage types.
Determine repair strategy.
Identify mechanical damage.
Identify a computer form system.
Identify a database information system.
Describe a digital imaging system.
Demonstrate system use.
Maintain work stations.

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 2

ABCT 1410 - Customer Management (2)

Students learn appropriate industry terminology, measuring and improving levels of customer service, interpreting body language, conflict resolution, telephone and in-person communication skills, personal conduct and business ethics, and the completion of paperwork related to auto body customer management functions.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Discuss customer service strategies
Describe challenges in customer service systems
Apply decision making and problem solving skills
Apply conflict management skills
Develop Develop listening skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ABCT 1415 - Estimating Internship (2)

The apprentice estimator will work in a designated auto body repair facility along side an experience estimator following internship guidelines and guidelines in all previously completed courses. Students participate in writing estimates and facilitating repair processes. Students will also understand customer needs, repair costs, insurance company requirements, customer delivery and follow up of all repairs.

Prerequisite: ABCT1400, ABCT1405 and ABCT1410

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine the purpose of a collision repair estimate
Evaluate parts information
Analyze a damage report
Determine repair strategy
Demonstrate estimate procedures
Identify a vehicle color code

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 2

ABCT 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1-4

ABCT 2146 - Electrical and Electronic Systems (2)

At the completion of this course, the student will be able to correctly diagnose and repair electrical problems following a collision. Understanding electrical systems used to restore vehicles to pre-accident condition is stressed in this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify types of voltage
Perform voltage checks
Examine wiring
Check broken wiring
Examine electrical components
Change electrical components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 2000 - Advanced Welding Methods (1)

Modern vehicle designs have very exacting requirements regarding metal joining processes used in their construction and repair. Technicians will be familiar with these processes and will use advanced methods in the duplication of collision repairs.

Prerequisite: ABCT1145

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify set up procedures for squeeze type resistance spot welders.
Perform set up procedures for squeeze type.
Perform spot weld procedures on sheet metal.
Identify TIG welder set up procedures.
Perform TIG welder set up procedures.
Perform aluminum welds with TIG welder.
Identify set up procedures for aluminum welding with MIG welds.
Set up MIG welder for aluminum welding.
Identify oxy-acetylene aluminum welding procedures.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

ABCT 2006 - Stationary Glass Replacement (1)

The student will be able to identify different types of glass, assess what types of adhesion methods are used and install stationary glass. The student will check for wind noise and water leaks. The student will also be introduced to laminated glass repair systems.

Prerequisite: ABCT1150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain glued in glass installation procedures
Develop procedure to install glued in glass
Validate proper installation of glued in glass

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

ABCT 2015 - Steering and Suspension (2)

Driving performance problems after collision repairs can result in customer complaints. Accurate diagnosis and repair of wheel and tire conditions can lead to customer satisfaction.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify tire constructions
Analyze steering systems
Diagnose alignment concerns
Identify accident steering column concerns
Interpret front and rear suspension systems.
Explain 4 wheel alignment procedures
Produce completed four wheel alignment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 2040 - Restraint Systems (1)

This course will teach theory and practical applications of automotive restraint systems along with diagnosis and service.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Verify proper operation of Supplemental Restraint Systems (SRS)
Select procedures to disassemble the SRS system according to manufacturer's specifications
Diagnose SRS faults and properly repair
Develop correct procedures for replacing SRS components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2051 - Damage Analysis and Straightening Structural Parts (4)

The students will learn how to look for all types of damage in all vehicle designs including hidden damages that are often overlooked in the estimating process. Furthermore, the student will straighten structural parts through the use of pulling and anchoring systems that have different characteristics from different manufactures. Also, the student will become familiar with different anchoring and pulling systems in the normal collision repair operation.

Prerequisite: ABCT1155, ABCT1160, ABCT2150, and ABCT2190

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify five types of collision damage
Diagnose direct damage repair
Identify self centering gauges
Install self centering gauges
Identify tram gauges
Use tram gauge
Select clamping procedures for tie downs
Describe the proper repair of a uni-body vehicle
Identify different metals used in automotive construction
Identify five types of frame damage
Demonstrate proper stress relieving procedures
Analyze extent indirect damage
Demonstrate electronic measuring

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 2055 - Panel Replacement and Restoring Corrosion Protection (4)

The student will learn how vehicles are manufactured which will allow them to understand crush factors in accidents. The student will learn how to restore the vehicles to pre-accident condition as proper procedures for panel replacement will control all safety features of the vehicles such as air bag deployment and seat belt operation. The student will learn the proper techniques that will be required in the welding processes as there are different metals within the structure which require different welding methods. The student will understand the different corrosion protection methods on interior and exterior panels.

Prerequisite: ABCT1160, ABCT2000, ABCT2006, and ABCT2051

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Identify procedures for rail replacement
Identify the proper joint to be used in panel repair
Select the proper procedure for inner panel replacement
Select the proper procedure for rocker panel replacement
Select the proper procedure for "b" pillar replacement
Describe causes of corrosion protection
Restore corrosion protection coatings
Demonstrate the proper welds
Prepare safe work stations
Demonstrate proper inner structural parts replacement
Demonstrate procedure for front sheet metal replacement
Select proper procedure for rear body replacement
Select proper procedure for floor pan replacement

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ABCT 2060 - Straightening Structural Parts II (1)

When applying corrective forces, a technician must understand what property changes take place in the metal. When metal is bent its grain structure is changed and when grain structure is changed, the metal is stressed and may be weakened.

Prerequisite: ABCT2051

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify importance of correct anchoring.
Identify different types of anchoring systems.
Identify unibody anchoring systems.
Identify body-over frame anchoring systems.
Identify anchoring cautions.
Maintain work stations.
Perform shop duties.
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

ABCT 2110 - Creating a Computerized Damage Report (1)

There are many computer systems available today on a wide range of different computers. Like manual estimates, computer estimates are still written by a person and must also follow the rules of the system being used. Understanding the computer is important to check its accuracy and completeness for the repairs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify a computer form system.
Identify a database information system.
Identify an intelligent database system.
Describe a digital imaging system.
Demonstrate system use.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2115 - Plastic Identification and Repair Decision (1)

With the increased use of plastics by vehicle manufacturers, technicians and appraisers are making decisions on whether to repair or replace damaged parts. With an understanding of the unique issues involved in deciding to repair or replace a plastic part, the technician will now be able to make the best decision.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify automotive interior plastics.
Identify automotive exterior plastics.

Identify interior repair methods.
Identify exterior repair methods.
Identify nonrepairable parts.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2130 - Padded Dash Repairs (1)

Following a collision, foam filled dash pads or padded instrument panels may be dented or torn. The technician will understand the procedures to repair this damage to restore the vehicle to pre-accident condition.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Select and understand padded dash repair methods.
Select and understand padded dash repair materials.
Select and understand padded dash repair tools.
Identify padded dash repairs by welding.
Identify padded dash repairs by using adhesives.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2140 - Refinishing of Plastics (1)

Vehicle plastics must be refinished following repairs. Often a specific plastic may require special preparation of primers to get the paints to bond. The technician must be familiar with various refinishing procedures to refinish automotive plastics. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Select and understand retexturing materials.
Select and understand retexturing tools.
Identify retexturing preparation.
Identify various types of plastic.
Identify plastic specific surface preparation.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2150 - Brake Systems (1)

The student will learn different designs of brake systems, will be able to identify all brake parts and understand how brake systems function.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze brake system operation.
Identify appropriate brake fluids
Examine caliper assembly upon removal
Demonstrate knowledge of anti-lock brake systems
Examine drum assembly upon removal
Illustrate bleeding procedures according to manufactures procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2165 - Drivetrains (1)

Theory and practical application of drivetrain components and their assemblies will be covered in this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify and understand use of mechanical fasteners.
Identify clutch-throttle and shift linkages.
Identify and inspect drive shafts and joints.
Identify and inspect engine and transmission mounts.
Identify and inspect front and rear drive axle assemblies.
Maintain work stations.
Perform shop duties (1 hour).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2170 - Fuel Intake and Exhaust Systems (1)

This course is designed to apply knowledge of auto fuel intake and exhaust systems theory and service level of protection.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify and inspect fuel tank and supply systems.
Identify and inspect exhaust systems.
Identify and inspect emission control systems.
Identify and inspect engine hot air systems.
Identify and inspect alternative fuel systems.
Maintain work stations.
Perform shop duties.
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ABCT 2175 - Analyzing Damage/Creating a Manual Damage Report (2)

Accurate damage reports and cost estimating depends on proper use of collision estimating model guides. The collision guide is used to write a damage report for calculating parts, labor, supplies and materials for an accurate repair cost. The student then creates a manual damage report from this information. The damage report is the first guide to use during the beginning of the repair sequence and it provides a written plan for these repairs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine the purpose of a collision repair estimate
Evaluate parts information
Analyze a damage report
Determine repair strategy
Demonstrate estimate procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 2185 - Plastic Adhesive and Welding Repairs (2)

A plastic repair technician must be able to determine when and how to perform the two-part adhesive repair procedures to various interior and exterior automotive plastic panels. A graduate of this program must be able to understand the composition of plastic materials, how to repair plastic panels and how to select the correct welding technique and materials to make a successful repair.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Execute panel repairs
Construct plastic parts using adhesives
Demonstrate the use of hot air welding
Demonstrate airless welding
Explain Sheet Moulded Compound (SMC) plastic repair procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 2190 - Air Conditioning and Cooling Systems (2)

The student will learn the theory and operation of the automotive air conditioning and cooling systems. The student will be able to diagnose correct operations of these systems and replace components as necessary. The students will understand EPA regulations as they pertain to recharge refridgerants.

Prerequisite: ABCT1160

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Verify correct equipment for refrigerant recover and recharging
Illustrate procedures to recycle refrigerant
Select procedure to evacuate A/C system
Select procedure to recharge A/C system
Identify procedures to leak test an A/C system
Illustrate procedures for radiator installation
Select procedure to test cooling systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ABCT 2495 - Auto Body Internship I (4)

The student intern will work in a designated auto body repair facility with a journeyman and repair vehicles to manufacturers specifications.

Prerequisite: Successful completion of all ABCT courses or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement'

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 4

ABCT 2501 - Auto Body Internship II (4)

Following internship guidelines and guidelines in all previous successfully completed courses, the technician will work in a designated auto body repair facility with a journeyman and repair vehicles to manufacturers specifications.

Prerequisite: Successful completion of all ABCT courses or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement'

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 4

ABCT 2505 - Auto Body Internship III (3)

Following internship guidelines and guidelines in all previous successfully completed courses, the technician will work in a designated auto body repair facility with a journeyman and repair vehicles to manufacturer's specifications.

Prerequisite: Successful completion of all ABCT courses or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will bedefined in the 'Internship Agreement'

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 3

ABCT 2600 - Collision Lab (1 - 8)

Following collision lab guidelines, the technician will apply knowledge learned in previous successfully completed courses and perform repairs as specified by manufacturers specifications.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit enthusiasm.
Demonstrate initiative.
Display judgment.
Demonstrate courtesy.
Display punctuality.

Demonstrate dependability.
Organize work area.
Create successful working relationships.
Demonstrate safety.
Follow prescribed procedures.
Demonstrate cooperation.
Demonstrate customer relations.
Exhibit professionalism.
Maintain work stations.
Perform shop duties (1-8 hours).
Perform personal and environmental safety (daily).

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1-8

ACCT - Accounting Careers

ACCT 1000 - Introduction to Accounting (3)

This course is designed to provide an introduction to basic accounting procedures including analyzing business transactions, recording transactions in a variety of journals, preparing financial statements and completing the accounting cycle.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare journal entries to record business transactions in the general journal
Post amounts from the general journal to the general ledger
Prepare journal entries to close temporary accounts at the end of a fiscal year
Record routine business transactions in a special journal and in subsidiary ledgers
Prepare work sheets and closing entries
Prepare a bank reconciliation and journalize any necessary journal entries
Prepare a payroll register and all necessary journal entries to record the payroll
Prepare the following financial statements: balance sheet, income statement and statement of owner's equity
Prepare adjusting entries and post to the general ledger at the end of an accounting period

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1102 - Principles of Accounting I (4)

This course is an introduction to the fundamental concepts and principles which are used in a business environment to analyze and record transactions using the accrual method of accounting. This course also covers analyzing and recording transactions for cash, marketable securities, accounts receivable, payroll, current and contingent liabilities, inventories and plant assets.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare financial statements
Recognize revenue
Determine the cost of an asset
Prepare closing entries
Prepare a bank reconciliation
Describe the financial statement of a merchandising business
Describe uncollectible receivables
Calculate adjusting entries
Compute the cost of inventory
Calculate depreciation
Prepare a payroll register
Determine employer liabilities for payroll

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 1107 - Principles of Accounting II (4)

This course is a presentation of accounting for intangible assets, long-term liabilities, stockholders` equity and retained earnings. It includes financial statement analysis, the cash flow statement and provides an introduction to cost and managerial accounting.

Prerequisite: ACCT1102 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare the journal entries for partnership equity
Describe the basic characteristics of corporations
Journalize entries related to a corporation's stock transactions, including dividends
Record journal entries related to bonds
Prepare a statement of cash flows
Analyze financial statements
Journalize transactions for equity investments methods using the cost and equity methods
Identify costs and terminology specific to manufacturing operations
Prepare basic journal entries for a job order cost accounting system
Compute unit costs using a process costing system
Perform cost-volume-profit calculations
Develop schedules needed for a master budget

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 1111 - Payroll Accounting (3)

This course provides a background in federal wage laws, wage and salary calculations, federal and state payroll tax calculations, federal and state federal reporting requirements and accounting for the payroll process. It includes a payroll preparation and quarterly and annual reporting practice set.

Prerequisite: ACCT1000 or ACCT1102 or concurrent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify payroll laws that affect employers
List recordkeeping requirements
Identify the major provisions of FLSA
Compute hourly and overtime pay rates
Identify requirements for social security coverage
Compute federal tax withholding
Calculate FUTA and SUTA tax payments
Journalize payroll entries
Perform payroll procedures for a computerized payroll system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1116 - Ten-Key Calculator for Accounting (2)

This course is designed for the student to learn the ten-key touch method for calculators. The student learns to use the calculator in math and accounting applications.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Review basic mathematics.
Solve basic mathematics problems.
Identify ten-key operating controls.
Perform addition on the ten-key using the touch method.
Demonstrate accuracy on performance tests.
Demonstrate speed development.
Maintain accuracy on performance tests.
Perform calculations in addition and subtraction using the touch method.
Attain confidence in ability to use the tough method.
Complete business application problems.
Perform multiplication calculations on the ten-key.
Use constant multiplicand.
Utilize the memory capabilities of the calculator.
Perform division calculations on the ten-key.
Use constant divisor.
Solve business application problems.
Identify and follow the correct sequence in solving multiple operations.
Utilize critical thinking skills in applying problem-solving situations.
Complete business practice set.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ACCT 1125 - Excel (3)

This course is designed to give the student knowledge of the creation and use of spreadsheets in business. The student will learn basic data manipulation and printing including formulas, what-if analyses, charts, sorts, and extraction.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or CCIS1035 or CCIS1080

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create an Excel spreadsheet
Create a variety of charts
Create formulas in an Excel spreadsheet
Save and print worksheets and charts
Display and print the formulas in a worksheet
Perform "what if" analyses
Manipulate cells, rows, and columns in an Excel spreadsheet
Demonstrate use of web tools and processes in an Excel spreadsheet
Modify and sort data in an Excel database

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1130 - Microsoft Dynamics GP (3)

This course is an introduction to the use of computers in the accounting functions of a business. Students will practice fundamental accounting activities using various accounting software packages. The training includes general ledger, accounts receivable, accounts payable, inventory, payroll, fixed assets and financial statement analysis.

Prerequisite: ACCT1102

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Enter information needed to start a new company
Create backup and portable files
Record transactions in the revenue/receivables/cash receipts cycle
Record transactions in the expense/payables/cash payment cycle
Record payroll transactions
Complete a bank reconciliation
Close-out the records at the end of an accounting cycle
Create financial statements

Maintain business inventory

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1135 - QuickBooks (3)

This course is an introduction to the use of computers in the accounting functions of a business. Students will practice fundamental accounting activities using Quickbooks software. The training includes general ledger, accounts receivable, accounts payable, inventory, payroll, fixed assets and financial statement analysis.

Prerequisite: ACCT1102

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Enter information needed to start a new company
Create backup and portable files
Record transactions in the revenue/receivables/cash receipts cycle
Record transactions in the expense/payables/cash payment cycle
Record payroll transactions
Complete a bank reconciliation
Close-out the records at the end of an accounting cycle
Create financial statements
Maintain business inventory

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1150 - Sage 50 (3)

This course is an introduction to the use of computers in the accounting functions of a midsize business. Students will practice fundamental accounting activities using Sage 50 software. The training includes general ledger, financial reports, bank reconciliation, accounts receivable, accounts payable, inventory, and various accounting transactions.

Prerequisite: Recommended: ACCT1102

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals willbe addressed in the course:
Enter information needed to start a new company
Create backup files
Record transactions in the revenue/receivables/cash receipts cycle
Record transactions in the expense/payables/cash payment cycle
Record payroll transactions
Complete a bank reconciliation
Close-out the records at the end of an accounting cycle
Create financial statements
Maintain business inventory

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ACCT 1410 - Business Finance (3)

This course is designed to present basic business finance principles to business and marketing students. Students are taught to use planning tools, and to assess investment viability, financial position and performance, liquidity, and financing options.

Prerequisite: Qualifying score on math assessment test OR MATH1050 or MATH1060. And recommended, Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine mainstream investment options
Determine profitability under alternative inventory costing methods (i.e. FIFO, LIFO, and Average Cost)
Perform elementary cost-volume-profit analysis
Demonstrate understanding of sound financial management principles
Identify components of basic financial statements
Perform high-level analysis of basic financial statements
Formulate decisions using financial calculations
Evaluate alternative sources of short-term and long-term financing
Construct operating and capital budgets

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate accounting skills and knowledge
Apply computer skills in a business setting
Analyze business information

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ACCT 2155 - Financial Accounting (4)

This course is an introduction to the fundamental concepts and principles, from a user perspective, which are used in a business environment to analyze and record transactions using the accrual method of accounting. This course also covers analyzing transactions for cash, marketable securities, accounts receivable, payroll, current and contingent liabilities, inventories and plant assets.

Prerequisite: ACCT1000 or ACCT1102

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the nature and purpose of generally accepted accounting principles (GAAP)
Describe the components of the accounting conceptual framework including accounting and business terminology
Apply the accounting equation to analyze business transactions
Describe how internal controls are used to manage resources, minimize risk and ensure accurate reporting
Explain how the four basic financial statements can be used to meet the information needs of management, investors, creditor and regulators
Apply accounting procedures to measure, classify and report current assets
Apply accounting procedures to measure, classify and report noncurrent assets
Apply accounting procedures to measure, classify and report liabilities
Apply accounting practices relating to stockholders' equity, including the issuance of stock, repurchase of stock and dividends
Analyze how the use of different valuation methods and estimates can affect the Income statement and balance sheet
Describe how a cash flow statement can provide insight to a company's performance and solvency
Use financial analysis techniques to compare financial results against expectations, industry standards and competitors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 2200 - Intermediate Accounting I (4)

This course is an overview of financial accounting and its theoretical foundation including a conceptual framework of accounting for financial statements. It includes an in depth study of specific assets and present and future value concepts.

Prerequisite: ACCT1107

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify philosophical and authoritative foundations of the accounting profession
Record entries needed to complete the accounting cycle
Prepare required notes to financial statements for the Balance Sheet using accepted accounting procedures
Prepare the Income Statement using accepted accounting procedures
Prepare the Statement of Cash Flow using accepted accounting procedures
Describe the motivations and techniques for earnings management
Record the transactions within the revenue/receivable/cash cycle
Record revenue using various methods of revenue recognition
Calculate inventory and cost of goods sold using accepted accounting methods
Prepare entries to record the acquisition of noncurrent assets
Prepare entries to record utilization of noncurrent assets

Record the retirement of noncurrent assets

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 2206 - Intermediate Accounting II (3)

This course is an overview of financial accounting and its theoretical foundation including a conceptual framework of accounting for financial statements.

Prerequisite: ACCT1107

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare a bond amortization schedule
Apply present value concepts
Define equity financing
Classify corporate investments
Identify types of leases
Record corporate tax liability
Calculate earnings per share
Identify the types of risk faced by business
Calculate the effect of accounting changes upon financial statements
Prepare a pension worksheet

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 2211 - Cost Accounting (3)

This course is an introduction to the principles and concepts used to account for direct materials, labor, and factory overhead in both manufacturing and service entities. It includes using cost accounting data as a management tool for planning and controlling costs.

Prerequisite: ACCT1107

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Contrast financial accounting and cost management
Prepare income statements for manufacturing organizations
Prepare process costing system journal entries
Allocate support department costs
Compute variances
Calculate performance ratios
Describe job costing
Contrast lean accounting techniques with traditional accounting techniques
Analyze partial productivity measures
Construct a master budget

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 2221 - Managerial Accounting (4)

This course is a presentation of how accounting data and concepts may be interpreted and applied by management in planning and controlling business operations.

Prerequisite: ACCT2155 AND qualifying score on math assessment test OR MATH1500

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define competitive advantage
Explain the importance of relevant costs
Define strategic alignment targets
Calculate transfer prices
Calculate inventory costs using job-costing techniques
Explain activity-based-costing
Explain cost-volume-profit analysis
Differentiate the different kinds of cost behavior
Create a balanced scorecard
Define quality costs

Evaluate pricing policies
Describe the differences between managerial and financial accounting
Apply the concepts underlying strategic capital investment decisions
Calculate standard costs for the use of creating variance analysis reports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 2231 - Income Tax (4)

This course is an explanation and interpretation of the Internal Revenue Code to assist taxpayers in the preparation and filing of individual, business, and corporate tax returns.

Prerequisite: ACCT1102 or ACCT1107

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain how individual income tax liability is determined
Determine dependency exemptions and filing status
Determine gross income inclusions and exclusions
Classify deductions for determination of adjusted gross income
Compute depreciation and amortization of assets
Calculate travel, entertainment and transportation expenses
Determine itemized deductions and limitations
Compute gain or loss on property dispositions
Apply tax rules for reporting capital gains and losses
Explain tax holding period rules
Calculate refundable and nonrefundable tax credits
Explain tax carryover provisions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ACCT 2700 - Auditing (3)

This is a capstone class that will draw upon different topics covered in the AAS degree. It will familiarize students with the year-end audit process conducted by a CPA audit firm, and with the activities leading up to the publication of the annual report.

Prerequisite: ACCT1107

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the purpose of an audit
List the activities in audit preparation
List the typical activities of a CPA during the audit process
Describe the difference between an internal and external auditor
Describe the effect of Sarbanes-Oxley upon publicly traded corporations
Explain the procedures conducted to test internal controls
Describe how the annual report embodies the qualitative characteristics of financial accounting
Analyze the majors sections of the annual report
Identify the required parts of the Auditor's Report
List the required information in the Notes section of the annual report
Contrast the ethical dilemmas between stewardship and ethical responsibilities of corporate management
Identify the different goals of the Security & Exchange Commission, Assoc. of Independent CPA's, corporate management, financial market analyst, and private investors
Explain the effect of international accounting standards upon future U. S. Corporate reporting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 2800 - Accounting Internship (1 - 10)

This is a cooperative internship program between Hennepin Technical College and an employer to allow the student work experience in the accounting area.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate accounting knowledge
Display computer proficiency

Exhibit professional behavior and ethics in work environment
Calculate mathematical solutions
Exhibit problem solving skills
Communicate information effectively to others

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 110

ACCT 2900 - Small Business Accounting Simulation (3)

This course is designed to provide a successful transition from the students' academic training to the workplace environment. The students are required to use a variety of their accounting skills in a simulated accounting position. It is intended for accounting students who are near the end of their degree program.

Prerequisite: ACCT2200 and ACCT2231

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Set up the accounting system for a small business
Perform typical accounting-cycle activities
Prepare a financial depreciation schedule
Prepare a MACRS (Modified Accelerated Cost Recovery System) depreciation schedules
Records month-end adjustments
Record payroll
Prepare basic financial accounting documents
Construct lease schedule using excel software
Perform a bank reconciliation
Prepare federal payroll documents
Prepare federal income tax documents
Communicate rationale for decision making

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ACCT 2950 - Accounting Skills Assessment (0)

This Assessment Test requires students to pass a one-time third party accounting examination. This required class will examine the accounting skills and knowledge of students who are finishing their diploma or 2-year degree. The class will provide data to assess the degree to which the accounting department and students are meeting the goals of the department.

Prerequisite: 75% of required courses are recommended to have been completed

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 0

ARCH - Architectural Technology

ARCH 1008 - Architectural Residential Technology I (5)

This course introduces the process of designing and drafting residential construction drawings while applying drafting standards, codes, and design principles. The student will produce construction drawings for a single family home.

Prerequisite: Qualifying score on reading assessment test or ENGL0901 and prerequisite or concurrent enrollment in ARCH1101 and prerequisite or concurrent enrollment in ARCH1203 recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define Architectural Technology Career paths
Translate field dimensions to architectural scale plans
Describe benefits of site locations
Draft site plan to scale
Analyze site/building orientation and environmental design strategies
Demonstrate residential code compliance
Develop conceptual bubble diagrams
Develop functional floor plan room relationships

Define stair terminology
Identify stair types
Calculate stair risers and run
Apply kitchen design standards
Apply bath design standards
Implement architectural graphic standards to produce construction drawings
Create exterior elevation views
Draft accurate views using ortho-graphic projection
Draft building sections to scale
Produce foundation plan layout
Produce floor plan layout
Draft standard plan/section details
Interpret project specifications
Sketch plan, section and elevation views to scale
Identify design styles
Draft roof plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

ARCH 1011 - Architectural Residential Technology II (5)

This course will reinforce sound drafting and design processes and increase BIM proficiency. The students will produce a set of construction drawings for a three level multi-family townhouse project.

Prerequisite: ARCH1008, ARCH1101, and recommended concurrent enrollment in ARCH2370

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform residential energy code compliance
Construct 3D common area separation walls to meet code compliance
Design common area separation walls
Produce a set of construction documents for a multi-family construction project
Produce details at different scales
Describe materials for building assemblies
Assemble general construction notes
Build 3D interior elevations
Apply durable finish materials
Apply platform construction methods
Plot drawings to scale
Generate window/door details
Design a structural framing plan
Articulate eave details to meet code compliance
Draft a structural framing plan
Create Revit project window, door, and finish schedules

Develop a sustainable site plan
Generate wall sections
Generate building section
Design exterior elevations
Render a 3D interior view
Render a 3D exterior view
Apply Revit technology effectively to produce a BIM model of the townhouse

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

ARCH 1101 - Architectural Residential AutoCAD (5)

This course will introduce the student to the basics needed to use the computer and AutoCAD software as a tool in the preparation of architectural working drawings. The student will study coordinate systems, drawing set-up, drawing and modifying commands, annotation, dimensioning, hatching and plotting. The student will produce architectural construction drawings for a cabin.

Prerequisite: Qualifying score on reading assessment test or ENGL0901 and prerequisite or concurrent enrollment in ARCH1008 and prerequisite or concurrent enrollment in ARCH1203 recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.
Utilize coordinate systems for data entry
Set-up drawing parameters
Manage drawings files
Construct geometry
Modify geometry
Manage object properties
Use object snaps
Manage text within AutoCAD
Manage dimensions on floor plans
Manage hatch patterns on plans and elevations
Plot drawings to scale
Complete a project template
Manage block references
Access Design Center
Draft floor plan walls with openings
Manage layer setup
Draft foundation plan
Utilize AutoCAD modify tools
Draft accurate floor plan layout
Draft accurate Sections
Draft accurate Elevations
Produce an accurate set of residential construction documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

ARCH 1203 - Residential Materials and Methods of Construction (3)

The student studies building science and technology used in wood and light-gauge steel frame residential construction. Topics to be covered include foundations, floor systems, wall framing, ceiling/roof framing and interior and exterior finish materials and methods of construction. Students will prepare residential construction specifications and estimate material costs.

Prerequisite: Qualifying score on reading assessment test or ENGL0901 and prerequisite or concurrent ARCH1101

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:\
Describe foundation construction
Explain erosion control measures
Analyze site conditions
Describe floor construction systems
Illustrate roof construction detail
Identify stair terms and components
Identify window types and styles
Identify door types and styles
Describe thermal and moisture protection
Compare qualities of finish materials
Select finish materials
Describe construction details
Organize items by Construction Specifications Institute (CSI) division in project specifications
Estimate material costs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ARCH 1206 - Strength of Materials (3)

This course is designed to acquaint the student with principles of structural engineering as they apply to the architectural drafting profession. Topics to be covered include the basic principles of structural mechanics, including designing loads and forces, bending, shear and deflection, and their application to the design of wood, steel and concrete structural elements.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply principals of statics to structures
Identify the laws of equilibrium
Calculate beam sizes for flexural stress
Calculate beam sizes for horizontal stress
Diagram moment and shear forces
Define modulus of elasticity
Identify structural lumber classifications
Identify allowable lumber stresses
Calculate beam size for deflection limits
Calculate applied loads on structural members
Calculate applied forces on structural members
Apply column slenderness ratio
Analyze strength qualities of materials
Calculate beam section modulus
Determine beam reaction forces
Determine reinforcement for concrete elements
Calculate moments of inertia
Determine centroid location

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARCH 1340 - Building Codes: Commercial (2)

This course will introduce the student to the organization, use and impact of the International Building Code in the design of buildings.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first weekof the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify life-safety issues
Determine occupancy group
Design for accessibility
Calculate allowable floor areas and heights
Identify fire-resistance rating for construction assemblies
Determine plumbing fixture requirements
Classify types of construction
Assess plans for code compliance
Complete code review for commercial building
Complete energy code compliance applications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARCH 1345 - Building Systems (3)

This course will introduce the student to basic design and drafting requirements of HVAC, plumbing, electrical and low-voltage/data/communication systems in both residential and commercial applications. This will include new trends in alternative energy and 'smart building' technology.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate basic thermal systems
Identify qualities of energy efficient home models
Define sustainable building performance goals
Demonstrate energy conservation technology
Design residential plumbing system
Select alternative energy design strategies for climate comfort needs
Describe the Home Energy Rating System (HERS) index test
Design sound attenuation solutions
Describe water conservation methods
Identify water conserving appliances and techniques
Identify electricity conserving appliances and lighting fixtures
Specify components for energy efficient HVAC systems
Perform energy analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARCH 1500 - Introduction to Construction Management (2)

This course will explore the principals and processes required to manage construction projects, allowing students to become familiar with the construction management field. The course includes an overview of project planning, scheduling, budgeting, contracts, construction material knowledge, communication, site safety issues, sustainable operations, and leadership skills required to direct operations smoothly through successful completion.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Integrate sustainable construction operations
Coordinate construction trade schedules
Schedule on-site material delivery
Develop a plan to meet owner's budget within time restraints
Monitor on-site safety, communication, and code issues

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARCH 1505 - LEED GA Preparation (2)

The LEED GA (Leaders in Environmental and Energy Efficient Design, General Associate) course is designed to assist in preparation for the LEED GA certification exam. The learner will review LEED certification strategies, the green associate study guide, and LEED core concepts.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Specify EPA (Environmental Protection Agency) approved materials

Interpret LEED rating system credit application
Facilitate sustainable design team process and procedure
Evaluate sustainable practices for economic, environmental, and human health
Identify LEED qualified strategies from the certification checklist

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARCH 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ARCH 2121 - Architectural Commercial Technology I (5)

In this course, students will create construction documents with advanced drafting techniques using BIM software.

Students will also be introduced to the use of load bearing masonry and structural steel framing systems in the context of a large-scale building project.

Prerequisite: ARCH1011, ARCH2370 and ARCH2466

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Generate required plan views
Generate required elevation views
Generate required section views
Generate required detail views
Comply with CAD standards
Research materials and products to be utilized in project
Demonstrate knowledge of material applications
Utilize structural grid system for layout and dimensioning
Produce a complete 3D BIM model for a commercial project
Produce structural framing model

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

ARCH 2141 - Architectural Commercial Technology II (5)

The goal of this course is the production of a set of construction drawings for a commercial building project where poured and pre-cast concrete, steel and CMU cavity wall are the primary structural building materials. The course utilizes a team approach to the project to foster the critical thinking, problem-solving and teamwork skills required in industry. Emphasis will also be given to increasing drafting proficiency of work sharing and BIM techniques.

Prerequisite: ARCH2121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate effective team skills
Utilize Internet-based applications for team collaboration
Demonstrate understanding of the building materials used
Demonstrate understanding of design program
Demonstrate correct dimensioning of drawings
Demonstrate proper annotation of drawings
Manage linked files
Demonstrate ability to meet project deadlines
Demonstrate understanding of office standards

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

ARCH 2301 - Design with SketchUp (2)

This course is designed to introduce students to SketchUp imaging technology for design. Students will use SketchUp tools to construct objects, modify objects, apply materials, apply special effects, and create 3D camera views. Students will create a portfolio of design scenes and present a final design composition.

Prerequisite: Qualifying score on reading assessment test or ENGL0901 and knowledge of computers is recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify SketchUp Interface tools
Construct components using SketchUp tools
Modify components using modification tools
Operate camera tools to view 3D objects
Import drawings
Export drawings
Create complex interconnected shapes
Create rendered images of model views
Apply materials and color to object surfaces
Apply modeling and rendering techniques to components
Incorporate photos into model views
Export 3D views to 2D layout sheets
Compose portfolio of interior SketchUp scenes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ARCH 2310 - Architectural CAD: Introduction to Revit Architecture (2)

This course will introduce students to the basics of producing drawings using the latest release of Autodesk`s parametric modeling software, Revit.

Prerequisite: Knowledge of computers recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage project files
Create floor plans
Apply wall types
Insert hosted elements
Modify element properties
Apply roofs
Generate elevations
Compose building sections
Dimension drawings
Annotate drawings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARCH 2370 - Architectural Residential Revit (4)

In this course, students will learn to use Revit software to create and coordinate building information models (BIM) for construction document production.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901. Prerequisite or concurrent ARCH1011

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage project files
Create floor plans
Create wall types
Insert hosted elements
Modify element properties
Create roofs
Create ceilings
Generate elevations
Compose building sections
Develop wall sections
Dimension drawings

Annotate drawings
Generate interior elevations
Generate schedules
Complete energy code compliance certificate
Create rendered views
Arrange drawings on layout sheets
Plot drawings to scale
Produce construction document set

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ARCH 2466 - Commercial Materials and Methods of Construction (2)

This course will introduce the student to the materials and methods commonly encountered in large-scale construction projects. Consideration will be given to the materials, their properties, application techniques and construction practices as well as how these should be represented graphically. Materials to be examined include steel, concrete, masonry, interior and exterior finishes and waterproofing. Students will prepare commercial construction specifications and estimate material costs.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and ARCH1101 OR ARCH2370

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine site materials
Compare products with recycled content
Compare resource conservation strategies
Compare maintenance requirements of building materials
Dissect structural systems
Identify floor systems
Describe components of commercial roof systems
Describe various foundation systems
Inspect curtain wall components
Produce a cavity wall section detail construction
Identify commercial door and window options
Describe properties of effective moisture and thermal protection
Examine finish materials
Compare wall framing systems
Research materials and their properties
Classify fire-rated construction materials
Demonstrate materials applications
Produce details of roof components
Identify materials by CSI classification
Estimate material costs

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARCH 2562 - Capstone: Project Design and Management (5)

This course is designed for the entrepreneur. Students will develop a residential project design and manage the drawings and documents for it. They will also produce permit and bid construction documents while consulting with industry professionals. A formal capstone project presentation will be provided by students using visual graphics to feature the details of their work and the challenges they encountered.

Prerequisite: ARCH1008 AND ARCH1203 AND ARCH1101 OR ARCH2370 OR Previous CAD Experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design residential project plans
Analyze space programming needs for the project
Develop schematic sketches
Determine building location on site
Create interior design layout options
Select materials for the project
Apply color theory
Utilize design principals
Distinguish design styles
Construct Design Development drawings
Produce code compliant construction documents
Identify legal contracts
Develop a project management plan budget and schedule
Prepare a sustainable design program report
Develop a set of bid documents
Organize a final construction document package
Perform a formal oral presentation of the project
Evaluate programming challenges
Create graphic visuals for presentation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5 lab: 0

ARCH 2640 - Architectural History (3)

Architectural analysis introduces the student to architectural history through development of architectural form and material use. The course is based on western cultures and will include major examples in architecture from Egyptian through European Renaissance to American Colonial architecture to present post modern architecture. This course will provide a basis for understanding of architecture from the perspective of a creative process. The main objective of this course will be to develop student appreciation of past architectural work and to recognize traditional values in architecture.

Prerequisite: Basic computer skills are required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
List western historical architectural stylistic periods
Describe the factors that influence architectural styles
Define the significant characteristics ofeach architectural style
Differentiate between architectural styles
Analyze historic characteristics in modern buildings
Recognize literal historic characteristics in modern building design
Recognize metaphorical historic characteristics in a modern building design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARCH 2800 - Civil Site Plan Development (2)

This course introduces civil site planning. Through the use of Computer-Aided Design (CAD), the student will produce a set of plans including a subdivision plat with contours, street plan and profile sheets, utilities, site plan, and site details. The topography map will be plotted with accurate cut and fill boundaries.

Prerequisite: ARCH1101 or ARCH2370

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret civil site plans
Develop a topographical surface using imported survey data
Design topographical surface grading contours

Apply survey coordinate system
Draft accurate subdivision plats
Plot a contour topographical map using field notes
Draft street plans
Draft cross section profiles including utilities
Draft street, curb, drainage, and site details
Identify Geographical Information System (GIS) mapping tools
Develop sustainable design site development strategies
Identify soil characteristics
Calculate earthwork
Draft Planned Unit Development (PUD) plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ARCH 2850 - Architectural Technology Advancements (2)

In this course students are introduced to innovative technologies that have become essential in the industry. It may include Blue Beam, Navisworks, Energy Analysis, 3D printing, photo-shop, and Google- earth. The technology may be interactive or supplemental to CAD software.

Prerequisite: ARCH2370 or previous CAD experience. Recommended ARCH1011, ARCH2121, ARCH2141, and ARCH2466

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Experiment with new technologies
Evaluate application of new technologies
Utilize new technologies effectively
Demonstrate knowledge of new technology methods
Research new technology industry tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ARCH 2900 - Internship (2 - 4)

This course allows the student to gain on-the-job experience in the AEC industry. The student is responsible for finding and setting up the internship position. Two (2) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 2-4

ARCH 2920 - Photoshop for Architecture (4)

This is an advanced course in which students will learn the basics of Adobe Photoshop and how to apply the software in the creation of architectural digital images. Students will be will be involved in hands on supervised projects.

Prerequisite: Architectural Drafting and Design program student or architectural industry experience with current working knowledge of computers

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply software commands
Merge images from multiple sources
Construct channels from selections
Construct photo collage/montage effects
Incorporate text into images
Analyze lighting requirements
Construct photorealistic building views
Produce finished images in multiple formats

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ARCH 2930 - Architectural CAD: 3D Studio Max (4)

This course will use 3D Studio Max software for modeling and rendering architectural design images. Students will also learn to import images created in other programs to develop and enhance those images into true-to-life scenes.

Prerequisite: Architectural Drafting and Design program student or architectural industry experience with current working knowledge of computers

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply software commands
Construct objects from primitive shapes
Set up cameras
Construct animations
Apply material textures
Set up scene lighting
Produce script
Create rendering
Apply illumination effects
Modify IK/FK control
Assemble completed scenes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ARCH 2936 - Advanced Revit BIM Technology (4)

This course will cover advanced topics and features that are available with the Autodesk Revit software. Students will gain an understanding of Building Information Modeling (BIM) and will learn the tools for family creation, collaboration, massing, advanced rendering, walkthroughs, structural framing and details, mechanical, electrical, and

plumbing systems will be implemented.

Prerequisite: ARCH2370 OR Previous Revit experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create Revit families
Integrate work sharing files with central file
Coordinate linked files with base file
Create massing models
Model structural framing
Create structural details
Utilize massing tools
Analyze structural, mechanical interference
Create mechanical, electrical, plumbing systems
Apply advanced rendering techniques
Produce video walkthroughs
Manage customized settings in Revit

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ARET - Automation Robotics Engineering Technology

ARET 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course

Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 1126 - Mechanical Power Transmission (3)

This course is an introduction to Mechatronic Systems. The focus of this course is the application of mechanical power transmission to modern manufacturing equipment, used by machine assemblers, maintenance mechanics, field service personnel, engineers, manufacturing technicians and technical salespeople. Mechanical systems covered include chains, belts, couplings, gear reducers, shaft alignment, gear trains, linkages, bearings, and machine timing. Instruction uses hands-on projects in addition to demonstration and lecture on actual packaging machines. This course is part of a 2-course sequence that leads to students being eligible to take PMMI's Mechanical Components 1 test. This test is one of eight Mechatronics certifications offered by PMMI.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe methods of rotary mechanical power transmission
Assemble mechanical power transmission systems
Describe mechanical fasteners and their applications
Differentiate bearing types and applications
Differentiate belt drive systems and applications
Calculate gear/belt/pulley/sprocket ratios
Categorize chain drive systems
Differentiate gear types and applications
Troubleshoot mechanical power transmission systems
Utilize appropriate hand and power tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1130 - Maintenance Operations (2)

This course will expose the student to maintenance practices and industrial safety common to many of the potential fields within Mechatronics. Mechatronics is a broad field in Industrial Maintenance with many unique specialties requiring technicians to have exposure to multiple mechanical maintenance procedures. This course is one of two courses aligned to PMMI's Mechanical Components I Mechatronics Certification test. Throughout this course, students will apply concepts to hands-on labs to reinforce the discussed topics.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain Industrial Safety
Describe maintenance principles
Explain maintenance record keeping procedures
Perform mechanical maintenance procedures
Explain basic troubleshooting procedures
Differentiate types of lubrication and their application
Apply appropriate tools to maintenance procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 1140 - Computer Integrated Manufacturing (3)

The purpose of this course is to introduce students in all manufacturing fields to the manufacturing process. Students will examine the principles of manufacturing, manufacturing processes, the elements of automation, and the integration of manufacturing elements. These principles will be applied to manufacturing situations through the use of simulations, assembly of manufacturing systems, and through the use of robotics and Computer Integrated Manufacturing (CIM) equipment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Acquire an understanding of the history of manufacturing
Utilize control systems
Manage the costs of manufacturing
Design a product for manufacturability
Analyze how we make products
Acquire the understanding of the manufacturing process
Formulate an understanding of Automation
Define the elements of power
Adapt robotic programming and usage to a manufacturing environment
Integrate manufacturing elements into a working manufacturing cell
Design a manufacturing system consisting of a minimum of two automated components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1155 - Automation Controls (3)

This course will expose the students in the field of Mechatronics to common motor control equipment utilized in industrial maintenance occupations. Students will construct and troubleshoot motor control circuits utilizing ladder logic. Students will utilize manual starters, 2-wire control circuits, and 3-wire control circuits. This basic knowledge of automation control equipment is expected of an entry-level technician working in facilities maintenance or assisting in the assembly, test, startup, troubleshooting, maintenance, repair or upgrade of basic manufacturing machinery modules. This course is one of three courses aligned to PMMI's Electricity 1 certification exam.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare the operation of manual, 2 wire, and 3 wire motor controls
Differentiate the protective functions of motor starters, fuses and overload
Describe the structure and organization of a basic control system
Apply inputs, outputs and logic to perform control functions
Apply methods of testing various industrial electrical control components
Analyze methods of troubleshooting systems of industrial automation components
Construct and program circuits using AC Frequency Drives
Describe the use of overcurrent protection and disconnect devices in 3–phase circuits
Explain the function of a control relay
Construct circuits based on symbology in ladder diagrams
Use of testing equipment in the troubleshooting process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1161 - Mechatronic Systems (3)

This course explores how mechatronic systems are utilized in industry. This course will focus on the packaging industry, but can be applied to manufacturing and product conveyance as a whole. A wide variety of machinery will be examined as well as the tooling necessary for basic component fabrication and part modification. Basic metalworking and welding concepts will be examined. Students will receive a hands-on experience leading to a greater understanding of how machinery operates and the skills needed to successfully work with complex machinery in industry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply safety procedures to machine operation
Demonstrate proper selection and safe use of hand and power tools for a task
Verify that machine performance meets production requirements
Describe machine guarding and its application
Differentiate between types of mechatronic systems
Apply safe operating procedures to mechatronic systems
Interpret machine operation and maintenance documentation
Explain welding theory, equipment and selection process
Appraise components of automated manufacturing lines
Interpret electrical control and power schematics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1165 - Vision Systems for QA/SPC (3)

In this course, students will utilize various forms of Machine Vision Systems as applied in Quality Assurance (QA). Systems used will include Vision Cameras and Barcode Readers as well as the software and computer systems required for installation, calibration, and operation. The concept of Statistical Process Control (SPC) as

applied to QA will be discussed. These skills are vital for technicians entering the fields of Mechatronics and Packaging.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform image calibration
Analyze the steps involved in a typical pattern matching operation
Assess data from vision operations
Differentiate the structure of digital image formats
Define the elements of a typical Vision System
Explain the use of Statistical Process Control (SPC)
Explain the uses of barcode in industry
Utilize various AutoID systems to capture images

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 1170 - Troubleshooting Mechatronic Systems (3)

This course is designed for manufacturing personnel preparing to enter the fields of Mechatronics and Packaging. This course will expose the student to a variety of mechatronic systems as applied in the Manufacturing and Packaging fields. Students will utilize schematics, test instruments, and proper safety procedures in the troubleshooting process. A variety of mechatronic systems, including electrical, mechanical, fluid power, and Programmable Logic Controllers (PLC's), will be examined.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze Troubleshooting Techniques
Use schematics to troubleshoot mechatronic systems
Use schematics to troubleshoot electrical systems
Use a variety of Mechatronics and Packaging equipment
Troubleshoot motion control systems
Troubleshoot electrical control panels using schematics
Utilize testing equipment in the troubleshooting process
Compare and contrast various types of motors
Troubleshoot motors and motor circuits
Apply proper safety procedures in the troubleshooting process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1175 - Industrial Electricity and Electronics I (3)

This course is designed for all students in the Manufacturing & Engineering Technology courses of study. Through the use of modern training systems students will gain an understanding of how electrical principles apply to automated production machines, packaging machinery, and robots. Students will demonstrate their ability to apply knowledge of electrical principles to increase sustainability and energy efficiency in a manufacturing environment. Through extensive hands-on use of digital meters and electrical tools students will be given the opportunity to perform wiring and setup operations and to troubleshoot electrical circuits. This course is part of a sequence of courses leading to Packaging Machinery Manufacture's Institute (PMMI) Industrial Electricity Certification.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate between DC and AC circuits
Verify proper operation of circuit protection devices
Determine the efficiency of electrical system components
Illustrate the distribution of power safely and effectively
Characterize the conversion process between different energy forms
Employ common electrical measurement units, equations, tools, and calculations
Demonstrate proper electrical safety standards
Practice proper grounding of critical circuits and devices in energy systems
Explain the importance of power management
Describe Ohm's law
Describe Kirchhoff's law
Differentiate between series, parallel, and series/parallel circuits
Analyze electrical schematics
Illustrate proper electrical trouble-shooting techniques
Apply electricity and electrical circuits to automation equipment
Describe the operation of five types of electrical output devices
Employ power and circuit protection in series and parallel circuits
Apply electromagnetism, inductance, and capacitance in automation circuits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1180 - Industrial Electricity and Electronics II (3)

In the field of Mechatronics, a basic knowledge of industrial electricity is needed to understand the operation of all types of commercial and industrial equipment and to gain further knowledge of more complex packaging machines and systems. This course will expand on the principles taught in previous courses and provide the student hands-on activities utilizing proper safety procedures while working with electrical tools, measurement equipment, electrical circuits, motors, and electrical components. This course is one of three courses aligned to PMMI's Mechatronics Certification Test for Industrial Electricity 1.

Prerequisite: ARET1175

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare Electrical Measurements
Utilize Electrical Tools
Utilize Electrical Testing Equipment
Analyze Power and Circuit Protection in Electrical Systems
Describe 3-Phase Electrical Systems
Construct Electrical Wiring Circuits
Apply Electrical System Troubleshooting
Categorize Electrical Motors
Analyze Electrical Safety Procedures
Categorize Electrical Components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 1185 - Sensor Applications (2)

This course will introduce the students to the operation of a variety of sensors used in automated manufacturing and robotics. Students will work with a variety of sensors including thru-beam, Retro-Reflective, and Diffuse Reflective sensors. Students will have the opportunity to connect sensors and differentiate between current sinking (NPN) and current sourcing (PNP) sensors. Students will work with simulations, modern trainers, and various real-life sensors to complete the learning objectives.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate current sinking (NPN) and current sourcing (PNP) sensors
Differentiate between Thru-beam, Retro-Reflective, and Diffuse Reflective sensors
Recommend sensor types to operate in a variety of manufacturing environments
Construct sensor assemblies
Prescribe the proper sensor type according to materials being detected
Validate sensor operation according to environment and materials detected
Practice Foreground and Background Suppression techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ARET 1190 - Programmable Logic Controllers (3)

This course will introduce the student to Programmable Logic Controllers (PLC's). This course will utilize Allen Bradley's software suite and introduce the student to logic and machine control common in Mechatronics Systems. Topics include hardware and software composition of control systems, input/output interfacing, basic logic commands and common programming instructions. Knowledge of relay logic, ladder programming and input/output devices is needed to understand and maintain all types of common packaging equipment. This course is aimed at entry level technicians who may be involved in the assembly, test, start-up, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. This course is the first in a series of two courses, which will prepare the student for PMMI's Mechatronics Certification Test for PLC Level 1.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the function of a programmable logic controller
Utilize communication drivers to communicate with the controller
Compare the operation of Examine If Open (XIO) and Examine If Closed (XIC) input instructions
Describe the operation of a timer instruction
Describe the functions of counter instructions
Construct event-driven sequencing
Design a PLC program
Define components of a PLC system
Develop and execute a PLC Program
Differentiate between numbering systems (decimal, binary, hexadecimal)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 Lab: 1

ARET 1200 - Introduction to Robotics (2)

The focus of this course is to provide hands-on learning opportunities using both real and virtual industrial robots. The main emphasis in the course will be focused on safely programming and operating industrial robots. Students will be exposed to various End of Arm Tooling, robot types, the historical trends of robotics, programming methods components of robotic systems, and multiple coordinate systems. These skills and concepts are utilized throughout all of manufacturing and in many other areas.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain Industrial Robot Safety
Differentiate End of Arm Tooling
Explain Cartesian coordinate Systems
Describe the history of Industrial Robotics
Construct Robotic Programs
Categorize components of Robot Systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ARET 2101 - Advanced Automation Controls (3)

This course is designed for those students in the fields of Mechatronics and Packaging. Students will work with modern automation control devices to explore how various motors are used to control position and timing on industrial machinery. Students will work on multiple labs designed to develop their knowledge of these devices and components. Industrial networking, Programmable Logic Controllers, Process Control and PID (Proportional-Integral-Derivative) Controls will also be examined. An examination of various motor drives will occur during this course. AC and DC electric motors are commonly applied in multiple industrial operations including packaging equipment, machine tools, and processing equipment. The control of speed, torque and other parameters is growing in use, resulting in more complex motor drive systems. Technicians need to be proficient in the use of these technologies when they enter the workforce.

Prerequisite: ARET1155

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct variable frequency drive (VFD) circuits
Construct servo motor circuits
Construct stepper motor circuits
Analyze electric linear actuators
Integrate motor controls with a programmable logic controller (PLC)
Explain proportional-integral-derivative (PID) control
Differentiate AC and DC motor drives
Compare how various motors are used for position control
Appraise motion control components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 2105 - Fluid Power Motion Control (2)

This course is intended for students entering the fields of Mechatronics and Packaging. This course covers the function, operation, and application of common components used in fluid power circuits and systems. It also assesses the understanding of how fluid power components and accessories are placed together to create circuits and systems for use in robotics, mechatronics systems, and packaging. The major emphasis is on pneumatics with a lesser emphasis on vacuum systems. Electro-fluid power troubleshooting is emphasized. This course partially covers the outcomes of PMMI's Fluid Power 1 Mechatronics Certification exam.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the operation of solenoid-operated directional control valves
Construct circuits with electro-pneumatic controls
Apply fluid power calculations to troubleshooting mechatronic systems
Analyze pneumatic component failures
Describe the function of a pneumatic schematic
Apply the use of pneumatics in motion control with mechatronic systems
Troubleshoot pneumatic circuits as used in mechatronic systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 2111 - Advanced Programmable Logic Controllers (3)

This course will focus on Allen-Bradley Programmable Logic Controllers (PLC's) and Human Machine Interfaces (HMI's). Problem solving and troubleshooting factory controls will be stressed throughout this course. This is accomplished using up-to-date Rockwell Software. Students will acquire an advanced knowledge of PLC's, HMI's, logic concepts, programmable controller program development, Input/output (I/O) configuration and translation from hardware to programmed logic. Students will develop, edit and troubleshoot programs employing a large array of instructions found in typical Mechatronic Systems as applied in Manufacturing systems, including logic flow, timers, counters, sequencers, math, and specialty functions.

Prerequisite: ARET1190

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply memory organization and addressing
Employ discrete input/output addressing
Identify the function of a tag
Create a PLC program utilizing tag-based addressing
Create an HMI program
Illustrate the function and use of monitoring devices
Troubleshoot PLC based system
Differentiate between program languages
Create basic PLC Machine applications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 2150 - Engineering Design and Fabrication (2)

This course provides students entering the fields of Mechatronics and Packaging with an overview of Computer-Aided-Design (CAD) software and Computer-Numeric-Control (CNC) machines. Students will design basic parts and build the parts on CNC machinery. Emphasis will be on the interactions between software and machines and the troubleshooting process.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create assembly models with CAD software
Analyze prints as applied to industrial components
Use Computer Numeric Control (CNC) machines to create parts
Apply G-code and M-code to CNC machinery
Troubleshoot G and M Codes
Apply feed and speed rates on CNC machinery

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 2181 - Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Packaging and Automation industries. The student is responsible for finding and setting up the internship position. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Completion of at least 50% of your degree or diploma and instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1-4

ARET 2200 - FANUC Robotics Operations (2)

This course is intended for an operator, technician, engineer or programmer who may need to setup, modify, record and run a program on a FANUC robot system. This course covers FANUC Handling Tool Operations. Students will program, setup and operate the robots and end-of-arm-tooling. The FANUC Teach Pendant will be taught and utilized for programming and jogging the robot. Students will set up applications, write basic programs, and test them. These are the entry level skills a student should have to enter the fields of Mechatronics and Packaging. Upon the successful completion of this course, students will be able to take the FANUC Handling Tool certification test.

Prerequisite: ARET1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Model safely jogging a robot
Construct tool frames

Construct user frames
Create and edit programs
Explain how to actuate I/O's (input/output)
Use branching logic with IO/Registers
Use Position Registers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 2250 - FANUC Vision Systems (1)

This course will cover FANUC IRVision systems. Students will learn basic tasks and procedures required for an operator, technician, engineer or programmer to set up, teach, test, and modify FANUC iRVision using the System controller applications. Students will discover how FANUC Vision is a key tool for automatically detecting good parts and bad parts as compared to the engineering drawings. These are the basic skills a technician needs for entry in the fields of Mechatronics and Packaging.

Prerequisite: ARET1165 and ARET2200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Establish controller communications with a computer using TCP/IP addressing
Construct vision setups using IRVision Camera
Apply grid-calibration
Develop error-proofing processes
Construct 2D offset processes
Construct frames for use in a vision system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

ARET 2300 - Mechanical Components I Certificate Review (3)

This course is a review course for PMMI's (The Association for Packaging Processing Technologies) Mechanical Components I Certificate. This certificate is part of PMMI's Mechatronics Program Certification. The PMMI certificate is an industry recognized stackable credential endorsed by the National Association of Manufacturers. This Mechanical Components I review course covers the principles and applications of the most commonly found mechanical drive components as used in packaging machinery and systems. Topics reviewed and expanded on include simple mechanical power transmission devices such as shafts, belts, chains, cams and gears with an emphasis on application and troubleshooting. An understanding of simple mechanical components provides the background necessary to explore more complex systems of components used on all types of packaging equipment. Upon completion of this course and through a unique industry partnership with PMMI, students will be able to take the Mechanical Components I test and have the opportunity to earn a nationally recognized certificate while at Hennepin Technical College. This course is aimed at entry level technicians who may be involved in the assembly, test, startup, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. This is a review course and it is assumed the student has taken previous automation courses or has basic knowledge of the topics to be covered.

Prerequisite: ARET1125 and ARET1130 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe mechanical drives
Examine mechanical equipment safety procedures
Differentiate between six types of key fasteners
Examine power transmission devices and shafts
Describe V-belt drives
Describe chain drives
Characterize gear drives
Describe synchronous belt drives
Categorize lubrication materials and procedures
Describe couplings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 2320 - Industrial Electricity I Certificate Review (3)

This course is a review course for PMMI's (The Association for Packaging Processing Technologies) Industrial Electricity I Certificate. This certificate covers basic safety practices for voltages up to 600 volts and knowledge of voltage, current and power in AC and DC circuits, circuit analysis of series and parallel loads, and basic understanding of resistors, capacitors, and inductors. It applies these fundamentals to simple applications that would be found in residential, light commercial and simple industrial use. Candidates should be able to interpret and troubleshoot circuits used for lighting, across the line 3 phase motor starting, and simple relay logic with devices such as control transformers, fuses & circuit breakers, pushbuttons & selector switches, pilot lights & alarm devices,

solenoids, 3 phase motor starters, motor overloads, limit switches, and combinations of control relays to perform basic logic functions. Candidates should be familiar with simple wiring practices for using these devices and with component level troubleshooting of these devices. Upon the completion of this course and through a unique industry partnership with PMMI, students will be able to take the Industrial Electricity I test and have the opportunity to earn a nationally recognized certificate while at Hennepin Technical College. A basic knowledge of industrial electricity is needed to understand the basic operation of all type of commercial and industrial equipment and to gain further knowledge of more complex packaging machines and systems. This basic knowledge of industrial electricity would be expected of an entry level electrician working in facilities maintenance or assisting in the assembly, test, startup, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. This course is aimed at entry level technicians who may be involved in the assembly, test, startup, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. This is a review course and it is assumed the student has taken previous automation courses or has basic knowledge of the topics to be covered.

Prerequisite: ARET1175 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain Electricity and Electrical Circuits
Explain Voltage, Current and Resistance
Integrate power and circuit protection in series and parallel circuits
Apply electromagnetism, inductance and capacitance to packaging machinery
Characterize combination circuits (series/parallel)
Assess troubleshooting methods for use in basic circuits
Characterize transformers
Implement manual motor control and protection with 3-phase motors
Employ electrical control ladder logic in basic electrical wiring and construction
Assess safety in control component troubleshooting
Differentiate control relays and pilot devices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 2330 - Industrial Electricity II Certificate Review (3)

This course is a review course for PMMI's (The Association for Packaging Processing Technologies) Industrial Electricity II Certificate. The Industrial Electricity II certificate builds upon the Industrial Electricity I certificate. After completion of this course students will understand more complex motor starting circuits such as jogging, hand-off-automatic, reversing, and reduced voltage starting. They will become familiar with time-based, count-based and sequential control of multiple output loads utilizing control relay logic and automatic input devices such as limit, flow and pressure switches to provide feedback. They will understand basic electro-fluid power circuits where relay logic is used to operate devices such as pneumatic or hydraulic cylinders through electrically piloted directional control valves. Basic understanding of the various types of electronic sensors, timers and counters used in industrial control is required. Students become familiar with the sizing and installation of various types of electrical conductors and raceways used in or around industrial machinery and will understand how to properly wire an industrial control panel. Finally, students will develop an understanding of basic troubleshooting techniques and practices, not only for the

individual components but also for systems of components. This advanced knowledge of industrial electricity and control systems is needed to understand the complex operations of machines and systems that might be used for an electro-mechanical packaging line. Upon the completion of this course and through a unique industry partnership with PMMI, students will be able to take the Industrial Electricity II test and have the opportunity to earn a nationally recognized certificate while at Hennepin Technical College. This is a review course and it is assumed the student has taken previous automation courses or has basic knowledge of the topics to be covered.

Prerequisite: ARET1180 and ARET2320 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Troubleshoot Electrical Circuits utilizing multiple troubleshooting methods
Apply reversing and jogging motor controls to industrial circuits
Explain automatic input devices applied to timer control functions, counters, and solenoid activated valves
Utilize control relays for sequential control
Assess electronic sensors as applied to packaging machinery
Analyze electrical control system wiring and diagrams
Determine proper raceway and conduit construction
Incorporate control and power transformers into packaging machinery
Employ conductors, disconnects and overcurrent protection in packaging machinery
Prescribe proper electrical safety procedures and tools for industrial systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 2340 - Programmable Logic Controllers I Certificate Review (3)

This course is a review course for PMMI's (The Association for Packaging Processing Technologies) Programmable Logic Controllers (PLC) I Certificate. This certificate covers the principles and applications of different types of logic and programming used to control packaging machinery and systems. Topics include hardware and software composition of control systems, input/output interfacing, basic logic commands and common programming instructions. There is additional emphasis on common program tasks, and troubleshooting PLC based systems. This course will cover both address-based and tag-based PLC systems. The knowledge of relay logic, ladder programming and input/output devices is needed to understand and maintain all types of common packaging equipment. This certificate is aimed at entry level technicians who may be involved in the assembly, test, start up, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. Upon the completion of this course and through a unique industry partnership with PMMI, students will be able to take the Programmable Logic Controllers I test and have the opportunity to earn a nationally recognized certificate while at Hennepin Technical College. This is a review course and it is assumed the student has taken previous automation courses or has basic knowledge of the topics to be covered.

Prerequisite: ARET2110 and ARET1185 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Summarize the operation of a PLC
Break down the memory organization and addressing scheme of a PLC
Examine discrete input/output interfacing
Examine the function and use of monitoring devices
Construct basic PLC Logic instructions
Examine PLC timer and counter instructions
Apply basic PLC motor control applications
Apply basic PLC sequencing applications
Apply basic PLC machine applications
Troubleshoot PLC based systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 2360 - Automated Fluid Power I Certificate Review (3)

This certificate provides the student with an understanding of the function, operation, and application of common components used in fluid power circuits and systems. It also provides the student with an understanding of how fluid power components and accessories are placed together to create circuits and systems for powering industrial machines. The major emphasis is on pneumatics with a lesser emphasis on hydraulics and vacuum systems. Electro-fluid power troubleshooting is emphasized. This certificate is targeted to mechanics, technicians and technologists who will be involved in the application, installation, modification or troubleshooting of fluid power systems in packaging and manufacturing environments. Upon completion of this course and through a unique industry partnership with PMMI, students will be able to take the Fluid Power I Certificate test and have the opportunity to earn a nationally recognized certificate while at Hennepin Technical College. This course is aimed at entry level technicians who may be involved in the assembly, test, startup, troubleshooting, maintenance, repair or upgrade of basic packaging machinery modules. This is a review course and it is assumed the student has taken previous automation courses or has basic knowledge of the topics to be covered.

Prerequisite: ARET2105 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe single and double-acting pneumatic and hydraulic cylinders
Examine best practices in the creation of fluid power circuits and logic
Describe compressors, conditioners, lubricators and filters as utilized in manufacturing equipment
Employ fluid power motors in manufacturing equipment
Employ tubing, hoses, connectors, and fittings in the creation of fluid power systems
Assess Electro-fluid power systems
Apply directional control, flow control, relief, and pressure sequence valves in manufacturing equipment
Apply safety practices in fluid power systems through the use of gauges, regulators, and other instruments
Analyze the use of vacuum systems in manufacturing equipment
Utilize fluid power theory in the trouble-shooting and testing of manufacturing machinery

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ARET 2500 - Industrial Networks (2)

This course will expose the students to many of the different Industrial Networks that will be encountered in a manufacturing setting. Students will gain an understanding of the network infrastructure utilized by industrial machinery and the communication profiles used. The communication profiles will include but not be limited to: Serial Communication, RS-232, Ethernet, Modbus, Profibus, DevicNet, Foundational Fieldbus and AS-I Bus. Additionally Fieldbuses and cabling procedures will be discussed and how they are applied in a Distributed Control System (DCS).

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or METS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze how data networks are used in industrial facilities
Select the methods used to control information flow within a network
Identify the types of cables used to connect computers and industrial machinery within a network
Distinguish the physical layer of two or more device buses
Examine Distributed Control Systems (DCS) and their application in an industrial facility
Explain how to use a DCS interface to obtain process data and troubleshoot industrial equipment
Classify network configurations for a DCS
Integrate Fieldbuses into a DCS

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 2540 - Project Management for Manufacturing (2)

This course is intended and as an introduction to Project Management as executed at the production floor level within the manufacturing industry. The course will explore typical types of projects that manufacturing staff oversee including planned maintenance shut-downs, manufacturing process improvements projects, and capital acquisition/installation projects. The Project Management Institute's (PMI) A Guide to the Project Management Body of Knowledge (PMBOK ® Guide) will be explored and used as a context to plan and execute projects in the manufacturing field. Students will utilize project management software to plan, execute, and close-out projects that occur in manufacturing. Risk management will also be explored in the context of a manufacturing environment. PMBOK ® Guide is a registered mark of the Project Management Institute, Inc.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or METS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore leading industrial project teams
Outline the development and control of project scopes
Organize the planning and scheduling of a project
Evaluate risk management techniques for project management
Analyze the execution and control of a project
Illustrate planning and status reporting communications
Use project management software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARET 2560 - Instrumentation and Process Control I (3)

The purpose of this course is to introduce students to instrumentation and process controls. This course will focus on the basic instrument and process control channels utilized in manufacturing environments. Students will be exposed to a variety of control systems, learn calibration methods, explore proportional integral control, utilize computer systems to design and test systems, and work with simulators to replicate industrial situations. This course will focus on systems utilized in the packaging industry, system automation, and robotics.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or METS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Categorize normal versus emergency sources of power for manufacturing applications
Illustrate the function and installation of electronic transmitters and temperature detectors
Explain calibration
Analyze methods of calibration
Analyze how various positioners function and are calibrated
Explain Process Control
Categorize basic control systems
Devise a basic instrument channel diagram

Explain derivative control

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARET 2580 - Instrumentation and Process Control II (3)

This course will introduce the student to basic process control theory including the fundamentals of process control loops and tuning. Troubleshooting techniques will be discussed and applied on manufacturing equipment. Students will utilized various software packages to construct and analyze systems. Integration of Programmable Logic Controllers (PLC's), Human Machine Interfaces (HMI) and motor controllers will be discussed. This course will focus on the instrumentation and process control system as utilized on packaging machinery, automation systems, and robotics.

Prerequisite: ARET2560

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Report how to verify mechanical installation of control systems
Illustrate continuity checks on both electrical and pneumatic loops
Demonstrate troubleshooting techniques in a loop
Interpret basic process control theory
Examine the function and application of various Proportional Integral Derivative (PID) controls
Illustrate how electronic single loop controllers work
Manipulate software to construct control systems
Integrate Human Machine Interface (HMI) into Programmable Logic Controller (PLC) systems
Appraise motor control systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP - Audio Production

ARSP 1100 - Introduction to Recording (3)

This course is an introduction to the theory of sound and the recording process. The course introduces audio terminology, principles of sound and hearing, parts of basic equipment, recorder operation and signal storage methods.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and concurrent enrollment in ARSP1110 and ARSP1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of analog signal flow theory
Explain fundamental waveform characteristics
Diagram recording head adjustments
Explain tape construction
Explain digital recording and reproduction processes
Demonstrate an understanding of analog recording theory
Demonstrate an understanding of sound and hearing
Demonstrate an understanding of digital recording theory
Apply correct audio terminology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ARSP 1110 - Studio Operations (4)

The lecture portion of this course covers the basic operational systems of the recording studio, setup and signal flow of consoles, patchbays and studio documentation. The lab covers practical application of the theories and concepts learned in the lecture.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and concurrent enrollment in ARSP1100 and ARSP1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply analog signal flow theory
Apply analog recording theory

Produce a multitrack commercial
Produce a radio play
Produce an industrial narration
Operate analog recording equipment
Apply correct microphone techniques
Demonstrate correct patchbay application
Develop session documentation
Troubleshoot studio problems
Develop client management techniques
Complete projects by designated due dates
Apply digital recording theory

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ARSP 1130 - Audio Transducers (3)

This course covers theory, characteristics and operation of microphones, loudspeakers, crossovers and speaker/room considerations in the monitoring environment.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and concurrent enrollment in ARSP1100 and ARSP1110 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of the different operational types of microphones
Demonstrate an understanding of the polar pattern characteristics
Demonstrate an understanding of monitor theory
Evaluate various microphones and techniques
Identify industry standard transducers
Demonstrate an understanding of phantom power uses
Apply correct microphone handling procedures
Evaluate microphone instrument pairings
Diagnose phase-problems
Evaluate various near-field monitors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 1140 - Critical Listening (1)

This course introduces the student to listening critically and analytically in order to evaluate sound quality and to analyze common sound problems.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Estimate sound frequency
Estimate sound level
Estimate frequency bands
Analyze elements of recordings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ARSP 1300 - Multitrack Recording Theory I (3)

This course examines the practical techniques of multitrack recording. Topics include session operating procedures, linear and disk-based digital recording techniques, the integration of virtual and live tracks, analog recording procedures, digital console signal flow, session management, audio production, and basic A for V techniques.

Prerequisite: ARSP1100, ARSP1110, ARSP1130 or instructor approval. This course should be taken concurrently with ARSP1310, ARSP1320, ARSP1331, and ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of digital console theory
Demonstrate an understanding of linear and direct to disk digital recording theory
Analyze production techniques and session management
Demonstrate basic electrical principals

Explain proper direct box use
Explain preproduction process
Demonstrate mixing process
Explain microphone choices
Solve ohm's law problems
Explain tracking procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ARSP 1310 - Multitrack Recording Lab I (3)

This course covers practical applications of techniques and theory covered in Multitrack Recording Theory I and is to be taken concurrently. The student will produce various music projects.

Prerequisite: ARSP1100 and ARSP1110. Prereq. or concurrent ARSP1300 or instructor approval. This course should be taken concurrently with ARSP1300, ARSP1320, ARSP1331, and ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize digital recording consoles
Utilize linear and digital recording mediums
Apply preproduction techniques
Produce music and jingle projects
Determine session priorities
Organize the production team
Optimize session efficiency
Demonstrate professionalism
Arrange talent for projects
Produce projects by the deadline

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 1320 - Audio Signal Processing (3)

This course covers the theory and operation of audio signal processors. In lectures, discussions and labs, students are introduced to functions and parameters of EQ`s, VGA`s, Delays and Reverbs.

Prerequisite: ARSP1100, ARSP1110 or insturctor approval. This course should be taken concurrently with ARSP1300, ARSP1310, ARSP1331, and ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze VGA techniques
Demonstrate VGA techniques
Analyze EQ techniques
Demonstrate EQ techniques
Analyze Delay techniques
Demonstrate Delay techniques
Analyze Reverb techniques
Demonstrate Reverb techniques
Compare various industry standard signal processors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 1331 - Introduction to MIDI (3)

This course covers basic MIDI (Musical Instrument Digital Interface) principles and techniques, the virtual studio concept, software, hardware, sequencers, sound design, and MIDI applications in Audio for Video.

Prerequisite: ARSP1100, ARSP1110, ARSP1130 or instructor approval. This course should be taken concurrently with ARSP1300, ARSP1310, ARSP1320, and ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of MIDI operational theory
Compare different hardware and software based MIDI systems
Analyze various CPU based MIDI applications
Produce an audio for video project using MIDI

Explain the history of MIDI
Explain MIDI messages
Demonstrate MIDI equipment hookup
Diagram proper MIDI patchbay setup
Incorporate MIDI operational theory into software based environment
Troubleshoot common MIDI problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 1340 - Location Recording (2)

This course covers the fundamentals and basic techniques used in non-studio recording for news gathering, conference, public speaking, music and sound effects recording. The main emphasis will be hands-on and students will record, edit and mix a variety of location projects.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of non-studio recording techniques
Produce various on-location sound effects
Produce various location recordings
Operate portable mixer
Evaluate various stereo mic techniques
Produce a detailed preproduction plan for location recordings
Evaluate microphone choices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARSP 1351 - Music Fundamentals (1)

This course covers fundamental concepts of rhythm, song structure, note values and the circle of fifths.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain song structure
Identify rhythm concepts
Identify note values
Explain the circle of fifths
Identify drum parts
Divide songs into bars and beats

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ARSP 1380 - Production Lab I (3)

In this course the student will improve production skills learned by working on client based projects.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a further understanding of concepts applying to audio production
Produce an industry standard project
Demonstrate professionalism with clients
Adapt to developing situations in the studio
Delegate tasks to the correct team members
Develop a detailed pre-production plan
Expand production skills
Handle client relations productively and professionally
Investigate new approaches to the project
Develop detailed logs of the sessions
Complete the project
Conduct the sessions in a time-conscious manner

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 1390 - Production Lab II (3)

In this course the student will improve production skills learned by working on client based projects.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a further understanding of concepts applying to audio production
Produce an industry standard project relating to the agreed upon criteria
Demonstrate professionalism with clients
Adapt to situations as they develop in the sessions
Delegate tasks to the correct team members during the projects
Develop a detailed pre-production plan
Expand production skills as it applies to the project
Handle client relations in a professional and productive manner
Investigate new approaches to the desired production
Develop detailed logs of the sessions
Complete the project within the agreed upon deadline
Conduct the sessions in a time-conscious manner

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 1500 - Multitrack Recording Theory II (3)

This course is a continuation of the practical techniques of multitrack recording covered in Multitrack Recording Theory I. Topics include advanced production techniques, advanced linear and disk-based digital recording

techniques, advanced consoles and automation, mixing techniques, basic troubleshooting, A for V concepts, and career strategies.

Prerequisite: ARSP1300 and ARSP1310. Prereq. or concurrent ARSP1320, ARSP1331, ARSP1510 and ARSP2120 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of advanced production techniques
Demonstrate an understanding of advanced audio system configurations
Demonstrate an understanding of advanced Audio for Video concepts
Develop a career strategy
Explain studio psychology considerations
Demonstrate correct microphone selections
Demonstrate correct session preproduction procedures
Develop a patchbay design
Develop a business card
Compile a beauty reel
Create a detailed audio resume
Generate a 5 year plan

Text and References: A listof textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ARSP 1510 - Multitrack Recording Lab II (3)

This course covers practical applications of techniques and theory covered in Multitrack Recording Theory II and is to be taken concurrently. The student will record and mix various music and A for V projects.

Prerequisite: ARSP1500 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate advanced production techniques
Demonstrate client management skills
Produce various music projects
Develop detailed preproduction plans
Demonstrate professionalism
Determine session priorities
Select and place microphones
Develop a final mix
Resolve session problems
Complete projects by assigned deadlines

Troubleshoot problems in the sessions
Develop talent's cue mix

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 1531 - Using MIDI Equipment (3)

This course is a continuation of the basic MIDI principles and techniques covered in Introduction to MIDI, with emphasis on advanced sound design, MIDI and disk-based digital recording integration, waveform/sample editing, and A for V techniques.

Prerequisite: ARSP1331 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of advanced MIDI specifications
Analyze approached to scoring for video
Produce an advanced Audio for Video sound design and score
Explain event list editing
Explain notation editing
Explain graphical editing
Design ambient sounds
Design sound effects
Compose a musical score
Develop a further understanding of the concepts of MIDI

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 1541 - Acoustics and Recording Studio Design (2)

This course covers principles of sound, room measurement techniques and a discussion of the acoustical properties of room materials and their effect on room acoustics. Special emphasis will be given to cost effective studio design, or more specifically, how to build a recording studio with a limited budget.

Prerequisite: ARSP1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of sound and room measurement techniques
Demonstrate an understanding of the acoustical properties room materials and their effect on room acoustics
Demonstrate an understanding of studio design considerations
Produce an achievable studio design
Evaluate absorber types
Evaluate soundproofing tactics
Calculate room axial modes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ARSP 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a further understanding of concepts applying to audio production
Produce an industry standard project relating to the agreed upon criteria
Demonstrate professionalism with clients
Adapt to situations as they develop in the sessions
Delegate tasks to the correct team members during the projects
Develop a detailed pre-production plan
Expand production skills as it applies to the project
Handle client relations in a professional and productive manner
Investigate new approaches to the desired production

Develop detailed logs of the sessions
Complete the project within the agreed upon deadline
Conduct the sessions in a time-conscious manner

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1-4

ARSP 2100 - Multitrack Recording Theory III (1)

This course is a continuation of the practical techniques of multitrack recording covered in Multitrack Recording Theory II. Topics include: mastering, beauty reel assembly, advanced session management skills, and specialized equipment applications.

Prerequisite: ARSP1500 and ARSP1510. This course should be taken concurrently with ARSP2111

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of various mastering techniques
Demonstrate an understanding of advanced music and A for V techniques
Demonstrate an understanding of advanced DAW software techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ARSP 2111 - Multitrack Recording Lab III (3)

This course covers practical applications of techniques and theory covered in Multitrack Recording Theory III. The student will record and mix various projects.

Prerequisite: ARSP1500 and ARSP1510

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate advanced session management skills
Produce an advanced music project
Produce an advanced audio for video project
Apply advanced mixing concepts
Demonstrate professionalism
Troubleshoot studio problems
Generate a professional level product
Perform duties specific to roles on a production team
Manage time effectively in sessions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 2115 - Audio Mixing Techniques (2)

This course covers advanced mixing techniques on both digital and analogue mixing consoles, and basic digital mastering.

Prerequisite: ARSP1500 and ARSP1510 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of advanced mixing techniques
Produce final mixed projects
Demonstrate basic mastering concepts
Develop dynamics processor techniques
Develop 4-D mixmaps for the mixes
Enhance the tracks through the mixing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARSP 2120 - Digital Audio Theory (Pro Tools 101/110) (3)

This course covers principles and practical applications of digital audio recording and editing, emphasizing disk-based random access systems. Successful completion of this course will result in the completion of the Pro Tools 101/110 curriculum and enablement to take the AVID Pro Tools 101/110 certification exams.

Prerequisite: ARSP1100, ARSP1110, ARSP1130 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate use of disk-based recording systems
Demonstrate use of basic digital audio recording and editing techniques
Demonstrate use of current DAW software applications
Demonstrate use of computer history and components
Personalize application preferences
Identify industry standard Pro Tools systems
Develop customization of Pro Tools preferences
Complete application exercises
Demonstrate destructive and non-destructive editing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 2150 - Music Business (2)

This course covers legal and business topics that pertain to the music industry such as equipment purchasing/leasing, studio rate negotiation, financing, contracts and publishing.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate an understanding of contracts/negotiations
Demonstrate an understanding of publishing
Demonstrate an understanding of copyright laws

Produce a mock copyright court case
Examine rate negotiations
Evaluate different contracts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ARSP 2175 - Pro Tools 130-Gaming Audio (2)

This course provides students with exposure to the core skills, workflow, and concepts involved in creating and implementing game audio using Pro Tools systems. It covers basic sound design techniques along with example workflows. Session time is divided between demonstration and hands-on practice, with time to experiment with sample material.

Prerequisite: ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify game audio workflow
Implement dialog into game audio workflow
Incorporate Foley into game audio workflow
Incorporate sound effects into game audio workflow
Implement background (ambient) sounds into game audio workflow
Create an interactive music score
Incorporate realistic vehicle sounds into game audio workflow
Create dynamic cinematics for game audio workflow

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARSP 2325 - Digital Audio Theory II (Pro Tools 201/210M) (3)

This course covers advanced applications of digital audio recording and editing, emphasizing mixing techniques of Pro Tools systems. Successful completion of this course will result in the completion of the AVID Pro Tools 201/210m curriculum and enablement to take the AVID Pro Tools 201/210m certification exams.

Prerequisite: ARSP2120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate advanced Pro Tools recording techniques
Demonstrate advanced Pro Tools editing/mixing techniques
Demonstrate advanced Pro Tools layback techniques
Explain DSP processing and management
Demonstrate real time automation basics in Pro Tools
Demonstrate knowledge of processing approaching in Pro Tools
Apply virtual console concepts to a music mix
Create final mixes using Pro Tools
Demonstrate final bounce options

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ARSP 2340 - Audio Configuration and Troubleshooting (2)

This course reviews basic electronics and sound principles and discusses set-up and operation of audio equipment. Topics include system configuration and signal routing, equipment interface, grounding and maintenance.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain basic electronic principles
Differentiate between analog and digital equipment configurations
Use system interfacing
Demonstrate system grounding and troubleshooting
Use calibration equipment
Explain periodic system maintenance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ARSP 2380 - Production Lab III (3)

In this course the student will improve production skills learned by working on client based projects.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a further understanding of concepts
Produce an industry standard project
Demonstrate professionalism with clients
Adapt to situations as they develop in the sessions
Delegate tasks to the correct team members
Develop a detailed pre-production plan
Expand production skills
Handle client relations in a professional and productive manner
Investigate new approaches to the desired production
Develop detailed logs of the sessions
Complete the project
Conduct the sessions in a time-conscious manner

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 2390 - Production Lab IV (3)

In this course the student will improve production skills learned by working on client based projects.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a further understanding of audio production concepts
Produce an industry standard project
Demonstrate professionalism
Adapt to situations as they develop in the sessions
Delegate tasks to the team members
Develop a detailed pre-production plan
Develop new production skills
Handle client relations in a professional and productive manner
Investigate new approaches to the desired production
Develop detailed logs of the sessions
Produce a finished product
Conduct the sessions in a time-conscious manner

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

ARSP 2580 - Audio Recording Internship I (2)

This is a cooperative program between the Hennepin Technical Colleges` Audio Recording Program and professional production facilities to allow the student an employment-like work experience.

Prerequisite: Completion of 48 credits or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate technical competence
Demonstrate professionalism
Organize schedules with supervisor
Demonstrate organizational skills
Demonstrate cooperation
Apply ARSP concepts to the internship

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 2

ARSP 2585 - Audio Recording Internship II (2)

This is a cooperative program between the Hennepin Technical Colleges` Audio Recording Program and professional production facilities to allow the student an employment-like work experience.

Prerequisite: Completion of 48 credits or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate technical competence
Demonstrate professionalism
Organize schedules with supervisor
Demonstrate organizational skills
Demonstrate cooperation
Apply ARSP concepts to the internship

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 2

ARSP 2590 - Audio Recording Internship III (2)

This is a cooperative effort between Hennepin Technical College and professional audio recording facilities to allow the students employment-like work experience.

Prerequisite: ARSP2585 and instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate technical competence
Demonstrate professionalism
Organize schedules with supervisor

Demonstrate organizational skills
Demonstrate cooperation
Apply ARSP concepts to the internship

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 2

ARSP 2595 - Audio Recording Internship IV (2)

This is a cooperative effort between Hennepin Technical College and professional audio recording facilities to allow the students employment-like work experience.

Prerequisite: ARSP2585 and instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate technical competence
Demonstrate professionalism
Organize schedules with supervisor
Demonstrate organizational skills
Demonstrate cooperation
Apply ARSP concepts to the internship

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 2

ARTS - Arts

ARTS 2000 - Elements of Design (3)

Students will explore the elements and principles of design. This course illuminates the patterns and trends that designers draw upon in creating new work and illustrates the impact of design on modern life, commerce, and culture.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL1021

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Distinguish design from other areas of the arts
Identify the elements and principles of design
Identify how design is used to convey ideas
Evaluate the impact of design on society
Create designs using elements and principles of specific historical periods
Integrate design elements and principles in a created work
Evaluate design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6.

ARTS 2050 - Introduction to Art (3)

This course provides a basis for understanding the visual arts from the perspective of the artist's creative process and the viewer's creative participation. Students will explore how form and meaning in art are shaped by many influences. A museum visit is part of the regular class schedule.

Prerequisite: ENGL1021 and ENGL0921 or ESOL0842

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify key artists' process, materials and methods
Use the formal language of visual art: line, shape/volume, color, space, etc.
Discuss art and artists within their cultural and historical contexts
Compare and contrast the development of visual ideas/conventions within and across cultures
Utilize visual analysis to assess form, materials and techniques used for the creation of artwork
Identify the purpose of key artwork and artifacts
Compare and contrast artwork from different cultures, religions and social organizations
Compare past traditional artistic endeavors to contemporary culture
Explain bodies of work within specific museum collections

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MnTC Goal Areas: 6 & 8.

ARTS 2120 - Photographic Arts (3)

This course provides a framework for critically considering significant photographers and their work. Students are expected to describe, interpret, and evaluate the origins, stylistic changes and artistic innovations in the history of photography from the 19th Century through contemporary times.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 and Qualifying score on reading assessment test OR ENGL0921 or ESOL0842

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the world history of the art of photography
Explain the aesthetics of the art of photography
Analyze the work of photographers throughout history
Assign key photographs to various historical contexts
Identify key innovations and technological developments throughout the history of photography
Explain how the world history of photographic imagery and advances in technology affect world culture
Identify abstract and conceptual ideas in various historical photographic images and projects
Relate the design elements of form, color, image, and space to photography
Compare and contrast key historical art photographs, projects, photographic styles, and criticism
Use a working knowledge of the language of photography

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6.

ARTS 2130 - Digital Photography I (3)

This course introduces the art of digital photography, covering various genres in digital photography including nature, portraiture and abstraction. The course also considers composition, perspective, black and white vs. color, light, etc. relative to producing photographs. The focus of the course will be on photography as a fine art, and attention will be given to practical applications within that context. Technical basics, such as equipment purchase and maintenance, camera settings, printing and scanning will also be covered. Finally, the course will ask students to consider the work of important photographers past and present.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Gain proficiency in various non-traditional photographic techniques (blurred imagery, abstractions, etc.) as they apply to digital photography
Demonstrate a working knowledge of the camera
Apply the elements of design (i.e. line, shape, color, texture) as they relate to digital photography
Organize a final portfolio of photographs that illustrates a personal photographic style
Evaluate classmates' photographs in critique sessions
Demonstrate a basic knowledge of color manipulation and other photographic editing techniques as they apply to digital photography
Design photographic montages out of several photographs and/or other media
Analyze the work and lives of key historical and contemporary photographers
Demonstrate proficiency in various photographic techniques and strategies as they apply to nature, portraiture and abstraction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MnTC Goal Areas: 6.

ATEC - Automotive Technology

ATEC 1010 - Car Care for Everyone (1)

This course is for anyone who wants to keep their car running better, longer. The course will cover basic vehicle operation, including engines, brakes, steering and suspension. It will offer hands on instruction in basic vehicle inspection, and include some easy maintenance tasks.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Inspect underhood fluid levels
Adjust tire pressure

Explain how to select a mechanic
Replace air filters
Jump start a dead battery
Identify vehicle maintenance requirements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

ATEC 1020 - Basic Skills for Automotive Mechanics (2)

This course is for students entering the Automotive Technology program who have not worked in the trade, and have little or no experience in basic mechanics. The course will cover basic skills including tool selection and usage, basic electricity, jacking and hoisting cars. We will also cover threaded fastener ID and service, and shop safety. Students can gain confidence and improve their performance in the Automotive Technology Program.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify threaded fasteners
Adjust tire pressure
Select the correct tool for the job
Check for system voltage with a test light
Jump start a dead battery
Torque threaded fasteners
Perform component removal with correct tools
Use a hoist to lift a car for service
Perform shop procedures according to industry safety standards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ATEC 1050 - Introduction to Automotive Technology (2)

This is an introductory course for students entering the Automotive Technology program. Students will receive information about employment options within the trade, safety and shop operations, and online vehicle information systems. The course will give the students an overview of common hand tools and shop equipment.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify common hand tools
Perform precision measurements
Describe shop safety requirements
Find vehicle information using Alldata
Demonstrate vehicle lifting and jacking procedures
Demonstrate safe usage of shop equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

ATEC 1075 - Welding for Transportation (2)

Students will learn how to use oxy-acetylene cutting, heating, and metal inert gas (MIG) welding in automotive applications. Students will become familiar with how the MIG welding process is used for metal joining and the application to transportation careers.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify procedures for safe handling of high pressure gas cylinders
Perform cutting and heating related to automotive applications
Perform proper MIG welding techniques
Determine the correct welder type, (electrode, wire type, diameter, and gas) to be used in a specific welding situation
Set up welding equipment
Determine proper protection techniques when welding on a vehicle

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ATEC 1105 - Engine Repair I (3)

In this course the student will learn the operation of the internal combustion engine including valve trains, cooling systems, and short block components. This will include service operations on the lubrication and cooling systems. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete work order
Identify engine concern
Research applicable vehicle and service information
Interpret vehicle and major component identification numbers
Inspect engine assembly for fuel, oil, coolant, and other leaks
Diagnose engine noises
Diagnose the cause of excessive oil consumption
Perform engine vacuum tests
Perform cylinder power balance tests
Perform cylinder cranking compression tests
Perform cylinder leakage tests
Perform oil pressure tests
Perform cooling system service
Inspect drive belts, tensioners, and pulleys
Perform cooling system service
Test oil temperature and pressure switches and sensors
Perform oil and filter change

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ATEC 1110 - Engine Repair II (3)

In this course the student will learn how to remove, inspect, measure, service, and reassemble the valve train and lower end components of the engine. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1105

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Remove engine
Install engine
Install engine covers using gaskets, seals and sealers as required
Visually inspect cylinder head(s)
Replace valve stem seals on an assembled engine
Inspect valves and valve seats
Check valve face-to-seat contact
Check valve heights
Inspect hydraulic or mechanical lifters
Inspect timing belts and chains
Inspect camshaft
Disassemble block
Inspect engine block for visible cracks
Inspect cylinder walls/sleeves for damage
Inspect crankshaft
Inspect main and connecting rod bearings for damage and wear
Assemble engine block assembly

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1205 - Automatic Transmissions I (3)

In this course the student will learn the operation, service and repair of automatic transmission and transaxles. It includes fundamentals, disassembly and assembly, adjustment and operation and testing. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete work order
Identify transmission/transaxle concern
Locate applicable vehicle and service information
Locate vehicle and major component identification numbers

Interpret vehicle and major component identification numbers
Remove transmission/transaxle
Disassemble transmission/transaxle
Inspect valve body
Inspect internal transmission components
Inspect converter flex plate, attaching parts, pilot, pump drive, and seal areas
Measure torque converter endplay
Inspect thrust washers and bearings
Inspect oil delivery seal rings, ring grooves, and sealing surface areas
Inspect case bores, passages, bushings, vents, and mating surfaces
Inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings
Inspect transaxle final drive components
Inspect clutch drum, piston, check-balls, springs, retainers, seals, and friction/pressure plates
Test the operation of clutch and servo assemblies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1210 - Automatic Transmissions II (3)

In this course the student will learn in vehicle operation, service and diagnosis of automatic transmission and transaxles. It includes adjustment, operation, and testing. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1205

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose fluid loss and condition concerns
Perform pressure tests
Inspect transmission cables
Service transmission
Inspect speedometer drive gear, driven gear, vehicle speed sensor (VSS), and retainers
Diagnose electronic transmission control systems using a scan tool
Inspect powertrain mounts
Inspect vacuum modulator and hoses
Inspect governor assembly
Inspect external seals and gaskets
Inspect extension housing, bushings and seals
Diagnose noise and vibration concerns
Diagnose gear reduction/multiplication concerns
Perform stall test
Perform lock-up converter system tests
Diagnose mechanical and vacuum control system concerns
Assemble transmission/transaxle

Inspect cooler, lines, and fittings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1305 - Manual Drive Train & Axles (4)

In this course the student will learn the operation, service and repair of manual transmissions, transaxles, and drivetrain components. It includes fundamentals, diagnosis, disassembly, inspection, adjustments and reassembly of transmissions, transaxles, differentials, clutches, axles, driveshafts, and four-wheel drive/all-wheel drive components. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete work order
Identify drive train concern
Research applicable vehicle and service information
Locate and interpret vehicle and major component identification numbers
Diagnose clutch noises and problems
Inspect clutch assembly
Bleed clutch hydraulic system
Remove transmission/transaxle
Disassemble transmission/transaxle components
Remove transaxle final drive components
Test transmission/transaxle sensors and switches
Remove front wheel drive front wheel bearing
Inspect shafts, yokes, boots, and CV joints
Diagnose noise and vibration concerns
Diagnose fluid leakage concerns
Measure drive pinion bearing preload
Reassemble differential case assembly
Inspect differential housing
Disassemble transfer case and components
Diagnose electrical/electronic components of four-wheel drive systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

ATEC 1405 - Steering and Suspension (4)

In this course the student will learn the design, operation, and repair of vehicle steering and suspension systems. This will include two and four wheel alignment on conventional and McPherson strut suspension systems, tire balance and service. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe steering and suspension system theory and operation
Inspect steering and suspension system components
Perform component removal and reassembly
Diagnose steering and suspension components
Explain alignment theory and operation
Operate alignment equipment
Perform vehicle alignment
Apply proper tire terminology
Perform tire removal and repair procedures
Perform tire balancing procedures
Diagnose tire wear problems
Inspect and calibrate tire pressure monitoring systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ATEC 1505 - Brakes (4)

In this course students will learn skills needed to perform repairs on automotive brake systems. The course includes operation, troubleshooting, maintenance and repair of standard and Anti-Lock Brake Systems. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose hydraulic brake systems
Perform master cylinder bench bleeding procedures
Disassemble disc brake assemblies
Disassemble drum brake assemblies
Inspect brake drum and rotor assemblies
Diagnose braking concerns
Describe anti-lock brake system operation
Diagnose anti-lock brake components
Describe hydraulic brake system operation
Perform drum and rotor machining operations
Adjust brake system components to meet specifications
Assemble brake system components
Diagnose power assist brake unit concerns
Perform wheel bearing service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ATEC 1615 - Basic Electrical (3)

This course is designed to give students a basic working knowledge of the automotive field and basic electrical theory. Covered in this course are topics such as electronic service information, tools, Ohms law, usage of Digital Multimeter. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Inspect and test fusible links, circuit breakers and fuses
Demonstrate safe service and repair practices
Demonstrate proper tool terminology, usage, safety and identification
Demonstrate proper wiring repair techniques
Measure voltage, current and resistance in electrical/electronic circuits
Perform battery system tests
Inspect battery components
Apply ohms law to electrical circuit operation
Use wiring diagrams to understand circuit operation
Demonstrate proper use of a digital volt ohm meter
Assemble basic electrical circuits
Check electrical circuits with a test light

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1620 - Starting and Charging Systems (3)

In this course the student will learn the operation of automotive starting and charging systems. This will include diagnosis and repair of cranking motors, alternators, starter control, and charging system circuits. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Inspect starting system components
Perform starter system tests
Perform start motor disassembly and reassembly
Diagnose starting system problems
Describe starter system theory and operation
Describe charging system theory and operation
Inspect charging system components
Perform charging system testing
Perform alternator disassembly and reassembly
Diagnose charging system problems
Perform wiring repairs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1625 - Chassis Electrical (3)

In this course the student will learn the operation of electrical circuits that are common on the automobile. These will include circuit testing and repair of lighting, turn signal, warning lamp, gauges, blower motor, wiper and accessory circuits. The student will have hands-on training on supplemental inflatable restraints and body computer circuits. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Inspect gauges, sending units for cause of intermittent, high, low, or no gauge readings
Inspect connectors, wires, and printed circuit boards of gauge circuits
Diagnose the cause of incorrect operation of warning devices
Test sensors, connectors, and wires of electronic (digital) instrument circuits
Diagnose incorrect horn operation
Diagnose incorrect wiper operation
Diagnose incorrect washer operation
Diagnose incorrect operation of motor-driven accessory circuits
Diagnose incorrect heated glass, mirror, or seat operation
Diagnose incorrect electric lock operation
Diagnose supplemental restraint system (SRS) concerns
Disarm the airbag system for vehicle service
Arm the airbag system
Diagnose radio static and weak, intermittent, or no radio reception
Diagnose body electronic system circuits with a scan tool
Check for module communication
Diagnose abnormal light operation
Inspect incorrect turn signal or hazard light operation
Identify electronic modules and/or security systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ATEC 1705 - Heating and Air Conditioning (4)

In this course the student will learn the skills needed for automotive air conditioning service. It includes system theory of operation, temperature-pressure relationships of R-12 and R134a refrigerants, performance testing, reclaiming, recycling and recharging air conditioning systems. Heating, ventilation, and controls will also be covered. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Complete work order
Identify heating and air conditioning concern
Research applicable vehicle and service information
Locate vehicle and major component identification numbers
Performance test A/C system
Identify refrigerant type
Test A/C system
Inspect A/C compressor drive belts
Perform cooling system tests
Determine coolant condition and type
Perform cooling system service
Test electric cooling fan circuit
Diagnose malfunctions in the electrical controls of HVAC systems
Test A/C compressor clutch control systems
Capture A/C system refrigerant
Test recycled refrigerant for non-condensable gases
Perform evacuation and recharge

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

ATEC 1820 - Hybrid Electric Vehicle Systems (1)

In this course the student will be introduced to the basic operation and safe handling of Hybrid Electric Vehicles and their subsystems. Components such as the braking, transmission, electronic control, heating and air conditioning, and powertrain that are specific to HEV's will be covered.

Prerequisite: ATEC1615

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain Hybrid Electric Vehicle components and operation
Demonstrate proper and safe high voltage handling procedures
Diagnose Hybrid Electric Vehicle subsystems using a scan tool

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

ATEC 1850 - Ignition Systems (4)

This course familiarizes students with the theory, operation, and diagnosis of vehicle ignition and emission control systems. This includes PCV, EGR, catalytic converters, EVAP systems, and computer controlled ignition systems. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe emission system theory and operation
Inspect emission system components
Perform emission system tests
Remove and install emission system components
Diagnose emission systems
Describe ignition system theory and operation
Inspect ignition system components
Perform ignition system tests
Remove and install ignition system components
Diagnose ignition systems
Identify ignition scope patterns
Diagnosis catalytic converters

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3 Lab: 1

ATEC 1855 - Fuel Systems (4)

This course familiarizes students with the theory, operation, diagnosis, and repair of automotive fuel delivery systems including gasoline direct injection. This class will also include induction and exhaust systems, turbochargers, superchargers, and general engine diagnostics. This course will meet all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe fuel system theory and operation
Inspect fuel system components
Perform fuel system tests
Remove fuel system components
Install fuel system components
Diagnose vehicle fuel systems
Describe induction system theory and operation
Inspect vehicle exhaust systems
Perform exhaust system testing
Perform general engine mechanical diagnostic procedures
Analyze high pressure fuel systems
Explain operation of forced air induction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3 Lab: 1

ATEC 1860 - Engine Performance (4)

This course familiarizes students with the theory, operation, and diagnosis of computerized powertrain control systems. This will include scan tool operation, lab scope usage, and gas analysis. This course meets all applicable National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe theory and operation of computerized engine controls
Inspect computerized engine control components
Perform component tests
Operate diagnostic scan tools
Interpret data from four-gas analysis
Interpret Scan-Tool data
Diagnose computerized engine control systems
Perform vehicle repairs
Check for module communication errors
Identify transmission related driveability concerns
Explain reflashing procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3 Lab: 1

ATEC 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: ATEC1615 and Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently.
Organize work schedule.
Follow prescribed procedures.
Demonstrate safety.
Demonstrate initiative.
Integrate previously acquired skills.
Integrate previously acquired knowledge.
Display good judgment.
Demonstrate dependability.
Exhibit professionalism.
Organize work area.
Demonstrate cooperation.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ATEC 2100 - Automotive Professional Service (2)

This course familiarizes students with the concepts of automotive professional service. The course will cover topics such as greeting customers, interpreting repair orders and proper repair techniques. This course meets all applicable

National Automotive Technicians Education Foundation (NATEF) standards.

Prerequisite: ATEC1850 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze concerns on customer vehicles
Demonstrate proper vehicle repair techniques
Estimate vehicle repairs
Illustrate professional interactions with customers
Complete vehicle repair orders
Repair vehicles in accordance with industry standards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 1 Lab: 1

ATEC 2685 - Automotive Industry Internship I (5)

This course will provide the student with 200 hours of on-the-job training in the automotive industry. The student will use the knowledge gained in previous courses, and further develop their skills by working on customer vehicles at a vehicle repair facility.

Prerequisite: ATEC1505 and ATEC1615 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate professional attitude
Demonstrate dependable workplace behavior
Perform quality vehicle repairs
Demonstrate proper care and use of tools
Evaluate repair work
Demonstrate good communication skills
Diagnose vehicle malfunctions
Determine correct repair procedures
Use safe shop practices
Verify vehicle repairs
Produce a vehicle repair log
Integrate previously acquired knowledge and skills
Adapt to changing industry needs
Demonstrate use of resource information
Demonstrate good time management skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 5

ATEC 2690 - Automotive Industry Internship II (5)

This course will provide the student with 200 hours of on-the-job training in the automotive industry. The student will use the knowledge gained in previous courses, and further develop their skills by working on customer vehicles at a vehicle repair facility.

Prerequisite: ATEC1110, ATEC1210, ATEC1305, ATEC1405, ATEC1505, ATEC1625, ATEC1705 and ATEC1815

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate professional attitude
Demonstrate dependable workplace behavior
Perform quality vehicle repairs
Demonstrate proper care and use of tools
Evaluate repair work
Demonstrate good communication skills
Diagnose vehicle malfunctions
Determine correct repair procedures
Use safe shop practices
Verify vehicle repairs
Produce a vehicle repair log
Integrate previously acquired knowledge and skills
Adapt to changing industry needs
Demonstrate use of resource information
Demonstrate good time management skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 5

ATEC 2700 - Automotive Externship (3)

This course is for the student taking the AAS degree option and provides an opportunity to further develop skills and experiences in a formal work setting. Students must interview for and acquire their externship site. A minimum of 120 hours of work experience is required.

Prerequisite: ATEC2685, ATEC1805, ATEC1810, and ATEC1815

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify informal organizational interrelationships
Organize work space
Define formal organizational rules
Develop industry standard organizational skills
Evaluate theoretical concepts used during servicing vehicles
Work independently
Analyze repair decisions using strategy-based problem-solving techniques
Perform maintenance work on customer vehicles

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 3

ATEC 2800 - Introduction to Hybrid Electric Vehicle Technology (3)

This course provides basic hybrid electric vehicle safety procedures; common hybrid electric vehicle component fundamentals; current hybrid vehicle design; an introduction to hybrid electric vehicle maintenance and troubleshooting and an introduction to hybrid electrical vehicle test equipment and procedures.

Prerequisite: ATEC1615, ATEC1620, and ATEC1625 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define series power flow
Define parallel power flow
Identify common hybrid vehicle powertrain sub-systems
Identify different manufactures' hybrid technology
Describe hybrid vehicle components
Identify advantages of hybrid vehicle technology
Identify safe high voltage service disconnect procedures
Perform safe high voltage service disconnect procedures
Identify personal protection equipment
Evaluate hybrid vehicle repair tools
Analyze high voltage cables

Perform insulation checks
Evaluate high voltage batteries
Perform power law calculations
Analyze scan data

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ATEC 2805 - Hybrid Electric Vehicle Batteries (3)

This course provides hybrid electric vehicle high voltage battery design and basic testing techniques. Battery safety and control systems will be covered. Both nickel-metal hydride and lithium batteries will be covered, but the primary focus will be on nickel-metal hydride battery technology. Furthermore, the 12 volt system will be covered as it pertains to the high voltage system.

Prerequisite: ATEC2800 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Safely disable hybrid electric vehicle high voltage systems
Define battery state-of-charge
Test high voltage interlock systems
Identify types of high voltage interlock systems
Evaluate pre-charge systems
Evaluate high voltage safety systems
Analyze high voltage battery construction
Perform battery tests
Analyze battery management systems
Contrast high voltage battery technology
Evaluate battery pack contactors
Analyze battery scan tool data to determine state-of-charge

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ATEC 2810 - Hybrid Electric Vehicle Machines and Controls (3)

This course covers the theory and operation of electric machines and power inverters used in hybrid electric vehicles. Provides an overview of the induction machine and the permanent magnet machines. Testing of electric machine and power inverters will be covered.

Prerequisite: ATEC2800 and ATEC2805 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate induction machine components
Analyze induction machine operation
Evaluate permanent magnet machine components
Analyze permanent magnet machine operation
Evaluate stator winding designs
Describe power inverter function
Analyze insulated gate bipolar transistors
Examine electric machine waveforms
Interpret voltage, horsepower, and torque relationships
Test electric machine stator windings
Perform vehicle diagnostic scan checks
Analyze dc-dc converter operation
Test DC converter output
Identify electric machine sensors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

BIOL - Biology

BIOL 2001 - Biology in Society (4)

This course familiarizes students with fundamental biological principles and processes occurring in our natural world with an emphasis on real-world applications and the social impact of advances in the biological sciences. It is designed for non-science majors. Topics include scope of life, process of science, basic chemistry, cells, microorganisms, public health, biodiversity, evolution, and ecology. The laboratory component of the course is designed to give students hands-on applications of the principles taught in lecture. This course covers the

characteristics of hazardous waste and the necessary safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on math assessment test OR MATH0950

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Distinguish scientific thinking from other ways of thinking
Evaluate current topics using scientific methodologies
Demonstrate a basic knowledge of biological chemistry
Describe the characteristics and requirements for life
Compare eukaryotic and prokaryotic cellular and subcellular structures
Explain the relationship between the processes of cell metabolism and nutritional requirements
Explain the process and role of photosynthesis
Explain cell division and the consequences of errors
Describe various DNA technologies and their impact in society
Determine the probability of offspring genotypes
Classify living organisms
Explain the principles of evolution and the evidence to support the theory of common descent
Describe the various relationships between living organisms and populations
Summarize the flow of energy and chemicals within ecosystems
Assess the human impact on the biosphere
Summarize conservation and restoration efforts
Analyze the effects of human biology and behavior on public health
Compare various methods of disease prevention and therapies
Document scientific observations and experimental data to determine trends
Identify microorganisms using a microscope

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2, 3 & 10.

BIOL 2003 - Nutrition and Health (3)

This course examines the various aspects of nutrition and provides a broad overview of the factors that impact health and wellness. Topics include the nutritional requirements specific to human life cycles, nutrition to promote health, nutrition and disease processes, food safety, environmental and nutritional implications of food processing, genetic modifications, and current agricultural practices. This course also addresses the socio-cultural factors that impact health.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Analyze the basic nutrients needed for a healthy diet
Apply principles of basic nutrition to individuals
Illustrate the nutritional challenges faced when adapting to a new culture
Analyze nutritional needs throughout the life span
Formulate dietary plans throughout the life span
Analyze therapeutic diets related to physiological changes resulting from disease processes
Investigate eating disorders
Develop a plan to prevent foodborne illnesses through the use of food safety and biotechnology
Explain how hunger affects people in the United States and globally
Analyze the effects of human hunger and behavior on public health within different cultures
Assess the human impact on the biosphere
Summarize conservation and restoration efforts with regards to food production

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 2, 8 & 10.

BIOL 2005 - General Biology I (4)

This course studies the organization of life with emphasis on cellular biology. Topics include chemistry, cytology, energy and metabolism, gene expression and regulation, inheritance, natural selection, and biotechnology. Comparison of eukaryotic, prokaryotic, and acellular structures and mechanisms are studied. The laboratory sessions reinforce concepts discussed in lecture as well as provide a strong foundation in scientific methods and statistical analyses. Fundamental laboratory skills such as safety, measurement, and instrumentation are emphasized. This course covers the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on math assessment test OR MATH1500 or MATH1650

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define the characteristics of life
Apply basic principles of inorganic, bio- and physical chemistry to biological processes
Explain the relationship among cellular structures and their functions
Describe the regulation of cell cycles and cellular division
Explain the flow of energy in prokaryotic and eukaryotic cellular processes
Describe the processes of genetic regulation, expression, and inheritance
Discuss the roles of biotechnology in society
Apply the scientific method in a laboratory setting
Demonstrate the appropriate use of laboratory equipment
Determine the appropriate method for collecting data

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2 & 3.

BIOL 2040 - Introduction to Forensic Science (3)

This course will familiarize students with the history and theory of forensic science and the function of crime laboratories. Students will explore ethical considerations and legal responsibilities of forensic scientists. They will apply the scientific method in observing, documenting, collecting, preserving, analyzing, and reporting evidence through case studies and hands-on biomedical lab activities. This course covers the characteristics of hazardous waste and the necessary safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on math assessment test OR MATH0950. Basic computer and Internet skills are strongly recommended.

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define forensic science and identify some of its sub-disciplines
Discuss the historic development of forensic science and its current role in crime scene investigations
Describe the process of the scientific method and its limitations
Describe the role and activities of crime laboratories
Explain the ethical and legal responsibilities of crime lab personnel
Identify the types of evidence that are typically analyzed in crime laboratories
Describe proper collection and preservation procedures of physical and biological evidence
Perform basic lab procedures used to characterize various type of biomedical, pattern, and impression evidence
Appropriately handle, store, and dispose of hazardous material
Discuss forensic case studies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MnTC Goal Areas: 2, 3, & 9.

BIOL 2045 - Human Biology (4)

This course is a survey of the general structures and functions of the human body using an organ systems approach. Areas of study include human organization, support and movement, integration and coordination, maintenance of the

body, body defenses, reproduction, and development. Each human organ system will be investigated to develop an understanding of its contribution to the normal functioning of the human body. Discussion of basic disease processes associated with each system, and current health and social issues will also be integrated.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on math assessment test OR MATH1050 or MATH1060

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the levels of biological organization
Identify key anatomical structures of the human body
Explain basic physiologic mechanisms associated with the human body
Investigate the relationship between structure and function
Relate physiologic processes to the maintenance of homeostasis
Apply concepts of anatomy and physiology to human health and disease
Recognize the effects of disease conditions on homeostasis
Evaluate data relating to human body structure and function
Describe steps to be taken for proper care of the human body and for prevention of disease
Interpret case studies
Demonstrate proper safety procedures in a laboratory setting
Explain the roles of carbohydrates, fats, proteins, vitamins and minerals in proper nutrition

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2 & 3.

BIOL 2105 - General Biology II (4)

This course is the second in a two semester general biology course. Topics will include evolution, biological diversity, botany, zoology and introductory concepts of ecology. The laboratory sessions will reinforce concepts discussed in lecture emphasizing anatomy and physiology of selected members of the plant and animal kingdoms. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: BIOL2005 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain how scientific methods are used to solve problems
Examine the six kingdom classification concept
Recognize evolution as the core theme of biology which accounts for both the unity and diversity of living things
Illustrate how organisms interact in an ecosystem
Explain the role of photosynthesis in living organisms
Relate the effects of environmental problems on ecological systems
Illustrate the life cycles of plants and animals
Demonstrate proper techniques of microscopy

Synthesize biological concepts
Synthesize biological experimental methods
Measure biological processes in a laboratory setting
Examine biological processes in a laboratory setting
Document experimental data in accordance with proper scientific technique
Interpret experimental data
Formulate hypotheses
Test hypotheses
Test experimental predictions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

BIOL 2125 - Anatomy and Physiology I (4)

This course is the first semester of a lecture and laboratory sequence in human anatomy and physiology. Human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Homeostasis is an integrating theme throughout this course. Topics include anatomic and directional terminology, cellular processes, tissue classification, and the integumentary, skeletal, muscular, and nervous systems. Clinical applications of anatomy and physiology are also introduced. The laboratory component of the course parallels and reinforces lecture concepts through the use of models, histological slides, dissection of animal specimens and exercises in physiology. This course is intended for anyone interested in gaining a better understanding of the structure and functioning of the human body.

Prerequisite: BIOL2005 with a grade equivalent of "C" or better OR BIOL2045 with a grade equivalent of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply descriptive anatomic and directional terminology
Describe the levels of biologic organization
Describe cellular organization, structure and function
Explain the dynamics of the structure and function of the cell membrane
Relate chemical activities of cells to the metabolic activities of the body
Identify microscopic and gross anatomy of selected tissues and organ systems
Describe the major gross and microscopic anatomic components of selected organ systems of the human body
Explain basic physiologic mechanisms of the body
Integrate the relationships between structure and function
Explain the basic concept of homeostasis and how homeostatic mechanisms apply to body systems
Describe the dynamics of the skeletal system
Explain the mechanisms of muscle contraction
Describe the functional relationships that exist among the components of the nervous system and select body systems
Apply concepts of human anatomy and physiology to human health and disease
Analyze experimental results
Demonstrate proper scientific methods, evaluative techniques and safety procedures in a laboratory setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2 & 3.

BIOL 2215 - Human Physiology (4)

This course is the second semester of a lecture and laboratory sequence in human anatomy and physiology. The course provides an in-depth study of the functioning of body systems, including the muscular, nervous, cardiovascular, immune, respiratory, digestive, urinary, endocrine, and reproductive systems. Emphasis is placed on systemic human physiology, which is augmented by discussions of cellular and molecular mechanisms. Applicable principles of chemistry and physics are reviewed in order to enhance understanding of physiological processes. The laboratory component of the course is designed to reinforce the topics discussed in lecture, as well as to introduce students to some of the laboratory techniques and equipment used in the acquisition of physiological data. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: BIOL2115 with a grade of "C" or better and qualifying score on math assessment test OR MATH1700

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Integrate the functional relationships among different organ systems to maintain homeostasis in the human body
Explain the coordination of physiological processes underlying homeostasis at the system and molecular level
Apply the principles of chemistry and physics influencing physiological mechanisms
Explain cell membrane dynamics, including transport, communication, and membrane potential
Describe molecular control of protein synthesis; cell metabolism and respiration; communication; and reproduction
Explain nervous system functions and regulation, including sensory, motor, and integrative neurophysiology
Classify hormones and their mechanisms of action in regulating cellular functions
Describe the dynamics of the skeletal system in maintaining homeostasis
Explain the mechanisms of muscle contraction at the different structural levels
Explain the mechanisms of the various components of the cardiovascular system
Differentiate innate immunity from adaptive immunity
Evaluate the processes of pulmonary ventilation
Distinguish between the respiratory and metabolic components of acid-base balance
Analyze the processes of urine formation, water, and electrolyte balance
Describe digestive system processes, phases, and control
Contrast male and female reproductive physiology and development
Solve medical case studies related to physiological concepts
Critique scientific journal articles
Measure physiological processes in a laboratory environment using various methods, instruments, and software
Apply the principles of instrumentation and calibration to obtain accurate measurements
Interpret instrument data and experiment results
Develop physiological research experiments based on scientific method
Synthesize scientific reports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

BIOL 2225 - Anatomy and Physiology II (4)

This course is the second semester of a lecture and laboratory sequence in human anatomy and physiology. Human anatomy and physiology are studied using a body systems approach, with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Homeostasis is an integrating theme throughout this course. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems, the immune response, fluid and electrolyte balance, metabolism, nutrition, and human development. Clinical applications of anatomy and physiology are also discussed. The laboratory component of the course parallels and reinforces lecture concepts through the use of models, histological slides, dissection of animal specimens and exercises in physiology. Some lab exercises will introduce students to the laboratory techniques and equipment used in the acquisition of physiological data. This course is intended for anyone interested in gaining a better understanding of the structure and functioning of the human body.

Prerequisite: BIOL2005 with a grade equivalent of "C" or better and BIOL2125 with a grade equivalent of "C" or better OR BIOL2045 with a grade equivalent of "C" or better AND BIOL2125 with a grade equivalent of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify microscopic and gross anatomy of selected tissues and organ systems
Describe the major gross and microscopic anatomic components of select organ systems of the human body
Describe the functional roles of various body systems especially in light of maintaining homeostasis
Integrate the relationships between structure and function
Describe the functional relationships that exist among the components of the endocrine system and select body systems
Explain the physiologic mechanisms of the components of the cardiovascular system
Demonstrate knowledge of the processes of the immune system
Describe the functional roles of the components of the respiratory system especially as they relate to pulmonary ventilation, and external and internal respiration
Describe digestive system processes, phases, and control
Describe the functional roles of the components of the urinary system
Explain the physiology of the homeostatic mechanisms that control fluid electrolyte and acid base balance
Distinguish variations between male and female anatomy
Contrast male and female reproductive physiology and development
Describe the stages of embryological development
Apply concepts of human anatomy and physiology to health and disease
Analyze experimental results
Demonstrate proper microbiological methods, evaluative techniques and safety procedures in a laboratory setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2 & 3.

BIOL 2235 - Microbiology (4)

This course investigates microorganisms with an emphasis on human health and disease. The course provides a study of prokaryotic, eukaryotic and acellular microbes. Topics covered include microbial taxonomy, morphology, growth, metabolism, genetics, etiology, resistance, host interactions, human immune response to infection, epidemiology, control, treatment, as well as their use in biotechnology. The laboratory component of the course is designed to reinforce the topics discussed in lecture, as well as to introduce students to some of the laboratory techniques and methods used in microbiology, including aseptic techniques and safe handling of microorganisms, culturing, staining, biochemical analyses, enumeration, identification of unknowns and microbial control. This course covers the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: BIOL2005 with a grade of "C" or better and BIOL2125 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the scope of microbial diversity
Integrate principles of chemistry and cell biology to the processes of microbiology
Describe the major groups of microorganisms according to current taxonomic schemes
Contrast morphology, growth, metabolism and genetics of prokaryotic and eukaryotic microbes
Compare the cellular processes of prokaryotic and eukaryotic microbes
Distinguish among eukaryotic microbes, including fungi, algae, protozoa and multicellular parasites
Describe the characteristics of viruses and prions
Describe the pathogenesis of infectious diseases of humans with respect to etiologies, mechanisms of transmission, diagnoses and treatments
Explain the significance of biofilms in clinical medicine
Describe the complex interactions that exist between microbes and host organisms
Describe human immune response to microbial infections
Analyze the effectiveness of various methods of microbial control, including factors that must be considered in their selection and use
Explain microbial adaptation, resistance and evolution
Describe epidemiological tools used for the study, intervention and prevention of disease in society
Review the contribution of microbial genetics to science and biotechnology
Apply microbiological concepts to current issues
Solve case studies related to microbiology
Demonstrate proper microbiological methods, evaluative techniques and safety procedures in a laboratory setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 2 & 3.

BUSN - Business

BUSN 1000 - Introduction to Business (3)

This is a college level introductory course in business practices. The course is an overview of the role of business in the American economy and the international community. The course will cover the free enterprise system used in America. The student will look at issues of business and society; as well as, legal, regulatory, and political responsibilities on the part of American business. A short overview of Marketing will also be covered as a part of the course.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the role of economics in the American business environment
Describe the steps to implementing a program of social responsibility
Explain the economic basis for global business
List the advantages and disadvantages of small business ownership
Identify the key skills of effective managers
Describe how purchasing, inventory control and quality control affect production
Describe the major components of human resources management
Explain the elements of the Marketing Mix
Describe the relationship between financial systems and business organizations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1020 - Introduction to Selling (3)

This course covers the role of sales in the economy, the importance of a positive sales attitude, the basic steps of a sale, and how the salesperson is viewed as a representative of a company. The student will be required to conduct a sales presentation to a buyer of a product.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify customers
Prepare sales objective
Prepare sales presentation strategy
Demonstrate interpersonal skills
Identify customers` needs/wants/motives
Assess customers` needs/wants/motives
Apply questioning and listening skills
Answer question objections
Present product/service features/advantages/benefits(fab)
Apply closing techniques
Prepare sales forms

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

BUSN 1025 - Introduction to Esports Business (3)

Professional gaming, known as esports, is one of the fastest growing global industries. In this course, we will explore all elements of the esports ecosystem including publishers and games, platforms, players and teams, tournament and league organizers, and brands and advertisers to understand how the industry operates. We will also investigate job and career opportunities in this dynamic industry.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the elements of the esports ecosystem
Analyze the business models of the key companies in the esports industry
Describe the most important publishers and games in esports
Identify the most important teams and leagues in esports
Describe how esports leagues are managed
Identify the key technical challenges faced by esports companies
Describe the process for managing an esports tournament
Identify key trends in esports
Analyze career opportunities in esports
Describe branding and marketing opportunities in esports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

BUSN 1030 - Professional Development (3)

Professional image and `self-management` are the focus of this course. Professional appearance, wellness, time management, goal setting and techniques for the professional`s response to various social settings will be addressed in this course.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe professional self image
Apply social business behavior
Explain personal wellness
Prepare a personal wellness plan
Examine professional dress standards
Prepare a professional dress plan
Prepare a self improvement plan
Apply goal setting techniques
Apply time management techniques
Examine business etiquette techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1041 - Customer Relationship Management (CRM) (3)

In this course, students will experience practical strategies for integrating information and technologies in order to get results. Customer Relationship Management (CRM) involves data-driven solutions that improve how salespeople do business with customers. CRM systems and applications are designed to manage and maintain customer relationships, track engagements and sales, and deliver actionable data.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess sales data in case study scenarios
Analyze territory sales goals
Forecast sales
Use sales business ratios to make sales account decisions
Create a sales prospecting plan
Apply sales account management skills
Analyze sales reports
Identify strategies for communicating sales activities
Identify CRM software applications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1060 - Territory/Account Management (3)

This course covers identifying prospects, management of time in relation to territory assignments, management of territory for profit, how to schedule activities, develop sales strategies and maintain account records. The concepts will be learned through case studies or a live territory project.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Calculate territory market needs
Identify territory accounts
Rank territory accounts
Develop territory lead list
Develop a territory routing plan
Develop territorial quotas
Plan territory sales expenses
Map territory accounts
Prepare territory call/sales/work reports
Analyze territory trends
Describe territory competition
Apply time management techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1091 - Consultative Selling (3)

In Consultative Selling students will learn to build relationships with business partners. Consultants ask questions to assess client needs, then utilize critical thinking to identify business problems and provide solutions. In this class, students will apply business knowledge as they determine ways that client businesses could run more effectively or profitably for improved results. These solutions typically involve the sales consultant's products and services.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Establish the relationship between the salesperson and client
Identify the salesperson as a problem-solver
Identify behaviors indicating no trust
Apply empathy skills
Describe the signs of no need
Apply questioning strategies
Describe the solution-advantage-benefit (sab) of the product/service
Apply closure strategies
Apply customer support strategies after the sale

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1100 - Supervision (3)

The focus of this course is on the first-line manager who coordinates and supervises the activities of the operating employees in any company. The course will emphasize effective ways to lead, motivate, delegate, communicate and measure the performance of employees who perform the day-to-day activities of the organization.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Understand the supervisor`s role in the organization
Assess the supervisor`s role in change and innovation
Discuss trends in supervision
Identify processes used in organizing a department
Apply goal setting principles
Apply decision making and problem solving principles in supervision
Describe the fundamental concepts of leadership
Describe the fundamental concepts of motivation
Identify methods used in supervising groups and teams
Assess effective methods in communication to subordinates
Understand organizational politics
Explain how to acquire the right people
Explain disciplinary processes used in supervision
Apply measurement standards for department and individual performance
Understand labor relations
Apply conflict management techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1140 - Business Law (3)

This course is an introduction to the principles of law as they apply to businesses. Topics covered include the court system, contracts, purchases and sales under the UCC, commercial paper, employment law and business organizations and regulation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the functions of law
Outline the structure of the court system in the United States
Defend the need to set up a system of uniform state laws
Compare and contrast the varieties of negligence and assumption of risk
Explain elements of a variety of contracts
Describe various types of consideration
Describe illegal agreement types
Describe third party contract involvement
Define product liability and warranties
Describe rights and duties of parties to negotiable instruments

Describe rights and duties of principals/agents
Describe rights, duties, powers and liabilities of corporations and their owners
Distinguish between real and personal property
Explain rights and duties of the parties to a bailment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1150 - Introduction to Service and Work Team Strategies (3)

Our society is increasingly becoming less customer service oriented. Therefore it follows that there is a growing need for the development of customer service skills. This course describes what customer service is and how it impacts profitability and productivity of most businesses. The course addresses the challenges in the delivery of customer service, strategies used in customer service and the personal skills necessary to achieve value added experiences for the customer. Teamwork is an essential part of the workplace today and will increase in the future. This course will improve student's understanding of both theory and practical application of skills used in teams. Students will participate in teams, completing team projects and analyzing team interaction. Emphasis will be on team formation and development, effective leadership, decision-making in teams, active participation, conflict resolution, planning and conducting meetings.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930 and Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define customer service in the twenty-first century
Discuss customer service strategies
Design a customer service system
Discuss strategies to retain customers
Develop a business philosophy of customer service
Implement solutions to customer service problems
Apply forming techniques to team structure
Identify the roles of the team members and team leader
Develop and implement a team meeting agenda
Develop listening and questioning skills
Develop feedback skills
Apply decision-making and problem solving skills
Apply conflict management skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1200 - Managerial Communication (3)

It is essential that a manager in any organization understand how that organization communicates. This course is designed to improve the student`s understanding of a manager's place within the organization and to provide an awareness of effective communication skills needed within an organization. The course will include a discussion of new organizational communication processes, status and power within an organization, sources of conflict within an organization and common communication methods used by managers within the organization.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Understand the concept of communication within the organization
Discuss traditional views of status and power within the organization
Apply conflict management techniques
Discuss cultural control, diversity and change
Apply techniques of running effective meetings
Apply facilitation techniques
Apply principles of effective presentations to groups
Apply basic principles of negotiation
Apply principles of crisis communication
Apply principles of external communication
Apply concepts of leader-member relationships

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1300 - E-Business (3)

This course will teach students how to build a successful e-business. It will take the student through the entire process from strategic planning to actual fulfillment. It will provide the technical, operational and managerial details necessary for success.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT0900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define e-business in the twenty-first century
Discuss the challenges of starting an e-business
Review of the history and uses of the Internet
Discuss Internet architecture
Discuss features of Intranets and Extranets
Identify Web management tools and portals
Define critical success factors that favor the use of emerging technology
Design a customer-merchant interface model
Apply strategies of web site design and managing Web traffic
Define skills and techniques unique to e-marketing
Define B2B models
Discuss ethical, legal and international issues related to e-commerce
Define critical components of e-security
Discuss the concept of e-payments
Identify the procedures for launching a new e-business

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1400 - Business Finance (3)

This course is designed to provide students with the tools, understanding, and processes enabling them to calculate essential Business statistics. These tools will give them and their employer a better understanding of financial and business transactions into which they are about to enter. The analysis of the resulting statistics and improved understanding of financial documents will allow the student to assist the business in improving their decision making process.

Prerequisite: CCIS1080

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize financial statements in corporate data analysis
Utilize terminology to read financial documents
Formulate decisions based on financial calculations
Demonstrate understanding of corporate income statements
Formulate results from calculations for decision making
Utilize calculation tools
Utilize spreadsheets to perform calculations
Extrapolate data for business analysis
Distinguish between types and degrees of risk

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1500 - Database Concepts and Data Analysis Tools (3)

This course is designed to give the student knowledge about database concepts and tools which can be used in business analysis. Students will implement the features in MS Access using case studies that introduce realistic business problems and are focused on business decisions using queried database information.

Prerequisite: CCIS1080

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define a relational database
Identify table structure, data inputs, data outputs, and relationships
Develop forms and reports
Demonstrate importing and exporting database records and objects
Formulate queries
Utilize calculation tools
Utilize SQL
Extrapolate data for business analysis
Demonstrate printing capabilities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1510 - Entrepreneurship (3)

Students will learn the process of creating and developing a business venture. The course will cover four phases of

new venture development, (1) opportunity identification, (2) feasibility analysis, (3) execution strategy and business plan development, and (4) growth, change and harvest strategies. The focus will be on the planning, financing, and managing of a selected venture. In addition to learning the process, students will select an idea for a new venture and create a business plan.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the challenges and rewards of entrepreneurship
Generate ideas for new ventures
Analyze the feasibility of new venture ideas
Develop a business plan
Define the significance of entrepreneurship
Develop alternative business models for new venture ideas
Define entrepreneurial ethics
Describe the major requirements of starting a business in Minnesota
List the typical characteristics of entrepreneurship
Describe debt and equity financing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply computer skills in a business setting
Apply presentation and writing skills to assigned business projects
Analyze business information
Demonstrate knowledge of business problem solving and critical thinking

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1-4

BUSN 2000 - Business Analysis (4)

This is a college level introductory course in business analysis. This course will detail the roles and responsibilities of the Business Analyst. The course will teach techniques to define the scope of work which includes: identify requirements-gathering techniques, identify the unique needs of stakeholders, customers and the I/T department in the business analysis process among the many facets of the business analyst's responsibilities.

Prerequisite: CCIS2055

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define the roles and responsibilities of a business analyst
Define team roles and work division strategy
Build a business case
Evaluate a business case
Plan requirements for a project
Manage requirements for a project
Conduct effective interviews and questionnaires with stakeholders
Identify business rules
Document business rules
Acquire agreement from stakeholders on the business case
Determine causes of problems using causal analysis
Identify the stakeholders of a business process
Choose elicitation techniques for questioning stakeholders
Implement techniques for gathering information about a business process
Develop appropriate business requirements models and documents for business owner and stakeholders
Present business requirements to business owner and stakeholders using visual diagrams/models

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

BUSN 2005 - Marketing Concepts and Strategies (4)

An overview of basic marketing principles and practices, this course includes discussion of the marketing mix, the four `p's` of marketing, buyer behavior, target markets, and electronic marketing concepts. Concepts will be learned through case studies and the creation of a marketing plan for a hypothetical company.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe strategic marketing
Describe the marketing environment
Apply marketing research to marketing plan
Identify consumer buying behavior
Analyze market segments
Evaluate markets
Explain the role of product in the marketing mix
Analyze marketing channels to distribute products
Demonstrate the role of advertising and publicity in the marketing mix
Identify the role of pricing concepts in the marketing mix
Explain the role of personal selling and sales promotion in the marketing mix
Create a marketing plan for a product or service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

BUSN 2010 - Requirements Management with Use Cases (3)

This is a college level course in developing and documenting project requirements. This course will teach the Business Analyst a logical methodology for the requirements process through practice developing effective requirements. The course will teach and reinforce techniques to identify relevant stakeholders, elicit and document business requirements, and develop use cases describing the business system within which they are working.

Prerequisite: BUSN2000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop effective business objectives
Identify all relevant stakeholders in the project
Elicit business requirements
Document business requirements

Elicit end-user process requirements
Capture end-user process requirements
Recognize business rules
Document business rules
Capture non-functional requirements
Write non-functional requirements
Translate the business/user requirements into system requirements
Write effective requirements specifications
Create effective use cases for stakeholder understanding

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2015 - Marketing Applications (3)

Marketing involves all of the activities that help businesses reach their target market(s) effectively including public relations, sales promotion, advertising, social media, pricing, distribution and many other functions. In this course, students will gain practical experience in applying these activities through projects and case studies related to the development of a marketing plan. In addition, students will experience the importance of aligning their marketing objectives with the strategic goals of a business organization.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the strategic business goals of a business organization
Develop marketing objectives for a product or service aligned with the goals of a business organization
Apply the four primary functions of a Marketing Strategy
Apply effective tactics for target market selection, segmentation and positioning
Present an advertising campaign as part of a marketing strategy
Present a social media campaign as part of a marketing strategy
Present a sales promotion plan as part of a marketing strategy
Develop a pricing and distribution plan as part of a marketing strategy
Create a sales strategy for a business organization as part of a marketing strategy

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2040 - Introduction to Event Planning (3)

A career in event planning covers a broad array of industries and types of meeting including corporate meetings, trade shows and expos, weddings, sporting events, fundraising and concerts. In this course, students will learn about the man career opportunities in this field, and the basic skills required for an event planner. The course provides an introduction to client relationships, industry partnerships and the planning process that will drive success!

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify meeting planning process basics
Describe the opportunities in the event planning industry
Recognize aspects of corporate events, special events and public events
Apply financial management to meeting and events
Identify the importance of client/vendor relations
Describe effective networking for the meeting and events industry
Identify event marketing and promotion strategies
Describe aspects of non-profit and fundraising events
Identify meeting planning logistics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2050 - Event Site Sourcing and Contracts (3)

In planning a business event, one of the first steps is deciding how, when and where attendees will gather. Convention or conference centers, hotels, etc. can offer a myriad of services with varying pricing and conditions. Sourcing these locations can be a complex task. In this class, students will learn to develop a "request for proposal" (RFP) where your needs and specifications are clearly spelled-out to potential venues. Learning to evaluate and compare these responses and negotiate a contract requires skill, confidence and know-how.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course.The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize the various decisions involved in meeting site selection
Identify event details, event spaces and event conditions
Describe the process for developing a Request for Proposal (RFP)
Identify industry technology applications for RFP development
Identify how to evaluate/compare/select from RFP responses
Describe event contract terms
Recognize contract negotiation strategies, attrition and termination clauses
Recognize contract risk and liability
Apply communication strategies with team members and partners

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2055 - Principles of Management (4)

This course is an introduction into the exciting world of management. Today`s managers are faced with many difficult and exciting challenges. Therefore, this lecture course covers the latest trends in management thinking that is essential to successfully guide large, small, profit and nonprofit, organizations toward their goals.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the challenges facing the twenty-first century manager
Identify the elements of planning
Discuss strategic management techniques
Apply decision-making and creative problem solving strategies
Identify elements of organizing
Describe human resource management concepts
Compare various approaches to motivation
Identify group dynamics and teamwork
Analyze leadership components
Identify control and quality processes
Identify diversity issues in management
Describe ethical practices in management

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

BUSN 2075 - Digital Marketing (3)

Internet technologies have revolutionized the practice of marketing. Digital marketing has become an essential component of any firm's marketing strategy. This course will provide a foundation in the key concepts around this rapidly changing field, including internet marketing strategies, search engine optimization, inbound marketing, email marketing, social media campaigns, mobile apps, content strategy, paid search advertising, and web analytics. We will also work to establish the practice of keeping up to date on emerging digital technologies relevant to business and to marketing.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe potential future trends in digital marketing
Identify the marketing impact of changes in the digital landscape
Explain how digital marketing strategies fit with company's overall marketing strategy
Create a comprehensive digital marketing strategy and plan
Describe the major tools of digital marketing
Demonstrate the use of social media to stimulate traffic, engagement and brand awareness
Demonstrate the use of search engine marketing (SEM)
Measure the effectiveness of digital marketing efforts using analytics tools
Generate the Google Analytics Individual Qualification certificate

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2085 - Small Business Operations (4)

The Small Business Operations course is designed for students interested in learning how to manage a small business. The course focuses on operating a small business in today's dynamic business environment, and covers such topics as risk taking and entrepreneurship, forms of ownership, planning, organizing and managing, marketing, financing, human resources management, governmental regulation and taxation, franchising, starting or buying a

small business, and other relevant subject areas.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare the various approaches to starting a small business
Describe the advantages and disadvantages of the various legal structures of a small business
Describe the opportunities for small business as global enterprises
Develop small business marketing strategies to create value for customers
Develop competitive strategies for capturing business opportunities
Discuss the elements of the operating system in small business, and the role of quality in operations management
Identify strategies for human resources management in small business
Describe the risk management process to be followed in small businesses
Identify the basic requirements for a small business accounting system
Analyze the financial needs of a small business
Identify appropriate sources of funds for financing short and long term business needs
Explain the options for harvesting or closing the small business, and the related importance and outcomes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

BUSN 2100 - Capstone (3)

This is a `capstone` experience usually taken during the last semester where business students will be required to work in teams using acquired technical skills to handle a business case study or to complete a business study project. Industry may be asked to review the work and evaluate work completed.

Prerequisite: BUSN1000, BUSN1051, BUSN1140, BUSN1200, BUSN1300, CCIS2801, and CCIS2900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently and as part of a team
Organize work schedule
Follow prescribed procedures
Demonstrate initiative
Demonstrate cooperation
Integrate previously acquired skills
Integrate previously acquired knowledge
Use critical thinking and problem solving skills
Demonstrate a positive attitude
Display good judgement
Demonstrate dependability

Exhibit professionalism

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

BUSN 2170 - Supervised Occupational Experience (4)

This course is designed to provide the student with a purposeful occupational experience in the field of selling business to business. Since each supervised occupational experience is an individualized experience, a training plan is created specifically for each student in conjunction with the training site the student will be working. The supervised occupational experience can be offered as a cooperative arrangement, an internship arrangement, or other appropriate work experience arrangement.

Prerequisite: Completion of at least 16 Business credits with a grade of "C" or better in each course or an arrangement with instructor

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently
Plan work schedule
Follow prescribed procedures
Demonstrate initiative
Apply previously acquired skills
Apply previously acquired knowledge
Apply good judgment
Demonstrate dependability
Demonstrate professional business etiquette
Apply critical thinking and problem solving skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

CARP - Carpentry

CARP 1101 - Introduction to Residential Construction (2)

This course is designed to introduce students to basic construction procedures and operations used to construct a residence. Emphasis will be placed on construction principle of measurement, layout and power tool operation and safety along with OSHA 10 compliance.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Implement measurement techniques
Manipulate measurement devices
Demonstrate safety and operation procedures for stationary and portable power tools
Execute proper and safe operational procedures for stationary and portable power tools
Identify hand tools
Manipulate hand tools
Identify residential framing components
Execute wall framing layout procedures
Demonstrate knowledge of various construction methods
Identify the basic practices required by "OSHA 10"
Demonstrate safe work habits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CARP 1111 - Floor and Wall Framing (5)

This course covers floor and wall framing. It is designed to introduce students to framing materials used to build floors and walls and a working knowledge of layout and framing practices. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe use of tools

Translate blueprints
Practice proper tool maintenance
Identify floor framing techniques
Construct floor framing system
Complete stairway openings
Determine wall openings
Apply floor sheathing
Classify exterior wall framing methods
Layout exterior plates
Practice exterior wall framing
Determine wall framing methods
Construct interior walls
Align walls

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 4

CARP 1130 - Additions and Retrofit (2)

This course introduces the student to construction processes used to attach and/or modify rooms, porches and garages. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret blueprints
Identify materials on the existing structure
Assess existing framing conditions
Assess existing exterior conditions
Evaluate plumbing/electrical/heating involvement
Estimate materials required
Examine demolition methods
Apply floor/wall framing techniques
Apply roof framing techniques
Employ exterior finish techniques
Examine methods of connecting to existing structures
Practice safe work habits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 2

CARP 1140 - Engineered Roof Systems (2)

This course will introduce the student to some of the engineer designed products used to support the roof on a house. Students will then use this information to build one or more roofs.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify roof truss design
Practice handling and storage of roof truss
Determine installation requirements
Demonstrate proper bracing
Analyze sheathing application
Practice safe construction techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CARP 1150 - Rafter Framing (3)

This course is designed to provide the opportunity for students to layout, cut and install rafters. Projects may include a full scale roof, a shed roof, Cape Cod dormers and snub gables.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Distinguish roof terminology and components

Read roof framing plan
Calculate rafter lengths
Layout rafters
Identify uses of a dormer
Determine dormer framing methods
Layout dormer rafters
Install rafters

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CARP 1180 - Stair Framing (2)

This course introduces the student to the layout, cutting, and installation of stairs.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define stair terminology
Identify code requirements
Calculate rise, run, and drop
Determine well opening dimensions
Layout stair stringer
Cut stair stringers
Install stair stringers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CARP 1185 - Stair Layout (1)

This is an advanced course for students working in the carpentry trade wanting to upgrade their skills in the theory of stair layout, cutting and installation of stringers and landings.

Prerequisite: One year minimum work experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the code requirements for various types of stairways
Incorporate stair terminology
Apply mathematics to determine stair layout
Lay out various types of stair stringers
Construct various stairways

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CARP 1190 - Deck Construction (1)

This course is an introduction to deck building for the carpentry student or homeowner. This course will touch on design/code requirements. The student will install footings, frame the floor, install decking, install railings and stairs as needed. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore deck building materials
Install footings
Construct posts, beams, and ledgers
Install decking, handrails, and guardrails
Calculate stairs
Interpret building code requirements
Demonstrate blueprint reading skills
Exhibit safe work habits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1

CARP 1240 - Exterior Finishes (4)

This course will introduce students to various types of exterior finishing techniques. Students will obtain knowledge of different types of roofing, siding and cornice products. An emphasis will be placed on expediting the installation techniques for each facet of exterior finishes.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Investigate various roof covering products
Estimate material requirements
Compare fastening methods
Determine the roof surface integrity
Identify flashing requirements
Apply roof covering
Identify siding materials
Demonstrate use of various siding tools
Practice cutting techniques
Describe siding techniques
Install siding products
Apply air barrier
Identify cornice materials and styles
Analyze detail drawings
Install soffit and fascia
Practice safe construction techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CARP 1420 - Concrete Stairs, Walks and Drives (1)

This course introduces the student to procedures used to form, pour and finish concrete stairs, walks and driveways.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Verify blueprint and code requirements
Construct stair forms
Construct sidewalk and driveway forms
Place concrete
Practice concrete finishing methods
Estimate material quantities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1

CARP 1430 - Install Concrete Slabs (1)

This course introduces the student to the procedures used to form, pour and finish concrete slabs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Verify blueprint and code requirements
Construct slab forms
Place concrete
Practice concrete finishing methods
Estimate material quantities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1

CARP 1511 - Insulation and Drywall (3)

This course introduces the student to the properties of insulation and gypsum wallboard and proper installation of both.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the requirements of the state energy code
Examine R values and insulation techniques
Determine ventilation requirements
Install wall and ceiling insulation
Explore gypsum board products
Exercise wall moisture intrusion control methods
Differentiate gypsum board installation techniques
Ascertain scaffolding requirements
Install gypsum board products

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CARP 1710 - Stair Finishing (2)

This course will introduce the students to the fundamentals of finishing an open and closed stair. It will include the application of treads, risers and railing parts.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify code requirements
Install finish stair parts
Mount wall hand rail
Compare newel post anchoring options

Construct open handrail system
Classify manufactured stair parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CARP 1720 - Interior Trim (4)

This course introduces the student to interior trim. It will include the installation of jamb sets, pre-hung doors, door and window casing, moldings and hardware.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify interior trim materials
Estimate material quantities
Contrast nailing methods
Identify nailing patterns
Identify cutting methods
Apply cutting methods
Practice fitting methods
Install doors
Install moldings
Install hardware
Identify closet systems
Install closet systems
Exhibit safe work habits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CARP 1760 - Cabinet Making (3)

This course introduces the student to the elements of cabinet construction such as drawing, cutting and assembly of cabinet body parts, doors, drawing and plastic laminate tops.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify standard cabinet components
Explore various cabinetmaking materials
Identify standard cabinet sizes
Produceworking drawings
Estimate materials
Produce cut list
Operate cabinet making tools
Produce cabinet components
Assemble cabinet components
Determine joining techniques
Use various scribing techniques
Install cabinets and components
Identify cabinet hardware
Install cabinet hardware
Apply machine/shop safety procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CARP 1810 - Residential Blueprint Reading (1)

This course introduces the student to the fundamentals of blueprints and the reading of residential blueprints through the use of a standard workbook and construction blueprints.

Prerequisite: Qualifying score on reading assessment test OR Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret blueprint terminology
Distinguish construction dimensioning techniques

Translate blueprints
Determine construction specifications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CARP 1820 - Residential Estimating (2)

This course introduces the student to estimating materials for rough framing and interior and exterior finishing.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Estimate concrete materials
Calculate concrete labor costs
Compute rough framing materials
Approximate rough framing labor
Estimate exterior finish materials
Calculate exterior finish labor
Compute interior finish materials
Estimate interior finish labor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CARP 1830 - Building Code (1)

This course is a study of the parts of the State Building Code that relate to residential construction.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe administration functions
Interpret building construction codes
Clarify energy conservation codes
Examine stair construction codes
Examine building finish codes
Interpret mechanical systems requirements
Discuss local ordinances

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CARP 1840 - Energy Efficient Construction (1)

This course is a study of the State Energy Code and construction methods and strategies used to build energy efficient houses.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the need to build energy efficient homes
Determine ventilation requirements
Compare methods to build energy efficient homes
Examine testing methods of energy efficient homes
Investigate retrofit strategies
Manipulate energy assessment software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CARP 1850 - Introduction to Computer Assisted Drawing (1)

This course will introduce students to a computer program for drawing blueprints. After completing the program, students will be able to draw and dimension a blueprint, insert windows and doors and other components.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify software components
Manipulate software to draw and dimension exterior walls
Manipulate software to draw and dimension interior walls
Compare scale
Select and place windows and doors inplan
Modify window and door openings
Select and place cabinets in drawing
Select and place various fixtures in the plan
Create various plans views
Operate various modes
Create a DX file

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1

CARP 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exercise professionalism
Demonstrate initiative
Integrate previously acquired skills and knowledge
Follow procedures
Apply systematic concepts to lab specific circumstances
Combine cutting, measuring and installation procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

CARP 2000 - Green Building Concepts (3)

This course covers the integration of green building technologies into conventional residential construction practices. Principles and practices to reduce negative environmental effects on regional and global scales while improving building performance, health and comfort of the occupants will be explained.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the principles that influence building performance
Identify sustainable/green building terminology
Recognize sustainable/green building practices
Recognize the requirements of green buildings
Compare building science principles and practices to mainstream residential construction practices
Apply building science principles and practices to mainstream residential construction practices
Explain how to select air, moisture, and thermal barriers
Explain how to select high performance windows and doors
Recognize reasons for testing structures for air leakage and thermal bypasses
Interpret pertinent residential green building program requirements
Discuss the details involved in energy efficient construction and techniques used in constructing a high-performance house

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CARP 2005 - Green Building Materials (2)

This course is a survey of alternative building materials, products, and methods of construction, with an emphasis on the efficient use of materials and energy. This course also incorporates the environmentally responsive use of materials and building practices in green building technology.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize building materials and how they integrate with each other
Select building materials appropriate for the construction of green/sustainable home
Integrate optimal value engineering techniques and strategies into the construction of a green/sustainable house
Establish appropriate locations for the installation of air, moisture, and thermal barriers
Choose a range of materials that are appropriate for use in various aspects of a green/sustainable house
Identify engineered components that are appropriate for use in various aspects of a green/sustainable house
Select resource-efficient materials, systems, and technologies which have minimum impact on the health of our environment and ourselves
Select materials, systems, and technologies that enhance the quality of the indoor environment with fresh air, ventilation, nontoxic materials, and filtration

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CARP 2010 - The House as an Integrated System (4)

This course will introduce the student to building-science principles and how a building works as a system. This course also identifies the relationship between a building, it's various mechanical systems and the environment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize interface issues of various products and systems
Identify building strategies and components that constitute a sustainable/green built environment
Recognize how components of the environment affect building performance
Identify the basic components of building mechanical /plumbing systems
Research the relationships between the building and its various mechanical systems
Examine how weather affects the performance of various insulations
Apply building science principles and practices to mainstream residential construction
Explain the whole building-design concept
Identify climate zones
Discuss climate-appropriate design and construction details
Describe how a building works as a system
Describe the fundamentals of heat, air, and moisture flow with regard to the building enclosure
Select appropriate energy efficient HVAC systems, lighting, and appliances for a green-built house

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

CARP 2015 - Weatherization of New and Existing Homes (3)

This course will cover improving the energy efficiency and the health, comfort and safety of the occupants of new and existing buildings. The emphasis will be on cost effective weatherization strategies and techniques. This course includes an introduction to energy audits and diagnostics.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize the need to conserve energy
Define the principles of energy
Examine home energy usage
Analyzethe relationship between energy and the building shell
Identify construction flaws affecting energy usage
Recognize air sealing methods and materials
Demonstrate finding air leaks
Apply air sealing methods and materials
Identify health/safety issues related to the indoor environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CARP 2020 - Introduction to Home Rating Systems (2)

This course is an introduction to the various home rating systems, including LEED, MN Green Star and Energy Star. Their history, function in today's building climate, differences and commonalities will also be addressed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the various home rating systems
Discuss techniques and strategies for a project
Develop a list of potential credits for a project
Prepare construction documents for a preconstruction meeting
Complete a home rating system checklist

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CARP 2025 - Carpentry Internship (1 - 3)

This course will provide the student with 40 hours per credit of on-the-job training in the building industry. The student will use the knowledge gained in previous courses, and further develop their skills by working in the residential building industry.

Prerequisite: CARP1511

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate professional attitude
Demonstrate dependable workplace behavior
Demonstrate proper care and use of tools

Demonstrate good communication skills
Demonstrate good time management skills
Use safe industry standards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: OJT: 1-3

CBTG - Cabinetmaking and Wood Product Design

CBTG 1000 - Wood in Art (1)

In this course the student will design and construct various pieces of art using wood as the medium. Attention will be given to the theme through the use of color, texture, form, and balance. Students will be guided in the safe use of basic woodworking equipment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design artwork
Determine appropriate materials for artwork design
Construct artwork project
Exhibit shop safety

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1

CBTG 1100 - Introduction to Woodworking Technology (2)

In this course, students will be introduced to skills for blueprint reading, power tool operation, and safety. This course will also receive hands-on experience with different techniques for machining, assembling and finishing wood components.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret product blueprints and documents
Manipulate product blueprints and documents
Create stock bills and sheet optimization for wood components
Manipulate woodworking equipment safely
Execute machining techniques for wood product component parts to specific tolerances
Demonstrate proper wood product assembly procedures
Demonstrate proper wood product finishing techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 1110 - Joinery (2)

This course is designed to introduce the student to the safe and proper use of hand and layout tools used to construct basic woodworking joinery. Course emphasis will be the hands-on techniques necessary to produce several required wood joints.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct woodworking joints
Implement measurement techniques
Execute layout techniques
Conduct hand tool maintenance
Identify hand tools
Identify woodworking joinery

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 1121 - Power Tool Operation (5)

This course is designed to introduce the student to the proper and safe operation and maintenance of the basic woodworking power tools and stationary equipment used in the cabinet industry. One or more required projects will be fabricated by the student during the hands-on operation of the tools and equipment covered during this course.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze stationary power tools
Analyze portable power tools
Manipulate measurement devices
Analyze tooling for woodworking equipment
Execute proper techniques for installing machine tooling
Discuss safety procedures for woodworking equipment
Execute proper machine setups safely
Maintain woodworking equipment
Execute proper machining techniques for solid wood material
Execute proper machining techniques for plywood material
Apply machining techniques for woodworking joinery
Execute layout processes for wood products
Calculate and machine wood product component parts
Execute proper sanding procedures for wood finishing tools
Execute proper product assembly procedures with fastening tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

CBTG 1130 - Materials (1)

In this course the student will learn the various wood and wood products used in cabinetmaking. Solid lumbers, plywoods, veneers, melamines, laminates, abrasives, adhesives and fasteners will be covered and discussed. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine wood properties
Examine hardwood lumber
Examine plywood materials
Identify lumber species

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

CBTG 1141 - Basic Case Construction (4)

This course covers the fundamentals of cabinet construction, including project layout, stockbilling and material selection. Basic construction techniques will be covered and demonstrated. Cabinet projects for the student are required to achieve the hands-on experience appropriate to the course.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze cabinet construction joinery
Analyze cabinet layout and stockbilling
Analyze cabinet construction techniques
Prepare layout rods
Prepare component stock bills
Prepare sheet stock layouts
Conduct cutting operations for cabinet components
Machine cabinet joinery
Execute cabinet assembly techniques
Conduct cabinet finishing operations
Complete cabinet hardware installation operations
Identify cabinet terminology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

CBTG 1161 - Basic Laminating (2)

This course will introduce the student to the various types of plastic laminates available, other materials involved, hand tools, adhesives, preparation procedures necessary for the fabrication and practical application of decorative laminates. Required projects specializing in laminate constructions are emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify laminate components
Apply laminating machining techniques
Analyze adhesives
Complete laminating procedures
Identify laminate tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 1170 - AutoCAD (4)

This course will introduce the student to basic AutoCAD techniques used in creating geometric shapes. Software orientation, basic commands, geometry creation, dimensioning, text, display and plotting will be covered.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Identify AutoCAD's user interface
Identify file management procedures
Identify view commands
Identify geometry commands
Identify modify commands
Identify layers
Identify properties
Create basic geometric drawings
Identify text commands
Create block libraries
Create AutoCAD templates
Create cabinet drawings
Identify model and paper space components
Perform plotting procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 4

CBTG 1211 - Laminated Product Fabrication (4)

This course is designed to increase the students laminating abilities. The student will construct kitchen countertops, bathroom vanity tops and laminate casework projects. Installation of the countertops and casework are part of the course.

Prerequisite: CBTG1121 and CBTG1161

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze countertop construction
Organize countertop stock bill
Analyze laminate fabrication techniques
Complete countertop construction
Analyze countertop installation techniques
Conduct laminate countertop installation
Determine laminate casework production sequence
Conduct laminate casework fabrication
Analyze postforming techniques
Construct postformed project
Estimate cost of laminate project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

CBTG 1220 - Blueprint Reading and Shop Drawings (3)

This course teaches the fundamentals of reading blueprints and shop drawings related to the cabinetmaking industry. The students learn to retrieve information off these drawing to develop project estimates, cut lists, and production sequences.

Prerequisite: CBTG1141

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify line types
Identify scales
Identify drawing types
Analyze drawing dimensions
Read shop drawings
Create material take offs
Analyze drawing specification sheets
Prepare stock optimization sheets
Determine hardware needs
Discuss labor rate factors
Analyze AWI Quality standards
Create shop drawings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CBTG 1230 - Wood Finishing (2)

This course is designed to give the student a basic understanding of wood finishing materials and finish application methods. Spray equipment is utilized as the final finish is applied to wood and wood products. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: CBTG1121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze types of stains
Apply stains
Analyze film finishes
Apply film finishes
Analyze spray equipment
Operate spray equipment
Troubleshoot finishes
Practice finish touch up repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 1240 - Millroom Operations (2)

This course will acquaint the student with millroom operations. Areas of study will include molding design, knife-grinding procedures, molder set-ups, and molder operations.

Prerequisite: CBTG1121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze molding design
Examine cutter head technology
Create molding template
Examine knife grinding procedures
Complete knife grinding operations
Analyze molder set ups
Complete molder set ups
Troubleshoot molder operation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 1250 - Production Woodwork (4)

This course is designed to introduce the student to planning, organizing and layout of machining operations for production woodworking. Daily production teamwork is emphasized in the class lab atmosphere as production projects of substantial value are fabricated.

Prerequisite: CBTG1130 and CBTG1141

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Select project
Select team leader
Analyze project
Lay out project
Determine hardware needs
Analyze production process
Determine machining requirements
Anticipate job assignments
Develop time study guide lines
Develop material optimization sheets
Complete machining operations
Assemble project
Implement hardware installation
Conduct finish application
Determine project cost
Generate time study analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CBTG 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Conceptualize intended learning experience
Coordinate learning experience with Instructor
Outline accomplished goal from learning experience

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

CBTG 2311 - Residential Cabinet Design (3)

This course will introduce the student to fundamentals of cabinet design, hardware implementation, plan preparation and layout. The student will prepare drawings, make hardware selections, and lay out residential face frame cabinets.

Prerequisite: CBTG1121 and CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze drawer guides
Analyze door hinges
Analyze specialty cabinet hardware
Identify frameless cabinet construction styles
Perform frameless upper cabinet rod layouts
Perform frameless base cabinet rod layouts
Identify framed cabinet construction styles
Perform framed upper cabinet rod layouts
Perform framed base cabinet rod layouts
Analyze kitchen design
Perform kitchen rod layout
Complete field measurement
Calculate material take off
Calculate cabinet pricing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CBTG 2320 - Cabinet Joinery (3)

This course will instruct the student on the various methods of cabinet construction, including detailed analysis of each cabinet component part. Efficient as well as effective methods of wood joinery utilized in face frame cabinetry will be stressed.

Prerequisite: CBTG2311

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine casework joinery
Analyze machining processes
Prepare cut lists
Optimize cuttings
Select proper materials
Determine necessary fixtures
Perform cutting operations
Perform shaping operations
Perform drilling operations
Organize parts
Perform assembly checks

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CBTG 2332 - Framed Cabinetry Fabrication (5)

This course will teach the student procedures for manufacturing framed residential cabinetry. Layout, machining, assembly, finishing and installation for custom residential cabinetry will be presented.

Prerequisite: CBTG1121 and CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine kitchen measurements and design
Analyze installation requirements
Determine appliance requirements
Determine hardware needed
Analyze materials needed
Demonstrate cabinet drawing procedures
Design kitchen layout
Develop stock billing procedures
Perform cutting and machining procedures of component parts
Perform assembly procedure for casework
Perform sanding finishing procedures
Perform installation of hardware
Determine shipping requirements
Perform installation procedures
Analyze material usage and labor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

CBTG 2362 - Frameless Cabinetry Fabrication (5)

This course will teach the student procedures for manufacturing frameless residential cabinetry. Layout, machining, assembly, finishing and installation for custom residential cabinetry will be presented.

Prerequisite: CBTG1121 and CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine kitchen measurements and design
Analyze installation requirements
Determine appliance requirements
Determine hardware needed
Analyze materials needed
Demonstrate cabinet drawing procedures
Design kitchen layout
Develop stock billing procedures
Perform cutting and machining procedures of component parts
Perform assembly procedure for casework
Perform sanding finishing procedures
Perform installation of hardware
Determine shipping requirements
Perform installation procedures

Analyze material usage and labor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

CBTG 2410 - Furniture Design (2)

In this course the student will learn to identify specific furniture styles and their components. The student will be required to research and design a specific piece of furniture.

Prerequisite: CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify period furniture components
Identify period furniture styles
Identify period furniture hardware
Analyze a specific furniture area
Design a specific piece of furniture
Develop construction principles for the designed piece of furniture
Develop manufacturing techniques for the designed piece of furniture

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CBTG 2421 - Furniture Joinery (4)

This course will focus on the joinery and techniques involved in the construction of furniture. Specific project work will

be accomplished.

Prerequisite: Required: CBTG1121 and CBTG1170. Recommended: CBTG2410

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze furniture drawings and construction techniques
Develop layouts and stock bills for furniture projects
Conduct machining techniques for furniture construction
Complete dovetail drawer construction techniques
Complete veneering techniques
Conduct assembly procedures for furniture construction
Complete finishing techniques for furniture construction
Calculate project cost
Evaluate design and construction details

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

CBTG 2431 - Furniture Fabrication (5)

This course will focus on the joinery and techniques involved in the construction of furniture. Specific project work will be accomplished.

Prerequisite: CBTG1121 and CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze furniture design for manufacturing
Develop a product construction plan
Estimate project costs
Estimate product timeline
Determine material needs
Determine hardware needs
Determine joinery needs
Perform layout procedures
Develop stock billing procedures
Perform joinery machining procedures
Perform assembly procedures
Perform installation of hardware
Apply finishing procedures
Calculate project cost
Analyze product timeline

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

CBTG 2440 - Mozaik Cabinet Design (3)

This course will focus on residential cabinet design, layout and part automation using Cabinet Vision software. Emphasis will be placed on producing cabinet drawings, pictorial views, cut lists, panel optimization, CNC code generation and manipulation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine System setup
Examine Materials and Hardware libraries
Examine door and drawer libraries
Examine Cabinet constructions
Create cabinets drawings
Modifying cabinets components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CBTG 2450 - Solid Surface Fabrication (2)

This course will introduce the student to solid surface materials and focus on industry accepted fabrication techniques. Projects will be constructed. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: CBTG1121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify solid surface materials
Analyze solid surface machining techniques
Conduct machining operations
Conduct seaming operations
Complete finishing operations
Complete installation operations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CBTG 2522 - CNC Programming (3)

This course will use Router CIM software package to produce tool path code for CNC woodworking routers. Emphasis will be placed on program drawings, file management, geometry consideration and the creation of accurate tool path code for wood and plastic component parts.

Prerequisite: CBTG1170 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create file management system
Create program drawings
Manage Router CIM software
Analyze part optimization
Analyze G code language
Manage automation software
Examine part optimization and nesting procedures
Manage product components for machining
Examine parametric programming

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

CBTG 2532 - CNC Router Operation (3)

This course will cover basic programming techniques, setup, operation and maintenance of CNC woodworking routers. Basic manual code creation, controller manipulation, maintenance, tooling, machine orientation and hands on part manufacturing will be presented. Specific parts will be programmed and machined.

Prerequisite: CBTG1170

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Conduct machine startup techniques
Conduct tool height offset operations
Conduct tool diameter offset operations
Perform program loading procedures and editing
Complete different types of fixturing
Manipulate fanuc controller operations
Complete machine setup and run programs
Edit programs
Assess programs and part quality

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

CBTG 2552 - CNC Wood Product Manufacturing (3)

This course will use Router-CIM software and an Onsrud CNC router to create component parts for the purpose of manufacturing wood-related products. Students will design, draw, machine and assemble wood products to understand the application of this technology in the wood industry

Prerequisite: CBTG1170, CBTG2522, and CBTG2532

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze product drawings for part machining
Determine joinery needs

Engineer part product drawings
Determine machine processes and fixture requirements
Determine material tolerances
Create machine programs
Machine components
Evaluate component parts and machine programs
Assemble product

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CBTG 2555 - Autodesk Inventor Cabinet Design (2)

This course will use Autodesk Inventor software to assist in the development of product designs, mechanical function, fabrication methods and part creation as it relates to cabinetry, store fixtures, displays, architectural millwork and other wood product materials.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine software interface and commands
Set-up drawing parameters
Develop cabinet geometry processes
Create cabinet components list
Create cabinet drawings
Modify cabinet geometry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CBTG 2560 - AutoCAD Product Fabrication (2)

This course will use AutoCAD software including the use of 3D visualization to assist in the development of product designs, product engineering, fabrication methods and part creation as it relates to cabinetry, store fixtures, displays, architectural millwork and other wood product materials.

Prerequisite: CBTG1170 or professional experience with this software

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify product fabrication needs
Examine material and hardware needs
Create 2D and 3d product drawings
Develop part lists and optimization
Examine manufacturing criteria
Determine import and export criteria

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CCDS - Career Development Services

CCDS 1000 - College Success Seminar (1)

This course provides students the skills and knowledge to succeed in college. Topics will include accessing college resources; learning how to utilize college technology such as eservices, D2L, and email; and developing college success strategies.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify opportunities for personal and academic growth
Utilize appropriate college resources and services
Demonstrate proficiency in college technology platforms
Evaluate learning strategies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CCDS 1020 - Interviewing Skills (1)

Preparing for a job interview could very well be one of the most important moments of a career search. This course will help students sharpen interviewing skills such as open-ended questioning, active listening, and reading body language - all essential in a variety of interview situations. Just a little preparation and thought ahead of time can have wondrous effects on interviewing skills. This course will provide an in-depth analysis of the interviewing process.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930, qualifying score on reading assessment test OR ENGL0921, and successful completion of CCSD1040 strongly recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare for an interview
Explain interview styles
Identify interview question types and appropriate responses
Demonstrate appropriate nonverbal behavior for an interview
Identify nonverbal cues within an interview
Perform interview follow-up procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CCDS 1040 - Job Seeking Skills (2)

Finding a job is one of the most difficult tasks we ever face. Research shows people may change careers from three to nine times during their working lifetime. Students will learn the skills necessary to explore the job market, create a salable resume and application letter, and present one`s self effectively in an interview.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal strengths
Compile resume
Write cover letter
Identify job qualifications
Develop networking techniques
Create career portfolio
Apply interview questions appropriately
Determine appropriate communication skills
Assess transferable job skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CCDS 1100 - Student Success (3)

This course is designed to help students identify and develop necessary strategies to enhance life skills and college success. Focused topics will include overcoming barriers to success; study skills, such as time management and note taking; learning styles; college expectations and resources; money management; career exploration; and maintaining physical, mental and emotional health.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop time management strategies
Demonstrate money management skills
Identify emotional intelligence strategies
Utilize appropriate college resources
Recognize effective strategies for goal setting
Discover personal learning styles
Define stress management strategies
Develop individualized career and education plan
Develop critical thinking and problem solving skills
Employ strategies for test taking and study skills
Demonstrate effective oral and written communication skills
Develop team building strategies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCDS 1500 - Individualized Studies Degree Planning (2)

This course is intended for students who want to design an educational plan that is flexible and individualized. Special attention is given to assessment techniques, identification of learning goals, career development theory and Hennepin Technical College Individualized Studies policies and procedures. This course is required for students who seek admission to the Individualized Studies degree program.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess personal traits
Outline prior learning experience
Examine academic strengths and weaknesses
Explore career areas of interest
Identify academic goals and career objectives
Compare self-assessments with career objectives
Develop an Individualized Studies degree plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CCIS - Information Technology Computer Careers

CCIS 1000 - Information Systems (3)

This is a beginning course and will introduce the student to an overview of the IS principles which every business and computer student should understand. This course will present the changing role of the IS professional as well as introduce concepts that will be covered more fully in advanced classes.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define terms
Label computer components
Utilize application software
Describe data communications
Apply business and computer ethics
Identify computer security issues
Characterize database functions
Explore future job opportunities
Compare decision making practices
Explain artificial intelligence technologies
Summarize emerging technologies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1005 - Computer Security Awareness (3)

In this course we will examine the issues surrounding computer security in today's highly technological world. The course is designed to provide an overview of security problems and is intended for end users who use computers at home or in the office. The course covers information about staying secure, including maintaining a secure environment and how to avoid security attacks.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define a broad view of Computer Security as information security
Gain an understanding of the issues and effects surrounding Computer Security
Understand the types of attacks that can occur
Apply legal issues in computer security cases
Apply ethical issues in computer security cases
Examine elementary cryptography
Explore the nature of attacks and their economic impact
Analyze cases to determine solutions for secure systems management
Develop a personal computing security plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1032 - Microsoft Access (3)

This course covers the basic functions of a database management package as applied to business applications. These basic functions include how to create and secure a database, import data and maintain records in a table, query a database, produce forms, and generate reports. In addition, students learn how to perform mass changes, export data to other applications, create macros and design a menu system.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create table structure
Import spreadsheet data
Query database tables
Sort and filter records
Create forms and reports
Modify existing table structure
Apply validation rules
Enforce referential integrity
Perform mass changes with queries
Produce multi-page forms
Customize reports
Export data to other applications
Create macros
Construct a menu system
Apply database security

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1035 - Microsoft Word (3)

This course will include creating, editing and formatting of business documents. Students will also receive training in features such as merge, sort, tables and other enhancements. It will be necessary to have access to a computer outside of class. A student computer lab is available on each campus.

Prerequisite: Qualifying score on keyboarding assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create single-page and multi-page documents
Create headers and footers
Add page numbering
Use Mail Merge to create documents
Create text in columns
Sort text
Create tables
Apply formatting to text
Enhance files with graphic images
Proofread documents
Edit documents
Print documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1042 - Microsoft PowerPoint (3)

This course is for personnel responsible for creating presentations in a business environment. Using the many features of PowerPoint, the student will learn to produce slides which include diagrams, clipart, charts and graphs. The student will import data from word processing and spreadsheet software to prepare professional presentations.

Prerequisite: Qualifying score on keyboarding assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct slides
Create SmartArt graphics
Construct tables and charts
Apply transition effects

Insert sound and movie clips
Insert graphics
Utilize animations
Navigate using hyperlinks and action buttons
Prepare a self-running presentation
Identify printout capabilities
Differentiate file formats
Collaborate and deliver a presentation
Publish to the web

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1080 - Microsoft Office Productivity Apps 1 (3)

This course provides students with training in the Microsoft Office Suite. Students will receive instruction in Word, Excel, Access and PowerPoint. It will be necessary to have access to a computer outside of class. A student computer lab is available on each campus.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create documents in Word
Apply formatting to Word documents
Create Excel worksheets and charts
Format worksheets and charts
Create tables, forms, queries, reports using Access
Create PowerPoint presentations
Format presentations
Enhance files with graphic images
Proofread documents
Edit files
Print files

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1090 - Microsoft Office Productivity Apps 2 (3)

If there's a task to be done, whether it's personal or for your job, there's a productivity app that will help you do it faster, cheaper, and more efficiently. This course provides students with more training in areas such as Excel, Access, Project, and Visio requiring use of critical thinking and problem-solving skills to create real-life solutions.

Prerequisite: CCIS1080 OR instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Modify Excel worksheets and charts
Generate Excel Macros
Create Pivot Charts
Perform data analysis
Modify database table structure
Perform Database queries
Import spreadsheet data
Produce custom database forms and reports
Sort and filter records
Create forms and reports
Navigate Visio to create diagrams and flow charts using stencils
Enter detailed data into Project and Visio

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

CCIS 1095 - Microsoft Office 365 (2)

This course helps students become familiar with Outlook and learn the core operations of the program. Outlook is a personal information manager available as a part of the Microsoft Office suite. Although often used mainly as an email application, it also includes a calendar, task manager, contact manager, note taking, a journal and web browsing. This course will prepare students to become more efficient Outlook users by giving them skills to use in both their personal and professional lives.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the features of Outlook
Organize and manage the inbox
Utilize calendar features
Apply scheduling basics
Organize contacts
Manage calendar with meetings and events
Create and send a voting poll in an email message
Manage tasks

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

CCIS 1102 - PC Operating Systems (3)

Examines the functions of the Windows Operating System and the Linux operating system, including command line interface, and essential open source software concepts. Students will be able to manage their own desktop or laptop computers, including installing and running applications, managing files and using the Internet. This course takes a hands-on approach to exploring the day-to-day operations of operating systems.

Prerequisite: Recommend: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the major elements of a computer operating system and explain their functions
Describe the differences between application and system software
Identify what user impact the graphical user interface (GUI) has on routine computer work
Utilize the basic functions of the major Windows 10 and Linux desktop environments
Utilize System Settings to customize the desktop and computer system
Identify features of the configuration utilities provided by the desktop environments
Explain methodologies that can be used to organize data storage
Utilize Windows application programs
Examine the features of system maintenance
Utilize a command line interface
Utilize current technological tools
Demonstrate getting troubleshooting help
Demonstrate a variety of networking and media features
Create, edit, save and print documents using application programs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

CCIS 1105 - Network Essentials (4)

This course exposes students to networking concepts, technologies and typical network administration/analysis duties found in the workplace. Topics covered include communication models, network protocols, IP addressing and subnetting, physical and logical topologies, transmission media, and network hardware.

Prerequisite: CCIS1102 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the function of each layer of the OSI model
Align the OSI layers to the TCP/IP model
Design an addressing and subnetting scheme for a routed IP network
Describe the relationship between IP and MAC addresses
Create physical network and logical topology diagrams
Describe the role and function of routers and switches
Identify common connectivity issues
Compare WAN technologies
Compare LAN technologies
Identify standard cable types
List the characteristics of common logical network topologies
Identify commonly used TCP and UDP ports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1110 - Windows Admin 1 (3)

This is the first of three courses in network administration using Windows networks. The course will use the latest two versions of Windows operating systems in a `workgroup` or peer-to-peer configuration. Students will learn to both

install the operating systems and then to configure the desktop interface for different types of users. This will involve user management, local security groups, policy implementation, printer access, and some remote desktop configuration.

Prerequisite: CCIS1105 or concurrent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Install current versions of Windows workstation level operating systems
Assign correct local security permissions to users on a group basis
Utilize Microsoft Management Console snap-ins to administer computers and user accounts
Define security policies that users and computers will comply with
Set up printer access to a network printer
Contrast between permission levels available on shared folders and NTFS security volumes
Operate MS Remote Desktop Connection between a server computer and a client workstation
Adhere to common "best practices" when administrating user password controls and management
Troubleshoot configuration problems workstation members

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1121 - Linux Admin 1 (3)

This course will introduce students to administrative functions of the Linux operating system. Essential elements of the operating system will be explored and understood. At the end of this course, the student will be able to administer a Linux operating system as a standalone device.

Prerequisite: CCIS1102 and CCIS1105 OR instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manipulate user accounts
Configure system startup and shutdown
Manipulate processes
Examine system security
Examine system performance
Identify performance bottlenecks
Manipulate file permissions
Set up printer access to a network printer
Adhere to common "best practices" when administering user password controls and management
Troubleshoot configuration problems

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1260 - Data Analysis I (3)

Introductory data analyst course using Excel, Access and PowerPoint. Extensive use of Excel spreadsheets including formulas, graphs and pivot tables. Create basic Access queries to gather data. Course covers concepts such as percentages, trends and basic statistical concepts.

Prerequisite: CCIS1080 - Required. ACCT1125 and MATH2150 - Recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret trend and statistical concepts of data analysis
Discuss the role, methods, and processes for extracting data from complex sources
Solve basic data analysis cases using common data analysis tools
Present data sets using Excel, Access and Word
Explore Excel and Access programming syntax
Manipulate Excel formulas to aid data analysis
Create and troubleshoot formulas and functions for data extraction
Perform what-if analysis
Discuss probability and inference statistics
Define data analysis within the work environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

CCIS 1301 - HTML & CSS (3)

This course is an introduction to web development with HTML and CSS. In this course, students will learn about key

technologies and standards behind the internet and world wide web. Students will develop website projects that meet current web standards and industry best practices using modern tools and techniques. The focus of this course is on the use of basic HTML and CSS as a technical foundation for later coursework in web application development in JavaScript, .Net or Java.

Prerequisite: CCIS1000 and CCIS1102

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify key internet technologies, standards and organizations
Describe the client/server architecture of the internet, explaining the request-response life-cycle
Explain the structure of the DOM, identifying parent-child and sibling relationships
Build valid HTML pages that use best practices for layout, navigation, tables, forms, images and multimedia
Write CSS to layout, format and enhance the display of a web page applying industry best practices
Develop web pages that alter the visual presentation appropriately for devices of various sizes
Identify accessibility barriers in website design and development
Apply a current industry web development framework or library to development of a website
Use a source code management tool to maintain a website

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1310 - Microsoft Publisher (3)

This course is an introduction to desktop and Web-based publishing using Microsoft Publisher. Students will learn how to create and enhance publications such as brochures, flyers, and newsletters and then convert them to websites. Students will also integrate information and files from Word, Excel, Access, and PowerPoint while working with a variety of clip art and photographs.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct a flyer
Develop a brochure
Design a newsletter
Import text and images
Demonstrate text and object manipulation
Apply Business Information Sets
Utilize tables
Prepare for commercial printing
Demonstrate advanced features
Convert to a web page

Publish to the web

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1351 - Advanced HTML (4)

In this advanced course, students will learn the intermediate and advanced use of styles and layers. Special attention will be paid to accessibility, classes, identifiers, pseudo-elements, and pseudo-classes. Work will include subjects from controlling text and font families to styled lists and forms to the use of multiple style sheets. Web page optimization and search engine placement will also be covered.

Prerequisite: CCIS1301

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create a standard web page that uses styles and layers
Write a web page that makes use of Dublin Core meta tags, an appropriate DOCTYPE tag, block, and inline elements
Use an industry standard validator and web accessibility evaluation tools to critique a web page
Explain why tables must never be used for design and why they must never be nested
Use styles to create a dynamic menu bar
Demonstrate the use of JavaScript in a web page
Create a stylized web form
Incorporate embedded and external multiple style sheets
Use pseudo-elements and pseudo-classes in the construction of a web page
Demonstrate the use of browser specific styles

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1421 - CCNA 2: Basic Router and Switch Configuration (4)

This is the second of four "Cisco Academy" Courses that will prepare students for the Cisco Certified Network Associate (CCNA) exam. Topics covered include the following: basic router and switch configuration, routed protocols, static and dynamic routing, VLANs, EIGRP, and DHCP.

Prerequisite: CCIS1105

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the role of routers and switches in a network
Identify the stages of the router boot sequence
Describe the functions of a router's or switch's internal components
Configure basic router and switch parameters
Configure a router and switch interfaces
Configure static and default routes
Describe the basic characteristics of common routing protocols
Configure EIGRP routing
Compare store-and-forward and cut-through switching
Describe the benefits of VLANs, trunking, and inter-VLAN routing
Configure static VLANs Configure inter-VLAN routing
Configure inter-VLAN routing
Configure DHCP services

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1431 - CCNA 3: Intermediate Router and Switch Configuration (4)

This is the third of four "Cisco Academy" Courses that will prepare students for the Cisco Certified Network Associate (CCNA) exam. Topics covered include the following: complex router and switch configuration, classless routing, OSPF, NAT, ACLs, and Wireless LANs.

Prerequisite: CCIS1421

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the three-layer design model
Design a VLSM addressing scheme to accommodate subnets of different sizes
Define route aggregation
Compare distance-vector and link-state routing protocols
Configure Single Area OSPF routing
Configure a Wireless LAN

Identify the benefits and risks of a redundant Layer-2 topology
Explain the benefits of NAT, PAT, and private addresses
Configure NAT and PAT
Compare standard, extended, and named ACLs
Configure standard, extended, and named ACLs
Describe the function of firewalls

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1443 - CCNA 4: WANs, VPNs, and Enterprise Networks (4)

This is the fourth of four "Cisco Academy" courses that will prepare students to take and pass the Cisco Certified Network Associate (CCNA) test. Topics covered include the following: WAN design, WAN technology (PPP, Frame Relay, Broadband), multi-area OSPF, VPNs, IPv6, and network troubleshooting.

Prerequisite: CCIS1431

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Contrast packet-switched and circuit-switched WAN technologies
Explain the pros and cons of current WAN technologies, protocols, and design models
Describe broadband (DSL and cable modem) connectivity basics
Describe the goals of WAN design
Configure routing via PPP links
Examine the topology of a Frame Relay network
Configure a Frame Relay PVC
Troubleshoot WAN connections
Configure multi-area OSPF routing
Configure site-to-site VPNs
Examine IPv6 addressing and routing options
Describe key factors that affect network performance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1480 - CCNA (Cisco Certified Network Associate) Exam Prep (1)

The focus of this course is to prepare for the CCNA certification exam. Topics covered will include all prior CCNA coursework as it relates to the CCNA certification exam. Students will prepare through simulated practice exams and experiences.

Prerequisite: CCIS1442 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the Cisco certification pathway
Explain the process of CCNA certification exam registration
Analyze CCNA practice exam questions
Complete CCNA practice certification exams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CCIS 1490 - CCNA Specialty Fields (3)

This course will expose students to three specialty fields associated with the administration of Cisco networks. Topics covered include IPv6 networks, voice networks, and security.

Prerequisite: CCIS1431

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design addressing schemes for IPv6 networks
Configure static and EUI-64 IPv6 addresses
Configure static and dynamic routing for IPv6 networks
Configure intrusion detection/prevention features on a router
Implement AAA features on network devices
Configure remote-access VPNs
Describe VoIP components and technologies
Configure a Cisco network to support VoIP
Configure gateways, voice ports, and dial peers to connect to the PSTN and service provider networks

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1505 - Fundamentals of Programming (4)

This course is the first course for a student planning to study computer programming. The course content introduces the student to both procedural and object-oriented programming. Emphasis will be placed on procedural programming, computational thinking and problem solving. Topics will include flowcharting, pseudocode, program design, data types including arrays and objects, conditional boolean logic, program structures for branching and iteration, functions, and basic data structures.

Prerequisite: Microsoft Windows experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply computational thinking concepts such as abstraction, generalization and composition/decomposition
Diagram program logic flow
Solve problems using sequences, decisions and iteration in program flow
Solve problems using arrays and common data structures
Build procedural programs using stateless functions
Develop programs to solve real-world problems
Use appropriate program documentation, programming style and language conventions
Create appropriate test cases with good test data
Apply program debugging techniques and methods
Identify the core features of object-oriented programming
Compare and contrast procedural and object-oriented programming
Apply object-oriented programming techniques in program development

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 1515 - Programming Overview (3)

This course is for a student planning to study networking, database or other Information Technology (IT) discipline. Emphasis will be placed on procedural programming, computational thinking and problem solving. Topics will include flowcharting, pseudocode, program design, data types including arrays, conditional boolean logic, program structures for branching and iteration, functions, and basic data structures.

Prerequisite: Microsoft Windows experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the relevance of programming skills for careers in IT Operations
Apply computational thinking concepts such as abstraction, generalization and composition/decomposition
Diagram program logic flow
Solve problems using sequences, decisions and iteration in program flow
Solve problems using arrays, and data structures such as lists and key-value pairs
Build procedural programs using stateless functions
Develop programs to solve real-world problems
Create appropriate test cases and data
Apply program debugging techniques and methods in program testing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

CCIS 2055 - Project Management (3)

This course will teach students project management skills utilizing Microsoft Project using a group-oriented problem-solving approach. Content covers the basic to intermediate Project skills to include planning a project, creating schedules, communication of information, assigning resources and costs, tracking progress, and closing a project.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define terminology
Determine project outcomes (goals)
Formulate project definitions
Identify stakeholders
Identify phases
Manage conflicts
Generate reports
Analyze project
Apply critical thinking skills throughout the project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2065 - Help Desk/User Support (3)

This is a capstone course, designed to provide students the broad range of concepts and practices required of an entry-level technology professional. Students will be engaged in activities and projects designed to prepare and provide them with the knowledge, skills, and attitudes (KSA's) required to become technical service providers.

Prerequisite: CCIS1000 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe support structures
Explain the evolution of processes and procedures
Develop a support philosophy
Investigate industry support trends
Plan and produce end-user documentation
Utilize office applications for decision-support analysis
Distinguish between call and caller management
Develop strategies to be a service provider
Evaluate end-user quality improvement processes
Prepare and improve upon training materials
Assess individual contributions to team goals
Judge individual and team performance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2090 - Microsoft Office Integration (3)

This course provides a practical, project-based capstone for students with an understanding of the Microsoft Office Suite. Students will learn how to integrate Word, Excel, Access, PowerPoint, and Publisher. Students can master the true potential of Office by learning how to work with multiple applications together, as in a real-world business environment. In today's fast-moving, mobile environment, this course focuses on the job skills needed to succeed in the workforce. This course prepares students to become more capable software users by requiring them to use critical thinking and problem-solving skills to create real-life solutions giving them skills to use in both their personal and professional lives.

Prerequisite: CCIS1032 or CCIS1080 OR instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore integration features in Office
Integrate Word and Excel files
Integrate Word and PowerPoint files
Integrate Word and Access files
Integrate Excel and Access files
Integrate Excel and PowerPoint files
Integrate Publisher and Access files
Integrate Word, Excel, Access and PowerPoint files
Integrate Office and internet files with One Note
Utilize Accessibility Checker
Save documents to OneDrive

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2122 - Linux Admin 2 (4)

This course will focus on the network functions of the Linux operating system. Advanced services of the operating system will be installed. In addition, the role of Linux as part of a server environment will be understood. At the end of this course, the student will be able to administer a Linux operating system as part of a network.

Prerequisite: CCIS1121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Debug TCP/IP networking
Evaluate system security
Configure Linux firewall
Configure webserver software
Configure OpenSSH software
Configure name server software
Write shell scripts
Perform backups
Configure Lightweight Directory Access Protocol (LDAP) services
Configure file services
Manage Linux software installations
Configure DHCP services

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2135 - PowerShell and Bash Scripting (4)

Automation is vital in an IT professional’s skill set. This course will provide students with basic and intermediate

scripting skills required for Windows and Linux systems administrators. Using PowerShell and Bash scripting languages, students will learn how to automate basic repetitive tasks and write scripts to manage server administration functions. Students will also understand how scripts can be used to gather information from multiple servers across an enterprise network. Students will learn how to document, troubleshoot, and debug scripts. Students will write, execute and test PowerShell and Bash scripts using virtual machines.

Prerequisite: CCIS2122 and CCIS2150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the role automation plays in supporting Windows and Linux environments
Write scripts using PowerShell
Write scripts using Bash
Perform basic administrative tasks using scripts
Write scripts with complex structures
Automate server administrative tasks using scripts
Utilize Windows PowerShell Integrated Scripting Environment (ISE)
Manage Active Directory users and computers using scripts
Facilitate scripting with different Linux editors
Apply best practices for documenting scripts
Troubleshoot common scripting errors
Debug scripts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2150 - Windows Admin 2 (4)

This is the second of three courses in network administration using the latest two versions of Windows server operating systems. This course will employ the use of both server and workstation level computers to simulate the configuration of a business class network environment focusing mostly on user management through directory services and file server tier application services. Topics include working in active directory environments, printing, user account management, security management, Internet Protocol-address management, Dynamic Host Configuration Protocol (DHCP), terminal services, and Domain Name System (DNS) services. The course will also utilize virtualization software to simulate client workstations.

Prerequisite: CCIS1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Install Windows Server operating systems
Ensure correct driver configuration on servers

Upgrade standalone servers to roles of domain controllers using Active Directory
Manage directory based user accounts
Employ various user local and global security group memberships
Compare peer-to-peer networking security to that available using directory services
Follow current "best practices" for configuring users access permissions
Implement security policies administrated on the domain, organizational unit, and local computer levels
Adhere to currently accepted formats in handling user passwords in a secure environment
Set up network printer access for clients
Delegate a DHCP server for your network group
Adjust DNS and Internet Protocol settings to access the campus network and the Internet

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2161 - Linux Admin 3 (3)

This course will further expand on the topics introduced in Linux Admin 1 and 2. Students will gain experience using current Linux technologies used in modern networks. Students will gain an understanding of Linux services that support enterprise networks.

Prerequisite: CCIS2122

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Automate common administrative tasks using Bourne Again Shell (Bash shell) scripts
Set up multiple virtual machines into a single networked environment using virtualization software
Deploy virtual machines using automation software
Configure virtual machines using automation software
Manage virtual machines using automation software
Manage code and tasks in collaboration with project team members using repository hosting services
Configure Linux Containers
Install mail services
Utilize current Linux technologies used in modern networks

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2222 - Network Configuration (3)

This course will provide a practical knowledge of network concepts and hardware configuration. The course will give students the opportunity to set up and troubleshoot a variety of networking solutions. Topics covered will include the following: selecting and installing network cabling, configuring workstations, routing, implementing wireless networks, network diagramming, and utilizing networking tools to analyze and maintain a group of computers.

Prerequisite: CCIS2122 or CCIS2150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct network cables using bulk cable supplies conforming to accepted safety and quality standards
Compare various types of network media available for use on modern networks
Analyze current accepted standards being used on networks
Develop network diagram of various sized networks
Explain what Open System Interconnection (OSI) layers are involved in movement of data through hubs, bridges, switches, and routers
Describe the utilization of Virtual Local Area Networks (VLAN)s in segmenting networks
Install wireless networks using access points and client adapters
Demonstrate the use of help desk software for assigning tasks, tracking trouble-tickets and documenting solutions
Describe qualities required to retain customer satisfaction when providing consulting services
Employ software used to secure computers against viruses and other vulnerabilities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2270 - Windows Admin 3 (4)

This course will provide students with hands-on experience in setting up and administering Active Directory, E-mail, Web, and File Transfer Protocol (FTP) services using Exchange Server and Microsoft's Internet Information Server. Students will learn to configure multiple server roles. Students will utilize technology to run virtual machines. Students will gain experience working in a Windows command-line environment PowerShell.

Prerequisite: CCIS2150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Install Windows Server operating systems
Set up multiple virtual machines into a single networked environment using virtualization software
Configure multiple server roles
Configure mail services
Install web services
Build a static website using web services
Configure File Transfer Protocol (FTP) services
Manage network using PowerShell software
Manage Active Directory users and computers using PowerShell
Install Windows Server core version
Configure Active Directory services using Server core version
Install Windows Deployment Server (WDS) services
Manage virtual cloud environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2385 - IT Internship (2 - 8)

This is a cooperative program between Hennepin Technical College and a participating company to allow the student an employment-like work experience.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently
Organize work schedule
Follow prescribed procedures
Demonstrate safety
Demonstrate initiative
Integrate previously acquired skills
Integrate previously acquired knowledge
Display good judgment
Demonstrate dependability
Exhibit professionalism

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: OJT: 2-8

CCIS 2415 - IT Security Management and Compliance (3)

An information assurance (IA) strategy is key in managing risks relating to the data entry, storage, retrieval and transmission of information within the information technology (IT) infrastructure. This course is designed to provide students and working professionals with the knowledge and capacity to implement best practices in data protection, audit controls, and security monitoring.

Prerequisite: CCIS1005 and CCIS1105

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe best practices for developing a security policy
Discuss how IT introduces risks to large and small businesses
Analyze the relationships between assets, threats, vulnerabilities, risks, and controls
Investigate physical security and environmental controls critical in safeguarding data
Differentiate between physical security, disaster recovery, and business continuity
Identify personnel and key positions within an organization responsible for keeping its information assets safe
List the fundamental concepts of an information assurance (IA) strategy
Define the components of a security audit plan
Summarize key U.S. legislation for information security compliance and how it relates to state, national and international jurisdictions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2422 - CCNA Security (2)

Students will study and implement security features on Cisco routers to protect computer networks from attacks. The Cisco CCNA Security curriculum provides an introduction to the core security concepts and skills needed for the installation, troubleshooting, and monitoring of network devices to maintain the integrity, confidentiality, and

availability of data and devices. This course is a hands-on, career-oriented course with an emphasis on practical experience to help students develop security skills to advance their careers.

Prerequisite: CCIS1431

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe security threats facing modern network infrastructures
Implement Authentication, Authorization and Accounting (AAA) on network devices
Mitigate common Layer 2 attacks
Compare intrusion prevention systems (IPS) and intrusion detection systems (IDS)
Implement site-to-site Internet Protocol security (IPsec) virtual private networks (VPNs)
Mitigate threats to networks using access control lists (ACLs)
Monitor traffic flows through security appliances

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 2

CCIS 2460 - Data Analysis II (3)

Continuation of Data Analysis I with more advanced treatment of data reporting, interpretation, and presentation. Advanced Excel formulas, functions and macros will be created to perform advanced data interpretations. Explore the need and use of data within a variety of industries, such as healthcare and banking. Students should have advanced Excel spreadsheet knowledge.

Prerequisite: MATH2150 - Required. CCIS1260 - Recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify data trends and effectively report their impact
Utilize advanced Excel and Access techniques for data reporting
Define concepts of descriptive summary measures
Solve complex data analysis cases using data analysis tools
Create charts for data interpretation
Create and edit macros
Demonstrate knowledge of relational data
Develop an application based upon business needs determined
Design effective presentations using data gathered for reporting
Develop logical data models

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2465 - Data Analysis III (4)

Project based course with applications to real world industries such as healthcare and banking. Healthcare and financial concepts and industry practice will be studied. Students will analyze data and present his findings using Excel and PowerPoint.

Prerequisite: ACCT1125 - Required. CCIS2460 - Recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify relevant trends and anomalies in industry data
Explain data trends and anomalies in a clear, concise manner
Examine healthcare and financial data concepts
Create managerial data presentations
Generate Excel reports, Pivot tables and Pivot charts
Discuss and provide suggestions for advanced issues within data analysis tools
Solve complex data analytics to resolve financial and healthcare security and policy mandates
Discuss current practices and trends in data infrastructure
Extract data from complex sources
Analyze and interpret resources and draw appropriate conclusions
Identify and manage issues concerning the ethical use of data
Examine extracted data and perform analysis to resolve business problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2500 - Mobile Application Development (4)

The students who take this course will be introduced to creating mobile applications using the Microsoft .NET Framework and the C# programming languages. The course will discuss mobile design considerations including graphical user interface design and managing local and remote application data. The course will also include a

discussion of building and porting mobile applications to other platforms.

Prerequisite: CCIS2585

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply .NET programming skills to mobile application development
Design applications appropriately for a mobile environment
Compare and contrast graphical user interface (GUI) design for pc and mobile platforms
Build a simple client application for a mobile device
Access local data and files
Access remote data
Synchronize mobile data
Debug and test mobile device applications
Generate programs that run on Windows pcs, phones, and tablets
Describe options for building and porting applications for use on other mobile platforms

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2505 - Cybersecurity Essentials (3)

The Cybersecurity Essentials course covers foundational knowledge in all aspects of security in the cyber world. Students will identify procedures to implement data confidentiality, integrity, availability and security controls on networks, servers and applications. Using interactive activities, virtual machines and a network simulation and visualization tool, students will build their skills by exploring the tactics, techniques and procedures used by cyber criminals and learn methods to mitigate known threats.

Prerequisite: CCIS1005 and CCIS1105

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate the roles of criminal actors and security professionals in the cybersecurity domain
Detail the International Organization for Standardization (ISO) cybersecurity model and related security standards
Examine the threat identification process
Discuss the importance of protecting all of the states of data in cyberspace
Compare encryption methods used to protect confidentiality
Describe technologies and products used to ensure integrity
Identify measures to improve availability
Explain how authentication, authorization, and accountability practices are used to manage access control
Discuss how obfuscation and steganography are used to accomplish data masking

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2510 - Software and System Security (3)

Cyber threats continue to target software and hardware. Achieving and maintaining security relies on a security professional's keen understanding of design principles, system interoperability and human actors (users). This course will examine the design and security principles required to identify and mitigate threats. Students will learn the concepts of isolation, encapsulation, least privilege, simplicity and minimization, failing-securely, modularity, layering, least astonishment, open design, and usability.

Prerequisite: Prerequisite: CCIS1005 and CCIS1105. Recommended: CCIS1505

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the phases of the Systems Development Life Cycle (SDLC)
List the key principles of system security
Describe how design principles enable the development of security mechanisms that adhere to desired security policies
Analyze common security failures and why they occur
Identify requirements needed for developing secure software systems
Investigate specific design principles that have been violated in common security failures
Assess the existence or absence of a required design principle when given a specific scenario
Describe why good human machine interfaces are important to system security
Examine the interaction between security mechanisms and system usability and the importance for minimizing the tradeoffs between usability and security

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2515 - Firewall Essentials (2)

Through hands-on activities, students will complete the installation, configuration and management of hardware and software firewalls. This course will explore the identification and mitigation of known and unknown exploits threatening data networks. Students will utilize best practice and principles in evaluating the role of firewalls in today's cyber landscape.

Prerequisite: CCIS1431 Required. CCIS2421 Recommended.

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare industry-leading firewall platforms and architecture related to public cloud security
Describe features of next-generation firewall technologies
Identify security controls needed to secure a network environment
Configure network address translation (NAT) in accordance to security policies
Manage access to web addresses and content
Apply filtering methodologies to protect against known and unknown threats
Configure synchronous and asynchronous encryption, public key infrastructure (PKI) and certificates in firewall configurations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 2

CCIS 2525 - Modern Cryptography (1)

This course will reinforce students understanding of cryptographic encoding and decoding to secure data in transit across private and public networks. Students will complete an in-depth exploration of ciphers, cryptographic algorithms, integrity checks, message authentication, key management and hash functions.

Prerequisite: CCIS2505

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the business and security requirements for cryptography
Identify strengths and weaknesses of classical encryption techniques
Utilize cryptographic applications, tools and resources to secure data transmissions
Manage common cryptographic protocols

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 1

CCIS 2535 - Ethical Hacking and Cyber Defense (2)

This course examines the role of ethical hackers in securing systems. Students will learn the key steps of planning and scoping an engagement before commencing ethical hacking activities. Students will perform vulnerability scanning and penetration testing (pentesting) using appropriate tools and techniques. Various attacks and exploits will be studied to identify network-based vulnerabilities and common targets. Students will analyze tool output and data resulting from pentesting. Students will produce reports containing findings and mitigation strategies for discovered vulnerabilities. This course aligns with the following career pathways: Ethical Hacker, Penetration Tester, Vulnerability Tester, Security Analyst, Vulnerability Assessment Analyst, and Network Security Operations Specialist.

Prerequisite: CCIS2122

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the legal requirements of an ethical hacker
Identify key concepts in planning for an engagement
Perform vulnerability scans
Analyze vulnerability scan results
Compare and contrast various penetration testing tools
Exploit network-based vulnerabilities
Explain mitigation strategies for discovered vulnerabilities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 2

CCIS 2575 - .NET Programming I (4)

The students who take this course will be introduced to creating Microsoft Windows applications using the Microsoft .NET Framework, Visual Basic and C# programming languages. This will include using Windows forms, controls, events, methods, procedures and functions. The student will also learn how to create and manipulate database files,

create and use sequential files, as well as a brief introduction to creating WEB applications.

Prerequisite: CCIS1505

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply Visual Basic and C# programming syntax
Use simple variables (strings/numbers)
Use complex data structures (arrays)
Create program code that makes decisions and uses branching
Create program code to use iteration and looping
Create program code that performs input data validation and formatting
Use sequential files
Apply object-oriented programming techniques in writing programs
Construct event procedures, subroutines, and functions
Generate programs that have graphical user interfaces using Windows controls
Generate programs that access relational databases using SQL
Utilize programming techniques to perform exception handling and error processing

Text and References: A list of textbooks required for this courseis available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2585 - .NET Programming II (4)

This course is intended as a continuation of the .Net Programming I course. The course content will introduce the student to object-oriented Windows form and web programming with database interaction. The C# and Visual Basic programming languages will be covered, and the student may choose one or both as the language of choice. Topics include software objects, classes, methods, properties, data access, LINQ, array processing, web services, threading, and console applications. Microsoft Visual Studio is used as the development environment.

Prerequisite: CCIS2575 and CCIS2701

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create program code that queries, inserts, updates and deletes from SQL databases using ADO .NET
Construct object classes that are imported and used in other programs
Create web forms using ASP .NET
Create program code that uses complex controls such as datagridview
Use XML file processing techniques
Construct advanced user interfaces using icons, system tray, anchoring and form sizing
Generate programs that include using the built-in LOGIN controls and logic
Generate web services to be used in business applications
Utilize programming techniques that call and/or start Windows processes and threads
Create a console application to process a sequential file

Use LINQ to create and navigate datasets and datatables
Utilize programming techniques to perform exception handling and error processing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2591 - JavaScript (4)

This course is an introduction to web development using JavaScript with emphasis on front-end programming using jQuery. Students will develop website projects that meet current web standards and industry best practices using modern tools and techniques. Topics include: core JavaScript syntax and object-oriented programming, DOM traversal, JSON structure, event handling, data validation with regular expressions, local data storage, Ajax, using data from web service APIs.

Prerequisite: CCIS1301 and CCIS1505 or CCIS1515 or previous programming experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the use of JavaScript, HTML and CSS to build web applications
Use core JavaScript language features including objects
Write code using jQuery for DOM traversal and manipulation
Validate user input and data using regular expressions
Process JSON data obtained using Ajax requests
Detect browser versions and available features
Read and write to local storage
Apply appropriate JavaScript coding style and best practices
Demonstrate use of JavaScript debuggers and browser developer tools
Demonstrate the use of relevant third party libraries
Apply common application build and release processes
Develop real-world applications using available web APIs and public data

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2595 - Java I (4)

This course is an introduction to programming in Java. Topics include fundamentals of Java programming, including object-oriented programming, primitive data types, control structures, methods, objects, classes, class inheritance, simple graphical user interface and event-driven programs, using Swing. Object-oriented design using the Unified Modeling Language will also be introduced.

Prerequisite: CCIS1505, CCIS1301 and any procedural programming language

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the role of the bytecode compiler
Compare and contrast if and switch statements
Use loops for repetitive tasks
Program using the basic built-in Java objects
Describe the basic Java packages
Create programming code using a class that includes objects, methods, and constructors
Use class variables, instance variables, and local variables in the same application
Explain the difference between instance and class methods
Explain the difference between interfaces and abstract classes
Create programming code using a class that uses command-line parameters
Create programming code using a graphical user interface using simple Swing components and layout managers
Write event handlers for common graphical objects
Explain the benefits of multitasking

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2615 - XML II (4)

This is a second course in XML, following XML I. Topics include advanced core XML, XLink, and XPath; XQuery; XSL; XForms; XML signatures; parsing; using XML and XSLT with Java; SOAP; and Web Services.

Prerequisite: CCIS2595, CCIS2610 and CCIS2701 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
XML review: XML, DTD`s, XSDs.
Describe and use advanced features of XML, XSDs, and namespaces.
Describe XSLT, how it works, and its purpose.

Use and apply expressions, patterns, and functions.
Describe the tree model.
Explain how templates work.
Apply templates to transformations.
Describe the XSLT stylesheet structure.
Demonstrate use of common XSLT with servlets.
Use XSLT to reformat XML documents.
Describe and use XSL-FO.
Compare and contrast XMLT with XML-FO.
Describe XQuery.
Use XQuery to search large XML documents.
Describe XLink and show how it is used.
Describe XPath and apply it to XML documents.
Show how XForms are used.
Explain how XML signatures work and how they are related to security.
Compare SAX and DOM parsers.
Write a SAX parser and apply it to a large XML file.
Write a DOM parser and create an XML document with it.
Compare and contrast JAXB, JAXP, JAXR, and JAXM.
Show how XSL can be used with Java.
Describe SOAP, its operation and purposes.
Define and explain the purpose of WSDL.
Explain Web services and the role of XML in them.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2630 - PHP (4)

A course designed for students who want to build dynamic web sites using the PHP and Perl programming languages. Since PHP and Perl are such rich and task-specific languages, the course covers in depth the most important range of functions and equips delegates to understand the remaining less essential aspects.

Prerequisite: CCIS1351 and programming experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Test access to PHP on a server
Write basic script structure and commands
Utilize Variables, Scalars and Hashes
Parse a document using industry standard validation techniques using PHP
Demonstrate the use of subroutines
Utilize email notification
Apply security with files and databases
Apply SQL databases

Generate reports with output to print and screen
Use cookies to gain and record user information
Initiate calls to OS
Explore advanced search engines
Explore advanced eCommerce topics
Interpret basic Perl syntax, correctly predicting statement results

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2645 - Introduction to ASP.NET (4)

This course is a basic introduction to Microsoft`s .NET Active Server Pages (ASP) technology for students who have a solid fundamental understanding of static web page development. The course will include the implementation of web pages with the Microsoft .NET framework using Visual Studio .NET with either the C# or VisualBasic.NET programming language. Students will develop web pages to create dynamic documents including retrieving data from SQL databases such as Microsoft SQL Server.

Prerequisite: CCIS1301 and CCIS2585

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply ASP .NET programming syntax
Use simple variables (strings/numbers)
Use complex data structures (arrays)
Create program code that makes decisions and uses branching
Create program code to use iteration and looping
Create program code that performs input data validation and formatting
Use sequential files
Apply object-oriented programming techniques in writing programs
Construct event procedures, subroutines, and functions
Generate browser-based software applications
Generate programs that access relational databases using SQL
Utilize programming techniques to perform exception handling and error processing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2675 - A+ Hardware Support (3)

This advanced course will provide practical knowledge of Personal Computer (PC) hardware and printers needed to provide technical support to computer users. Students will acquire many of the hardware skills necessary for the CompTIA A+ certification.

Prerequisite: CCIS1102 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Install personal computer (PC) hardware
Troubleshoot PC hardware problems
Describe electrical concepts
Manage hardware device drivers
Troubleshoot printer issues
Resolve PC networking issues
Install end-to-end network cabling
Perform hardware preventive maintenance tasks

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2680 - A+ Software Support (3)

This advanced course will provide practical knowledge of the Windows Operating System (OS) configuration, software installation and utility management needed to provide technical support to computer users. Students will acquire many of the software skills necessary for the CompTIA A+ certification.

Prerequisite: CCIS1102 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Install windows operating system (OS)
Troubleshoot OS errors

Use command-line and software utilities
Manage system performance
Troubleshoot password issues
Configure OS for network connectivity
Perform security and encryption tasks
Perform remote troubleshooting
Simulate call center operations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CCIS 2685 - A+ Exam Prep (1)

The focus of this course is to prepare for the CompTIA A+ certification exam. Topics covered will include all prior A+ Hardware and A+ Software coursework as it relates to the CompTIA A+ certification exams. Students will prepare through simulated practice exams and experiences.

Prerequisite: CCIS2675 and CCIS2680 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the CompTIA A+ certification pathway
Explain the process of CompTIA A+ certification exam registration
Analyze A+ practice exam questions
Complete A+ practice certification exams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

CCIS 2701 - Database Design and SQL (4)

This course covers relational databases and the efficient design of these databases. The course will include the definition of tables and indexes, logical and physical design, the E-R model, and transaction management. The use of Structured Query Language (SQL) will be emphasized.

Prerequisite: CCIS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe benefits of Database Management Systems
Compare the hierarchical, network, and relational database models
Create relational database tables
Manage the relationship between tables using candidate keys, primary keys, and foreign keys
Utilize data using the data dictionary
Contrast one-to-many, many-to-many, and one-to-one relationships
Implement many to many relationships using the bridge entity
Develop E-R models
Utilize dependencies
Normalize data structures to 3rd Normal Form
Develop database designs using the Database Life Cycle
Manipulate the database using DML, DDL, and DCL
Control concurrency of data using transactions
Contrast Data Warehouse with OLTP systems
Formulate SQL queries to retrieve data
Use relational algebra operators

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2751 - Oracle SQL and PL/SQL (4)

This course offers students an extensive introduction to data server technology. The class covers the concepts of relational databases and the powerful SQL and PL/SQL programming languages. Students are taught to create and maintain database objects and to store, retrieve, and manipulate data.

Prerequisite: CCIS2701

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize Oracle database tools
Retrieve data using SQL
Retrieve data from multiple data sources
Use aggregate functions

Use analytical functions
Manipulate the database using DML, DDL, and DCL
Create basic procedural PL/SQL blocks
Retrieve data in a PL/SQL block using cursors
Control error handling using exceptions
Centralize related logic using packages
Embed PL/SQL logic into tables using triggers
Create a web interface for an Oracle database using XE
Control multiple instances of data using collections

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2772 - Oracle Database Fundamentals (4)

This is the first of two courses in Oracle database administration. The course will introduce students to the architecture, administration, backup, and recovery of an Oracle database, including database creation, database startup and shutdown, user management, file and storage management.

Prerequisite: CCIS2751

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe Oracle Database Architecture
Install Oracle Database
Configure Oracle Database
Configure Oracle Net services
Manage database storage structures
Create user accounts
Administer user accounts
Manage users and schemas
Manage data and concurrency
Monitor database data
Understand database backup and recovery
Monitor database performance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2776 - Oracle Database Backup and Recovery (4)

This is the second of two courses in Oracle database administration. The course will introduce students to Oracle networking and performance tuning of an Oracle database. Students will learn to recognize and troubleshoot common performance related problems and configure a simple and complex Net8 environment.

Prerequisite: CCIS2772

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain concepts that support backup and recovery
Identify various backup and recovery scenarios
Create optimal backup plan
Configure Oracle Database for optimal recovery
Backup and recover a database using Recovery Manager (RMAN)
Backup and recover a database using Enterprise Manager
Utilize Recovery Manager (RMAN) backup to duplicate a database
Automate Tasks with the Scheduler
Administer disk groups
Manage performance evaluation
Implement tuning tasks
Control system resource usage
Manage memory usage

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2781 - SQL Server - TransactSQL (4)

This course provides students with the technical skills required to utilize TransactSQL programming solutions within a Microsoft SQL Server client/server database management system.

Prerequisite: CCIS1032 and CCIS2701

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret architecture
Retrieve data using TSQL
Retrieve data from multiple data sources
Use aggregate functions
Use analytical functions
Manipulate the database using DML, DDL, and DCL
Create basic store procedure
Formulate SQL queries to retrieve data
Use relational algebra operators
Control error handling using triggers
Create transactions and record locking
Interpret database and database file

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2786 - SQL Server - System Administration (4)

This course provides students with the knowledge and skills required to install, configure, administer, and troubleshoot Microsoft SQL Server client/server database management system.

Prerequisite: CCIS1032

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret SQL server data engine and service processes
Interpret relational database architecture
Install SQL server database
Configure SQL server database
Manage file space allocation
Create SQL server database and file structure
Demonstrate database security
Demonstrate database maintenance
Manage user and groups
Perform Bulk Copy of database
Create Data Transformation Services
Create performance monitoring and tuning
Perform database backup and restore

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus 952-995-1300

Credit Details: lecture: 4

CCIS 2801 - Systems Analysis (4)

This course presents a practical approach to systems analysis and design using a blend of traditional development methodologies with current technologies. Students will gain an understanding of the activities involved in all phases of the Systems Development Life Cycle. The course will focus on real-world business systems and will help students to understand how information technology supports operational and business requirements in today's fast-changing technology environment.

Prerequisite: CCIS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the roles of various information systems personnel in system development
Explain the phases of the Systems Development Life Cycle (SDLC)
Describe common activities for each phase of the Systems Development Life Cycle
Compare and contrast different Systems Development Life Cycle methodologies
Develop system proposals
Describe system concepts for object modeling
Construct data and process models
Analyze input and output design and prototyping
Explain systems operation and support requirements
Analyze Object-Oriented design techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2841 - Client/Server Computing (4)

This course covers the evolution, impact and services available with Client/Server technology and distributed computing. The characteristics of clients and servers and the role of middleware will be discussed. Students will explore the various type of Client/Server implementations: SQL databases, transaction servers, distributed objects, groupware, Web applications and JAVA.

Prerequisite: CCIS1105 or CCIS1505 or CCIS2701

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe Client/Server configurations
Differentiate various types of middleware
Describe the major components in a distributed business application
Examine the major components and functions of SQL Database clients and servers
Examine the major components and functions of Transaction servers and clients
Examine the major components and functions of Groupware clients and servers
Examine the major components and functions of distributed object servers
Describe the standards and techniques used to provide security in client/server environments
Examine the major components used in deploying web-based client/server systems
Describe the approaches to managing a distributed client/server environment
Evaluate the degree of client/server computing that exists in a computing environment
Diagram the components that are present at each tier within a client/server environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

CCIS 2875 - Workplace Readiness Skills Assessment (0)

Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. This 0 credit course will measure the skills of those who are completing a post-secondary technical program and is an HTC graduation requirement for both the Desktop Support AAS Degree and Executive Administrative Professional AAS Degree.

Prerequisite: Recommended 75% completion of the required technical courses in the degree area

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

0

CCIS 2880 - Network Admin Technical Skills Assessment (0)

This 0 credit course will measure the skills of those who are completing a post-secondary technical program and is an HTC graduation requirement for the Network Administrator/Analyst AAS degree.

Prerequisite: Recommended 75% completion of the required technical courses in the degree area

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

CCIS 2885 - IT Support Skills Assessment (0)

Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. This 0 credit course will measure the skills of those who are completing a post-secondary technical program and is an HTC graduation requirement for the IT Support AAS Degree.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Schedule exam appointment at HTC Testing Center
Complete designated third-party skill assessment
Submit proof of completion to instructor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

CDEV - Child Development Careers

CDEV 1000 - Introduction to Early Childhood Education (3)

The student will examine the various roles, responsibilities, and best practices of educators who serve children and families in a professional manner. The history, philosophies, and foundations of early childhood education will be explored. Observations of different types of early childhood programs will be required.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine history of the early childhood profession
Examine career opportunities
Explain worker requirements and roles
Compare types of early childhood programs
Research developmental theory
Utilize a variety of techniques for communicating with families
Evaluate parent involvement techniques
Describe teaching practices that support diversity
Evaluate teamwork
Practice the National Association for the Education of Young Children (NAEYC) Code of Ethics
Examine program policies
Examine licensing requirements
Utilize community resources

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 1010 - Child Growth and Development (3)

This course examines the major developmental milestones, both typical and atypical, for children from birth through adolescence in the areas of physical, social-emotional, language, cognitive and aesthetic/creative development. While studying developmental theory, investigative/observational research methods, and developmentally appropriate practices, students will observe children and analyze characteristics of development at various stages. The course emphasizes variations across cultures and interactions between maturational processes and environmental factors.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine the major theories of early childhood development and learning and their implications for practice
Examine social-emotional development of infants and toddlers
Examine cognitive development of infants and toddlers
Examine physical development of infants and toddlers
Examine social-emotional development of preschool children
Examine cognitive development of preschool children
Examine physical development of preschool children
Examine social-emotional development of school-age children
Examine cognitive development of school-age children
Examine physical development of school-age children

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 1020 - Observation and Assessment (3)

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning in promoting children's success. The students will explore recording strategies, rating systems, multiple assessment tools and portfolios. There will be a focus on increasing objectivity in observing and interpreting children's behavior, observing developmental characteristics and increasing the awareness of normal patterns of behavior. For required course activities students are expected to arrange observations of a child between the ages of 3-5 years throughout the semester.

Prerequisite: Required - ENGL2121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate a variety of assessment tools
Select authentic assessments
Categorize objective and subjective observation statements
Interpret physical development
Interpret cognitive development

Interpret social-emotional development
Interpret language and literacy development
Develop a method for organizing assessments
Summarize assessment documents
Generate an individual plan for your child based on observations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 1030 - Creative Activities and Environments (3)

The student will gain knowledge and skills related to providing age appropriate learning experiences and environments for young children (birth – age 8). The student will examine the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. The student will explore how to plan environments and select materials that provide play experiences that support development, independence, and exploration through sequential and integrated learning.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine why the environment is important to children’s learning
Investigate ways to modify activities to accommodate individual needs and interest
Examine appropriate materials that promote children’s culture, needs, interest and development
Design developmentally appropriate cognitive, creative, social-emotional and sensory-motor learning experiences
Describe the foundations of an emotional supportive and equitable environment
Examine the developmental domains
Describe multiple ways that teachers facilitate learning in the environment
Examine Minnesota Early Learning Standards
Create an interesting and safe environment that encourages play, exploration, and learning
Demonstrate the critical role of hands-on, experiential learning and environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 1520 - Guiding Children's Behavior (3)

The student will examine positive strategies to guide children's behavior. The student will examine ways to establish supportive relationships with children guiding them in order to enhance learning, development, and well-being. Students will receive an introduction to positive child guidance techniques for individual and group situations. For required course activities students are expected to arrange observations and interact with a child between the ages of 3 and 8 throughout the semester.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze strategies to promote children's understanding, acceptance, and appreciation of human differences due to social, cultural, physical, or developmental factors
Examine the importance of creating in each child a sense of belonging, security, personal worth, self-esteem, and self-confidence toward learning
Communicate with colleagues and family to provide consistency in guidance
Design developmentally appropriate routines and schedules
Critique problem prevention strategies
Critique positive communication strategies
Design strategies to assist children in learning to express emotions in positive ways, solve problems and make decisions including self-regulation and calming strategies
Evaluate an environment where young children are able to explore and expand their creative abilities
Assess consequences and antecedents of behaviors to understand their effect on behaviors
Critique pro-social problem solving methods

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 1530 - Health, Safety and Nutrition (3)

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. The student will identify key components that ensure physical health, mental health, and safety for both children and staff. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine the characteristics of an early childhood program that supports the healthy physical development of young children
Prepare developmentally appropriate learning experiences for the young child in regards to health, safety and nutrition
Analyze health requirements, symptoms of common illness and environmental hazards as well as universal precautions to limit the spread of disease and incident of injury
Evaluate early childhood environments that are physically and psychologically safe and healthy for young children
Examine the educator's role as a mandated reporter
Analyze signs of child abuse and neglect
Explain how daily health checks can be used to teach children about their health
Describe universal precautions to limit the spread of diseases and incident of injury
Examine environmental factors that affect a child's health

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CDEV 1550 - Curriculum Planning (3)

The student will gain an advanced understanding of curriculum planning. Emphasis is on organizing and evaluating developmentally appropriate curricula.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adapt curriculum to meet the individual needs of children
Practice instructional strategies
Use communication techniques with families
Develop curriculum to promote physical competence in children
Develop curriculum to promote social-emotional competence in children
Develop curriculum to promote cognitive competence in children
Develop curriculum to promote competence in the arts
Explain the role of play
Synthasize types of classroom curriculum planning

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CDEV 1725 - Practicum I (3)

This course provides students an opportunity to demonstrate the early-childhood-teaching competencies explored in other classes while guided by a teacher in a licensed early-childhood program. These competencies include: developing active and developmentally appropriate environments accessible to the multiple needs of learners, positive behavior guidance strategies, communication skills, and development of professional skills such as communication and respectful interactions with families, colleagues, and other potential partners in the care and education of young children.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Communicate with all individuals involved in the education and care of the young child in a manner that indicates understanding of children’s multiple needs, equal access for all, mandated reporting and confidentiality
Explore the scope of professionals that may collaborate in planning learning environments and demonstrate the communication skills required for effective interactions with these professionals as well as families and colleagues
Demonstrate professionalism
Demonstrate techniques to guide children's behavior positively
Demonstrate supportive relationships with children
Observe and assess children
Communicate observation results
Evaluate teaching strategies
Plan and create active learning environments that balance opportunities for individual, small- or large-group activities emerging from the interests of the children, foster the development of positive behavior, and interaction skills and involve children in the planning and implementation of these ideas

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5 SOE: 2.5

CDEV 1750 - Practicum II (3)

After successful completion of Practicum I, students will continue to demonstrate early childhood teaching

competencies under guided supervision making connections between theory and practice. Students will continue to practice professional behaviors as they apply child-centered, play-oriented approaches to teaching and learning. They will demonstrate knowledge of curriculum content areas as they develop, implement, and assess curriculum that promote positive development and learning.

Prerequisite: CDEV1725 and Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform nutrition promotion skills
Perform appropriate communication skills with colleagues and families
Lead routine activities
Implement age appropriate activities and materials
Analyze cultural sensitivity and diversity
Implement language development experiences
Exhibit characteristics of intentional teaching
Implement activities for individual children
Evaluate effectiveness of the early childhood curriculum
Model appropriate language and social behavior including problem solving and conflict resolution strategies
Apply principles of effective advocacy in your practice

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5 SOE: 2.5

CDEV 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lab: 1-4

CDEV 2000 - Children with Differing Abilities (3)

The student will examine a child with differing abilities. Students will integrate strategies that support diversity and anti-bias perspectives, provide inclusive programs for young children, and apply legal and ethical requirements including but not limited to Americans with Disabilities Act (ADA) and Individuals with Disabilities Education Act (IDEA). Students will differentiate between typical and atypical or exceptional development, analyze the differing abilities of children with physical, cognitive, health/medical, communication, and/or behavioral/emotional disorders, and work collaboratively with community and professional resources. Students will utilize an individual education plan, adapt curriculum to meet the needs of children with developmental differences, and cultivate partnerships with families who have children with developmental differences.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe types of programs and interventions
Examine differing abilities
Evaluate authentic assessments
Explain family involvement in a developmental plan for their child
Adapt activities for children with special needs
Explain adaptations for learning environment and curriculum for children with differing abilities
Critique materials to ensure acceptance of all children's gender, family, language, culture, and special needs
Examine teaching practices that support children with variations in learning styles, ability, and special needs
Analyze individualized planning for children with special needs
Design curriculum goals to meet unique developmental characteristics of children

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CDEV 2016 - Leadership in Early Childhood (3)

The student will discuss personal and professional reasons for becoming a teacher, ways to advocate in this

profession and develop a plan for continuous education and professional development. Students will improve skills in working with others by learning strategies for team building, coping with stress, and problem-solving. Students will study professional ethics.

Prerequisite: Required - ENGL2121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore the National Association for the Education of Young Children (NAEYC) Code of Ethics
Analyze teacher roles
Evaluate accreditation process
Demonstrate teamwork
Summarize leadership
Demonstrate professional behavior
Advocate for an early childhood issue
Examine professional resources
Develop a professional development plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CDEV 2075 - Working with Diverse Families and Children (3)

The student will examine how to work with many types of families. The student will investigate the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the concepts of belonging and family connectedness
Analyze how family, culture and society impact children
Communicate positively with families
Analyze diverse family systems
Compare theories of family dynamics and relationships
Summarize how to support families in assessing educational and parenting options
Examine community resources and services
Evaluate how a child’s learning in influenced by individual experiences, prior learning, culture, and community values
Assess how to dehumanize bias, discrimination, prejudice, and institutional oppression

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CDEV 2125 - Infant/Toddler Development and Learning (3)

The student will examine infant and toddler development as it applies to an infant or toddler setting. Students will integrate strategies that support diversity and anti-bias perspectives and examine research-based curriculum models. They will analyze development and examine culturally and developmentally appropriate environments for infants and toddlers. For this course students should either be currently working with infants or toddlers or have consistent access to a group of infants or toddlers.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine developmental characteristics of infants and toddlers
Examine characteristics and roles of infant/toddler caregivers
Select parent and caregiver partnership strategies
Evaluate an infant/toddler environment
Evaluate toys that promote development
Evaluate role of play in learning
Examine role of culture in development
Investigate daily routines
Summarize strategies for working with infants and toddlers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CDEV 2200 - NOCTI Early Childhood Exam (0)

The NOCTI Early Childhood Care and Education examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: CDEV1725 to be taken concurrently

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

CDEV 2230 - Preschool Development and Learning (2)

The student will study caregiving methods for preschool children in either home or center-based settings. Activities and materials that nurture children`s development will be explored. The student will describe characteristics of a developmentally appropriate program as well as plan preschool curriculum. For this course students should either be currently working with children or have consistent access to a group of preschool children.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine preschool environments
Analyze guidance techniques
Summarize the importance of play
Examine the role of the teacher
Examine curriculum development
Plan developmentally appropriate activities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CDEV 2255 - Schoolage Development and Learning (2)

The student will study caregiving methods for school-age children in either home or center based settings. The student will identify components of a developmentally appropriate program. Activities and materials that nurture children's development will be explored. The student will also examine new teaching strategies that are effective with school age children. For this course students should either be currently working with children or have consistent access to a group of schoolage children.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine development of school age children
Evaluate program support for parents
Analyze guidance techniques
Plan developmentally appropriate activities
Summarize school age play
Research community resources and services

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CDEV 2300 - Multicultural Learning Experiences (2)

The student will examine multicultural and anti-bias learning experiences for children. Students will integrate knowledge of child development, environments and teaching methods to promote and enhance multiculturalism and respect for all in a classroom or setting.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine the impact of diversity in a classroom
Examine types of diversity observed in a classroom
Examine history and methodology of anti-bias education
Assess anti-bias learning experiences
Plan an anti-bias classroom environment
Implement anti-bias learning experiences

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CDEV 2500 - Introduction to Language and Literacy (3)

Students will integrate knowledge of children's language and literacy development, learning environments and teaching strategies to select, plan, present, and evaluate literature experiences to children of different abilities and diverse backgrounds. For required course activities students are expected to arrange observations, and present activities with a group of children between the ages of 3 and 8.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine language development
Investigate receptive language experiences
Investigate expressive language experiences
Demonstrate how to respect children's cultures and home languages
Analyze how to expand children's speech
Plan creative expression activities
Practice printing skills and print awareness
Create pre-reading and reading opportunities
Prepare listening activities
Prepare language experiences for use in the child's home
Evaluate a literacy environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

CHEM - Chemistry

CHEM 2000 - Introduction to Chemistry (4)

This course is intended as a broad introduction to Chemistry. This is a combination lecture and laboratory class designed to prepare students for further study in biology, chemistry, physics courses and for engineering technology. Topics covered include the scientific method, atomic structure, the periodic table, bonding, acids and bases, nomenclature, equations, stoichiometry, gas laws, oxidation and reduction. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on math assessment test OR MATH1500

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the classification of matter
Examine the structure of elements and chemical compounds
Classify chemical reactions
Apply the periodic table of elements to predict trends
Solve chemical equations using stoichiometry and chemical laws
Classify the bonding in compounds and molecules
Define the steps involved in the scientific method
Synthesize chemical concepts and experimental methods
Formulate hypotheses
Document experimental data from virtual lab experiments in accordance with proper scientific technique
Identify precision and accuracy, significant figures and scientific notation
Identify the uses of chemistry in our environment and everyday life
Collect data using a variety of laboratory equipment
Write lab reports
Analyze data
Exhibit safe laboratory practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

CHEM 2201 - General, Organic, and Biological Chemistry Foundations (4)

This course is intended as a broad introduction to general, organic, and biochemistry. Topics covered include the scientific method, measurements, atomic structure, radioactivity, ionic and covalent compounds, reactions, oxidation-reduction, solutions, acids and bases, organic compounds and biological macromolecules. This is recommended for students intending to enroll, or already enrolled in, the health sciences programs. This course includes two hours of required lab per week. The laboratory introduces students to safe handling of chemicals, appropriate use of labware, and transcription of observations and data. Attendance in the week 1 lab safety session is mandatory.

Prerequisite: Recommended: Qualifying score on math assessment test OR MATH1500

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use physical and chemical properties to explain the structure of matter from macroscopic to subatomic levels
Describe the types of chemical bonds in compounds
Compare different types of chemical reactions
Rationalize the occurrence of chemical reactions from a thermodynamic standpoint
Identify organic functional groups found in biological molecules
Explain the physical and chemical influence in biological systems based on the reactivity of organic functional groups
Explain the main metabolic pathways in humans
Identify the relationships between chemistry and nutrition, disease and pharmacology
Complete quantitative problems involving unit conversions, chemical equations and formulas
Apply appropriate laboratory ways and means

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

CMAE - 360 Programs-Center for Mfg & Applied Eng

CMAE 1502 - 360 Technical Mathematics (3)

This is an introductory technical math course. The course is for students who have basic math skills and for those who need basic technical math concepts. The primary goals of this course are to help individuals acquire a solid foundation in the algebra and geometry used in a technical setting. This course will show how these skills can model and solve authentic real-world problems.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901 and Qualifying score on math assessment test OR MATH0950

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve practical problems using correct order of operations, fractions and percent, units of linear measure, area and volume, signed numbers, metric system, roots and exponents
Solve practical problems in technical algebra concepts that include operations of polynomials and monomials, addition, subtraction, multiplication and division principles of equality, manipulating equations, formulas, ratios, and proportions
Solve practical problems in technical geometry concepts that include lines and angles, angular measurement, types of triangles, interior angles of a triangle, areas of geometric shapes, characteristics of geometric shapes,

circumference, radius and diameter of circles, and the Pythagorean Theorem
Apply critical thinking skills to solve a variety of technical math problems
Utilize a systematic approach to problem solving
Demonstrate the ability to meet deadlines for assignments and tests
Use a scientific calculator to solve technical math problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CMAE 1506 - 360 Introduction to Computers (2)

This is an introductory course in Microsoft Office computer applications for technical fields. The primary goal of this course is to help individuals acquire a hands-on working knowledge of current personal computer applications including word-processing, spreadsheets, database, presentation, and internet browser software.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compose technical documents using a word-processing application
Sort and query database information
Create charts and graphs to clearly summarize data
Construct a professional level multi-media presentation
Utilize internet browser software to find credible information
Demonstrate professional email etiquette
Utilize email applications to manage and schedule a business calendar

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

CMAE 1510 - Print Reading (2)

This course will give students an understanding of basic mechanical drawing principles. Topics include the alphabet of lines, arrangement of views, orthographic projections, scaling, dimensioning, tolerancing, and symbols. Students will read and interpret mechanical drawings.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret line conventions and lettering
Evaluate drawings based on information in title block, parts list, and notes
Interpret multi-view drawings
Determine tolerances and limits on drawing dimensions
Interpret assembly drawings
Correlate drawing types to manufacturing processes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 2 lab: 0

CMAE 1514 - Safety Awareness (2)

This course aligns with the Manufacturing Skill Standards Council's (MSSC) assessment and certification system for Safety. The curriculum is based upon federally endorsed national standards for production workers including Occupational Safety Health Association (OSHA) standards relating to personal protective equipment, Hazardous Material (HAZMAT), tool safety, confined spaces, and others.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe and effective workplace
Identify proper environmental waste disposal practices
Understand procedures for variety of emergency situations
Identify unsafe conditions and corrective actions in the workplace
Choose correct personal protective equipment for workplace environment
List processes & procedures that support safety in the workplace
Understand applicable OSHA requirements for maintenance, installation, and repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

CMAE 1518 - Manufacturing Processes and Production (2)

This course aligns with the Manufacturing Skill Standards Council's (MSSC) assessment and certification system for Manufacturing Processes. The curriculum is based upon federally-endorsed national standards for production workers emphasizing lean manufacturing principles, basic supply chain management, communication skills, and customer service.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the voice of the customer
Determine resources available for the production process
Select equipment for the production process
Utilize job assignments to meet production goals
Analyze work flow of team members and work groups to meet production goals
Utilize lean manufacturing principles to communicate and meet customer requirements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

CMAE 1522 - Quality Practices (2)

This course aligns with the Manufacturing Skill Standards Council's (MSSC) assessment and certification system for Quality Practices. The curriculum is based upon federally-endorsed national standards for production workers. Emphasis is placed on Continuous Improvement concepts and how they relate to a quality management system. Students will be introduced to a quality management system and its components. These include corrective actions, preventative actions, control of documents, control of quality records, internal auditing of processes, and control of non-conforming product.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate internal quality audit practices
Understand calibration of gauges and other data collection equipment
Apply key principles of quality systems including Lean, 6 Sigma, and TQM
Apply process control practices for quality assurance
Document the results of quality tests
Communicate quality problems
Choose corrective actions to restore or maintain quality
Evaluate outcomes and trends to improve quality and processes
Identify fundamentals of control documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

CMAE 1526 - Maintenance Awareness (2)

This course aligns with the Manufacturing Skill Standards Council's (MSSC) assessment and certification system for Maintenance Awareness. The curriculum is based upon federally-endorsed national standards for production workers. The course introduces the concepts of total productive maintenance and preventative maintenance with the fundamental principles of lubrication, electricity, hydraulics, pneumatics, and power transmission systems.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Understand the concepts of preventative maintenance
Interpret monitoring indicators for optimal equipment performance
Identify fundamental principles of lubrication, electricity, hydraulics, pneumatics, and power transmission systems
Identify potential maintenance issues with production equipment
Understand documentation within a maintenance plan
Understand the system components of total productive maintenance (TPM)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

CMAE 1528 - 360 Career Success Skills (1)

This is an introductory career success skills course. The primary goals of this course are to help individuals acquire a solid foundation in the basic skills for a successful career. This course will identify the skills important to businesses and help the student assess his/her level of skill. The course will provide suggestions for how the student can improve his/her level of skill.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Characterize appropriate and inappropriate professional behavior
Evaluate areas of personal strengths and weaknesses related to a successful career
Identify ways to discourage inappropriate professional behavior in the workplace
Define the skills needed to be a productive positive employee for a business
Identify ways to be responsible and accountable in the workplace

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

CMAE 1550 - DC Power (3)

This course covers the basic principals in DC electric circuits including series, parallel and complex circuit analysis, Ohm's Law, meters, conductors, insulators, resistors, batteries, and magnetism. The use and understanding of test equipment for circuit analysis is stressed.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the courseDemonstrate basic safety procedures designed to protect the learners, components, and equipment
Describe basic concepts of electricity
Define Ohm's law and use it to solve for resistance, current, and voltage

Describe various types of resistive materials and how resistors are used in electrical circuits
Analyze series and parallel current paths and the laws that govern them
Identify and solve problems associated with both, series and parallel circuits
Construct and verify operation of DC circuits
Accurately read analog and digital multi-meters and install them properly in circuits so they may be used for circuit analysis
Define the principles of magnetic fields, electromagnetic induction
Identify voltage sources and describe their proper application

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CMAE 1552 - AC Power (3)

This course covers investigation of alternating current and its behavior in resistive, inductive and reactive series, parallel, and series/parallel circuits; use of test instrumentation; and electromagnetic induction.

Prerequisite: CMAE1550 or equivalent course

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate basic safety procedures designed to protect the learners, components, and equipment
Perform calculations using Pythagorean Theorem, the laws of Sine and co-sine, and vector analysis, in relation to electric circuits
Analyze the principles of AC generation and the phase relationships in AC circuits
Define inductance and analyze the effects of inductor in AC circuits
Define capacitance and analyze the effects of capacitor in both AC and DC circuits
Analyze alternating circuits containing resistance, inductance, and capacitance and the laws that govern them
Construct and make measurements for AC circuits from simple to complex
Describe the relationship between true power and apparent power
Identify and solve problems associated AC circuits
Examine transformer applications and the different types of transformers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CMAE 1554 - Digital Electronics (3)

This is a first course in Digital Electronics. The primary goals of this course are to help individuals acquire a fundamental knowledge of digital electronics, Boolean algebra, digital devices, analog to digital conversion and digital to analog conversion, and how to apply their knowledge and skills through problem solving, simulation and practical projects.

Prerequisite: Qualifying score on the reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Draw and read digital logic and schematic diagrams
Write Boolean logic statements
Read and interpret truth tables
Design and build basic digital logic decision and interface circuits
Design and build basic timing, counter circuits
Design and build basic digital to analog and analog to digital circuits
Convert between binary, octal, hexadecimal, and decimal number systems
Use a Programmable Logic device to implement a Boolean logic statement

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

CMAE 1556 - Analog Circuits (3)

This course covers diodes, power supplies, transistor operation, biasing, and specifications along with amplifier configuration and applications. It also covers operational amplifier operation, applications, and related circuitry. Troubleshooting, design, and circuit analysis are emphasized.

Prerequisite: CMAE1552 or equivalent course

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit shop safety procedures
Demonstrate the correct use of test equipment in the lab
Analyze and construct diode circuits
Analyze and construct power supply circuits
Analyze and construct transistor amplifier circuits

Analyze and construct solid state oscillator circuits
Analyze and construct op amp circuits
Analyze and construct SCR, DIAC, and TRIAC circuits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

CMAE 1558 - Motor Control (3)

This course introduces the learner to motor control components and provides them with a basic knowledge of control circuitry. The learner will build on his/her experiences from Basic Electricity by designing, building, and troubleshooting more complex circuits. Devices such as contactors, motor-starters, relays, timers, mechanical, and proximity switches are used. Electronic motor controls and programmable devices such as variable frequency drives are introduced in this course.

Prerequisite: CMAE1552 or equivalent course

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to identify, select and install the correct devices for the control of machine operations
Identify control circuit and logic symbols and implement appropriate documentation procedures
Compare the design and operation of various motors
List the conditions of starting and stopping, speed control, and protection of electric motors
Draw the wiring diagram symbols and explain the operation of various pilot devices including push buttons, pressure switches, float switches, flow switches, limit switches, and temperature switches
Develop a schematic and a wiring diagram to obtain a specific control function, connect the circuit, test and troubleshoot the circuit
Describe motor maintenance practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

COMM - Communications

COMM 1050 - Communication in the Workplace (2)

This course focuses on the concepts of human communication and the styles of communications used in personal, social and professional environments. Students will learn the characteristics and process of interpersonal communication including perception, speech and language, non-verbal behaviors, listening and feedback, the ethics of interpersonal communication and relationship development and maintenance.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define process of communication
Apply nonverbal communication principles
Apply perception checking skills
Use responsible verbal communication
Identify gender communication styles
Compare cultural differences
Identify effective listening skills
Evaluate appropriate interpersonal behavior
Apply constructive conflict management

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 2

COMM 1060 - Career Portfolio (3)

This is a combination lecture and workshop class that results in the compilation of a portfolio. The portfolio consists of a resume, cover letter, reflective self-analysis essay, and a collection of paper and/or electronic artifacts ready to present to possible employers.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write reflective essay free of grammatical and spelling errors
Write professional cover letter
Compile four artifacts that best represent students development in program area

Evaluate peer writing assignments using critical thinking skills
Present portfolio at networking meeting
Design personal resume
Connect with a professional mentor
Summarize personal professional development

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

COMM 2020 - Intercultural Communication (3)

This course provides training in understanding the importance of intercultural communication and theories. Topics covered include: definitions of communication, definitions of culture and diversity of cultural patterns, cultural variables influencing communication, such as language, non-verbal communication, perception, values, and beliefs; factors that facilitate or inhibit intercultural communication competence; and examination of American culture in comparison to other cultures.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Understand the model of communication
Define the major components of culture
Explore cultural self-awareness and other-culture awareness
Acquire knowledge, skills and attitudes that increase intercultural competence
Recognize how people from other cultures perceive Americans
Gain a critical perspective on local/global issues
Perform appropriate perception checking skills
Understand the importance of context (social, cultural, historical and political dimensions) in intercultural relations
Expand student’s range of verbal and nonverbal skills
Recognize the influence student’s own culture has had on their self concept

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 1 & 7.

COMM 2050 - Interpersonal Communication (3)

This course focuses on the practical and theoretical concepts of human communication and the styles of communication used in academic, social and professional environments. Students will learn the characteristics and process of interpersonal communication including perception, speech and language, non-verbal behaviors, listening and feedback, conflict recognition and resolution, small group dynamics, the ethics of interpersonal communication and relationship development and maintenance. In this course you will learn to communicate more effectively in all settings.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the elements of the interpersonal communication process
Analyze the role of verbal and nonverbal communication in various interpersonal episodes and diverse contexts
Develop skill sets in active listening and providing constructive feedback
Identify perception barriers and apply appropriate perception checking skills
Analyze constructive conflict management techniques
Articulate the role of interpersonal processes in the development and maintenance of relationships
Identify barriers that impede effective interpersonal communication
Engage in reflection of one's own interpersonal communication strengths and weaknesses
Demonstrate responsible and owned language in interpersonal contexts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 1 & 7.

COMM 2060 - Small Group Communication (3)

This course focuses on the theoretical and practical application of skills used in a small group setting. Students will participate in groups, completing group projects and analyzing group interaction. Emphasis will be on group formation and development, effective leadership, decision making in groups, active participation, conflict resolution, planning and conducting meetings. Gathering information, argumentation and preparing agendas and minutes will also be practiced.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Analyze how groups develop using theories of group growth and development
Develop skill sets in applying principles and practices, including verbal and nonverbal skills in small group communication
Identify components of small group communication
Demonstrate effective listening skills with the ability to paraphrase group messages
Manage the interpersonal dynamics of small group communication
Identify group roles and principles of leadership in the group process
Develop skill sets with group problem solving and decision-making to achieve desired goals
Analyze small group communication and barriers to effective communication
Assess group conflicts using appropriate small group communication tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 1 & 2.

COMM 2130 - Public Speaking (3)

In this course, students will learn organization, preparation, and delivery skills to become effective communicators in both individual and group presentations. Emphasis will be on audience analysis, research and organization, speech construction, and delivery techniques. Listening and evaluation skills will also be practiced.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week ofthe course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the components of speeches
Demonstrate appropriate topic selection, audience analysis, organization, and content development in a speaker-audience setting
Evaluate sources of information and support materials
Create preparation and delivery outlines for speeches
Document support material using correct citation format
Perform informative and persuasive messages
Demonstrate effective verbal and nonverbal delivery techniques that are well suited to the occasion and audience
Utilize appropriate research strategies to discover and ethically integrate supporting materials from diverse sources and points of view
Demonstrate the ability to provide feedback on public discourse

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 1.

CPLT - Computer Literacy

CPLT 0900 - Keyboarding and Computer Basics (2)

This course will introduce the non-computer user to the following basic computer concepts: booting up and shutting down the computer; sending and receiving email; and creating, saving, and printing short Microsoft Word documents. Students will also learn basic keyboarding skills.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course: Power up the computer Shut down the computer Open email Send email Access email attachments Keyboard accurately Open Microsoft Word Create a Microsoft Word document Save a Microsoft Word document Print a Microsoft Word document

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CPLT 1000 - Computer Keyboarding (2)

Nearly every career requires the use of a computer. By practicing outside of class and participating in classroom practice sessions, students will develop basic keyboarding skills. Emphasis will be on learning the `touch` method for using both the keyboard and the numeric keypad. The keyboarding goal will be the attainment of a minimum rate of 20 net words per minute on alphabetic copy. (Net words per minute is determined by subtracting 2 for each error from the gross words per minute.) It will be necessary to have access to a computer outside of class. A student computer lab is available on each campus.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use the touch method for keyboarding

Key 20 net words per minute
Key with 5 or fewer errors on a 3-minute timing
Enter numeric keypad data at a rate of 80 digits per minute
Key a business letter and report using Microsoft Word
Print Word documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CPLT 1005 - Advanced Keyboarding and Document Processing (3)

This advanced keyboarding course is designed to increase keyboarding speed and accuracy. Students will improve keyboarding techniques with exercises emphasizing the touch method technique. Document processing will include the production of business letters, memorandums, reports, agendas, minutes and itineraries. It will be necessary to have access to a computer outside of class to complete assignments. A student computer lab is available on each campus. A keyboarding test will be administered in the classroom the first session to confirm course eligibility.

Prerequisite: Qualifying score on keyboarding assessment test OR CPLT1000 and qualifying score on computer literacy assessment test OR CPLT1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in thecourse:
Use the touch method of keyboarding
Key 40 net words per minute on a 3-minute timing
Key business style letters and envelopes using Microsoft Word
Key agendas and minutes using Microsoft Word
Key reports using Microsoft Word
Key interoffice memorandums using Microsoft Word
Key itineraries using Microsoft Word
Proofread Word documents
Edit Word documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CPLT 1095 - Office 365 Cloud Apps (1)

This course introduces a Hennepin Technical College student to cloud applications using the student's My.HennepinTech.edu account. Students will explore online productivity tools and learn how to utilize collaborative online features. It is necessary to have access to a computer and the internet outside of class in order to complete collaborative assignments. A student computer lab is available on each campus.

Prerequisite: Basic computer skills and understanding of Internet strongly recommended for successful course completion

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Communicate using My.HennepinTech.edu account
Manage cloud storage
Create personal notes for mobile retrieval
Construct online documents, spreadsheets and presentations
Collaborate online for team presentation
Differentiate Office cloud vs Office desktop apps

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

CPLT 1100 - Computer Essentials (3)

This course introduces the student to the basics of personal computer use, including the operating system and an overview of Microsoft Office including Word, Excel, PowerPoint, and Email using Outlook. Learn about the Computer, Internet, and digital literacy in today's global environment. It will be necessary to have access to a computer outside of class in order to complete the assignments. A student computer lab is available on each campus.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT0900 or CPLT1000 or ESOL0841 and Qualifying score on reading assessment test OR ENGL0901 or ESOL0832

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Send email messages
Use search engines to obtain information
Create documents using Word
Create worksheets and charts using Excel

Create PowerPoint presentations
Edit documents
Print documents
Demonstrate knowledge of computer terminology
Learn to utilize the Internet
Learn the basics of Computer Hardware

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CPLT 1200 - Introduction to Macintosh (3)

This is an introductory course intended to give the student basic knowledge of the Macintosh operating system as well as a general overview of computer components, Microsoft Office Suite for Mac, and (iLife) Apple's Creativity applications. This course will allow the student to explore basic operating system functions, computer components, terminology, file management hierarchy, storage devices, and hardware/software integration. Included in the curriculum is Word's basic editing techniques, tabs, indents and style sheets; PowerPoint's industry standard presentation package and entry level Excel spreadsheet skills. Apple's powerful iLife applications include Photos, iMovie, and GarageBand.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT0900 or CPLT1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate operating system components
Identify storage devices
Prepare files and folders
Describe word processing software functions
Utilize document formatting
Construct spreadsheet document
Compare equipment features
Differentiate iLife applications
Summarize presentation software
Acquire resources from the Web

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

CULA - Culinary Arts

CULA 1000 - Culinary Calculations (1)

Functions with whole numbers, fractions, decimals, and percentages are covered and applied to food service problems. Special problems of menu pricing, food costs and their percentages, recipe conversions, labor cost and payroll deductions.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and qualifying score on math assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Review basic arithmetic, whole numbers and symbols of operation
Perform recipe yield conversions
Perform the process of recipe costing
Determine selling price of menu items
Calculate food costs, beverage costs, labor costs and percentages
Describe a profit and loss statement

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

CULA 1106 - Culinary Culture and Industry (2)

This course is designed to introduce the foodservice industry, its history, organization, the importance of safety/sanitation and the care and use of kitchen tools and equipment. Students will become familiar with the organizational structure and basic functions of departments within hospitality and foodservice establishments. It will also include basic product identification, recipe structure, menu planning, plus cooking methods.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define food service industry segments
Explain kitchen safety and sanitation rules
Identify professional kitchen equipment
Explain various cooking methods
Identify professional foodservice organization structures
Define food service terms
Calculate recipe costs
Describe various menu structures
Identify the pre-preparation process
Demonstrate the use of professional cutlery
Identify basic foods
Identify units of weight and measure

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CULA 1116 - Sanitation and Safety (1)

To develop an understanding of the basic principles of sanitation and safety and to be able to apply them in the foodservice operations. To reinforce personal hygiene habits and food handling practices that protects the health of the consumer. The culmination of the course is the Food Managers Certification exam.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define the fundamentals of good personal hygiene
Identify microorganisms which are related to food spoilage and food-borne illnesses
Identify the seven HACCP Principles and the critical control points during all food handling processes as a method for minimizing the risk of food-borne illness
Demonstrate acceptable procedures when preparing potentially hazardous foods to include time/temperature principles
List common causes of typical accidents and injuries in the foodservice industry and outline a safety management program
Explain Material Safety Data Sheets (MSDS) and their requirements in handling hazardous materials

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

CULA 1126 - Baking and Pastry (4)

This course is designed to give the student fundamental knowledge, skills and understanding of baking methods and techniques. Topics covered are yeast breads, quick breads, cakes, pies, cookies, various pastries, desserts and dessert sauces.

Prerequisite: CULA1000, CULA1106, and CULA1116 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit professional, safe and sanitary work practices
Define baking terms
Discuss equipment and utensils used in baking and their proper use and care
Demonstrate proper selection of ingredients, equipment and utensils for specific application
Apply basic math skill to recipe conversions
Demonstrate proper scaling and measurement techniques
Describe properties and function of various ingredients
Describe the variety of mixing methods utilized to produce bakery products
Prepare a variety of yeast-leavened and quick-breads
Make a variety of pies and tarts
Produce a variety of types of cookies
Prepare a variety of cakes
Demonstrate basic icing and decorating techniques
Prepare a variety of laminated dough products
Prepare a variety of pate choux products
Prepare a variety of meringue products
Prepare a variety of creams, custards, puddings and related sauces
Demonstrate the presentations of baked goods and desserts
Evaluate the quality of baked goods and desserts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1136 - Garde Manger and Entremétier (4)

This course is designed to give the student fundamental knowledge, skills and understanding in the preparation of various types of salads, cold dressings and sauces, fruits, vegetables and starch products, sandwiches, canapés and hors d`oeuvres.

Prerequisite: CULA1000, CULA1106, and CULA1116 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit professional, safe and sanitary work practices
Demonstrate knife skills, hand tool and equipment operation, emphasizing proper safety techniques
Utilize standard weights and measures to demonstrate proper scaling and measurement techniques
Describe various food ingredients to include fruits, vegetables, starches, legumes and grains
Use various cooking methods and techniques as appropriate to the specific foods
Explain the importance of presentation and garnishing of various foods
Prepare a variety of fruits, vegetables, starches, legumes and grains
Prepare a variety of salads with appropriate accompaniments
Prepare a variety of hors d'oeuvre, appetizers, canapés and basic garnishes
Demonstrate food presentation techniques using a variety of plates, platters and trays
Prepare a variety of hot and cold sandwiches
Produce decorative centerpieces using fruits and vegetables
Use herbs, spices, oils and vinegar, condiments, marinades and rubs
Present a variety of prepared forcemeat products
Describe the use of a variety of dairy products.
Evaluate by taste and presentation various foods to determine their quality

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1156 - Classic Culinary Techniques (4)

This course is designed to give the student fundamental knowledge, skill, and understanding of protein fabrication, stocks, sauces, soups, meat, poultry, fish, shellfish cookery, and breakfast food preparation techniques. This course also serves as a review of prerequisite courses in sanitation, math, baking, and garde manger/entremétier preparations.

Prerequisite: CULA1000, CULA1106, and CULA1116 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit a commitment to professionalism in the culinary arts
Evaluate the quality of raw and prepared meats, seafood, poultry, and variety meats
Prepare a variety of food products commonly served at breakfast
Perform basic fabrication tasks with meat, poultry, seafood and variety meats
Demonstrate the preparation of various stocks

Use various thickening agents
Demonstrate the preparation of a variety of soups from each category
Prepare the five grand sauces and their small sauce derivatives
Demonstrate moist, dry and combination cooking methods
Prepare meats, poultry, and fish to the correct doneness
Demonstrate a variety of cooking methods
Use various methods to preserve foods including brining, salting, curing, and smoking
Prepare written requisitions for production requirements
Demonstrate the preparation of baked goods, salads, appetizers, vegetables, starches, legumes and grains
Evaluate the taste and visual presentation of various food items

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1165 - Basic Sugar Work (2)

This course is offered as Pass/No Credit (P/NC). This course is designed to give the student knowledge, skill and understanding in the various types of sugar work.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate quality assurance standards
Apply safety standards
Identify tools and equipment
Identify sugar work ingredients
Understand use of silicone molds
Demonstrate showpiece symmetry and stability
Apply ability to pull sugar bands
Demonstrate blowing and casting sugar showpieces
Demonstrate gum paste recipes
Apply taught techniques to prepare cold porcelain showpieces
Demonstrate time management, skill and ability in all three areas of study
Identify colorings for sugar work
Understand use of straw sugar

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CULA 1301 - Culinary Arts Nutrition (2)

The study of nutrition principles and the relationship of food to health from the perspective of culinary professionals. Students become familiar with the structure, function, and sources of nutrients including protein, carbohydrates, fats, vitamins, minerals, and water. Current dietary guidelines, energy balance, food fads and trends are discussed. Students prepare traditional and nutritionally modified recipes.

Prerequisite: CULA1116

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify current USDA My Pyramid principles and food groups
List the nutrient contributions of each food group
Develop recipes and menus using dietary guide-line recommendations, food guides and food labels
List the primary characteristics, functions and sources of vitamins, water and minerals
Describe the process of human digestion
Identify common food allergies and determine appropriate substitutions for gluten, sugar, and lactose free diets
Demonstrate cooking techniques and storage principles and portion sizes for maximum retention of nutrients and effective weight management
Discuss contemporary nutritional issues including weight management, exercise, vegetarianism, heart healthy menus and religious dietary laws

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CULA 1321 - Decorative Work and Showpieces (2)

Principles of decorative product preparation and the presentation of various food mediums including but not limited to ice carving, cake decorating and confectionery work. Food styling factors such as balance, design, color, and the techniques of garniture used in the professional kitchen will be emphasized.

Prerequisite: CULA1116 and CULA1126

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate appropriate safety and sanitation practices
Identify examples of showpieces/centerpieces
Produce decorative showpieces/centerpieces using a variety of food mediums including chocolate, sugar, dough, tallow and ice
Use carving, molding, and modeling equipment and tools
Identify three-dimensional shapes utilized in sculpturing
Demonstrate appropriate mise en place for projects
Decorate various pastry/confectionery items
Demonstrate food display techniques to enhance presentations
Exhibit teamwork with a high level of professionalism

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CULA 1325 - Menu Planning (2)

This course is designed to apply the principles of menu planning and layout to the development of menus for a variety of types of facilities and service.

Prerequisite: CULA1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
List basic menu planning principles
Identify principles of menu layout and design
Create menu item descriptions following established truth-in-menu guidelines
Apply principles of nutrition to menu development
Determine menu prices utilizing proper cost controls
Plan a la carte, cycle, ethnic, banquet and buffet menu
Discuss importance of sales mix and its' impact on profit
Develop a menu layout for a foodservice operation
Discuss the availability of foods for seasonal menus
Discuss menu planning resources

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CULA 1335 - Purchasing and Cost Control (2)

This course is designed to develop an understanding of the overall concept of purchasing and receiving practices in quality foodservice operations. Methods to control costs while maintaining strict quality standards through effective management practices are examined.

Prerequisite: CULA1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe various formal and informal purchasing methods
Analyze market fluctuations and product cost
Discuss legal and ethical considerations of purchasing
Explain regulations for inspecting and grading of various food products
Write a bid specification
Evaluate received goods to determine conformity with user specifications
Conduct yield and quality tests on various products
Inventory food and non-food items on hand
Describe proper procedures of issuing product according to requisition
Describe current computerized systems for purchasing and inventory control
Explain methods to control cost of food, beverage, labor, supplies and services
Describe cost, volume and profit relationships

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

CULA 1525 - Dining Experience and Expectations (4)

This course examines the detailed operation of a restaurant dining room. Topics include types of table service, dining room organization and table settings, staffing, responsibilities of dining room personnel, customer sales and service. Includes practical experiences in a public dining room.

Prerequisite: CULA1106 and CULA1116

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Demonstrate the general rules of table settings and service
Describe American, English, French and Russian Service
Perform service methods such as banquets, buffets, catering and a la carte
Describe the functions of dining service personnel
Discuss training procedures for dining room staff
Discuss procedures for processing guest checks using current technology
Demonstrate an understanding of guest service, the handling of difficult situations and the ADA
Explain inter-relationships and work flow between dining room and kitchen operations
Discuss sales techniques for service personnel including menu knowledge and suggestive selling
Create room arrangements to provide optimum guest satisfaction
Exhibit knowledge and skills in tableside food preparation and service
Develop human relations skills necessary for working in a front of the house position

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

CULA 1530 - Advanced Baking and Pastry (4)

This course is designed to give the student advanced knowledge, skills and understanding of baking methods and techniques as done a restaurant setting. Topics covered are yeast breads, quick breads, cakes, pies, cookies, various pastries, desserts and dessert sauces.

Prerequisite: CULA1116 and CULA1126

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare food following proper sanitation practices and standards
Apply basic math skill to recipe conversions in a production setting
Demonstrate proper selection of equipment and utensils for specific application
Explain the variety of doughs and batters used in a quantity food production
Select appropriate mixing methods to produce various items
Use a baker's balance scale
Make yeast products in volume
Make quick breads in volume
Make cakes and icings in volume
Demonstrate advanced icing and decorating techniques
Prepare cookies, pies and pastries in volume
Prepare creams, custards, puddings, syrups and sauces
Prevent or retard the staling of baked items
Make frozen desserts such as ice cream, sherbet or sorbet
Demonstrate the presentations of baked goods and desserts in restaurant setting
Assess the quality of baked goods and desserts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1535 - Advanced Garde Manger and Entremétier (4)

This course is designed to give the student advanced knowledge, skills and understanding in the preparation of various types of salads/salad dressings, vegetable and starch products, sandwiches, canapés and hors d`oeuvres in restaurant production setting.

Prerequisite: CULA1116 and CULA1136

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Select tools and equipment used in garde manger, emphasizing safety and sanitation procedures
Determine work station needs for pre-preparation, monitor throughout shift, and stock as needed
Convert recipes
Demonstrate organizational skills needed to prepare foods in volume production
Obtain ingredients for recipes and weigh and measure
Identify table side salads
Select and cut fruits, vegetables, and tubers
Cook fruits, vegetables, tubers, farinaceous products, cereals, grains, and beans
Prepare a variety of hors d'oeuvre, appetizers, canapés and basic garnishes
Make various salads and cold entrees
Make cold sauces and dressings
Make basic and complex sandwiches
Use cheese as an ingredient in recipes
Demonstrate food presentation techniques using a variety of plates, platters and trays
Produce decorative centerpieces using a variety of food mediums
Evaluate the taste and visual presentation of various food items

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1540 - Advanced Culinary Techniques (4)

This course is designed to give the student advanced knowledge, skill, and understanding of stocks, sauces, soups, meat, poultry, fish, shellfish cookery, and breakfast food preparation techniques in a restaurant production setting.

Prerequisite: CULA1116 and CULA1156

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use knives with precision and accuracy
Prepare breakfast meats, eggs, cereals, and battered products in a production setting
Determine time-frame for preparing foodstuffs and schedule accordingly
Plate and present food according to standards
Test by taste various foods to be used as meal components
Write standardized recipes
Demonstrate safe and appropriate use of equipment and tools
Monitor items during cooking process
Make and use thickening agents
Make soups, stocks, and sauces
Prepare meat, fish, shellfish and poultry for a la carte and banquet production standards
Prepare various fruits, vegetables, starches and farinaceous items
Complete written requisitions for foodstuffs according to standards
Follow cleaning and sanitation program
Plan production menus that utilize a variety of service styles
Demonstrate various cooking methods and techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

CULA 1700 - Human Relations Management (2)

This course is designed to prepare for the transition from employee to supervisor. To evaluate styles of leadership and develop skills in human relations and personnel management.

Prerequisite: CULA1000, CULA1106, and CULA1116 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe process of management through effective communication skills
Summarize leadership styles and analyze when each is most appropriate
Outline the supervisor's role in decision-making, problem solving and delegation of duties
Compare a variety of training methods
Discuss effective employee training programs which include follow-up training and cross-training
Describe necessity of change and ways of implementing change with the least employee resistance

Evaluate methods of conflict resolution and grievance procedures in union and non-union organizations
Discuss reasons for disciplinary problems and the supervisor's role in handling them
Analyze motivational techniques and problems
Discuss procedures for attitudinal changes
Analyze ways of dealing with stress in the workplace
Discuss legal issues related to managerial decisions including sexual harassment, discrimination, violence/anger and unemployment compensation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CULA 1710 - Beverage Management (2)

This course focuses on the management of both alcoholic and non-alcoholic beverages and the legal and liability issues involved with them. Product knowledge, storing, pricing, merchandising, and serving wines and spirits in restaurant settings are emphasized. The course examines the theory of matching food with wines, beers, and other beverages.

Prerequisite: CULA1000, CULA1106, and CULA1116 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify local, state and federal laws pertaining to the purchase and service of alcoholic beverages
Explain the basic production process for distillation and fermentation
Distinguish wines by grape and/or other fruit variety, country, growing region and production process
Evaluate the relationship of beverages to food
Demonstrate the presentation of beverage
Identify equipment and glassware used for beverage preparation and service
List opening and closing procedures of a beverage operation
Discuss the fundamentals and importance of responsible alcohol service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

CULA 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently.
Organize work schedule.
Follow prescribed procedures.
Demonstrate safety.
Demonstrate initiative.
Integrate previously acquired skills.
Integrate previously acquired knowledge.
Display good judgment.
Demonstrate dependability.
Exhibit professionalism.
Organize work area.
Demonstrate cooperation.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

CULA 2056 - Global Cuisine (4)

This course is intended to give students a better understanding of the cuisines, major and minor, famous and less so, of the different regions of world. It will explore how they arose from their cultures and geographies, what factors influence menu choices in those regions, and what indigenous techniques are used in their preparation. In addition, the course will provide useful information in the search for ingredients in preparing those cuisines.

Prerequisite: Food manager's certificate, current registration to earn one, or instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of the cultures which produces each cuisine
Demonstrate cooking techniques familiar to a variety of world regions
Demonstrate knowledge of the ingredients used in different regions of the world
Participate in discussions of global food and culture
Demonstrate teamwork in the preparation of each session's menu
Evaluate characteristics of regional food & beverage traditions
Demonstrate professionalism in the areas of preparation, clean up and sanitation
Demonstrate understanding of the role of products in the culinary environment
Demonstrate the ability to source produces for a global menu
Design a regional specific menu
Demonstrate the knowledge of the influence climate has on global and regional cuisine
Identify global influences on American cuisine

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

CULA 2075 - Catering (2)

This course is designed to give the student advanced knowledge, skills and understanding of off-premise and on-premise catering as a branch of the hospitality industry. Topics such as party planning, customer service, site preparation, licensure, safety, catering equipment, sanitation, staff scheduling, food preparation and menu development will be discussed.

Prerequisite: CULA1301, CULA1321 CULA1325, CULA1335, CULA1525, CULA1530, CULA1535, and CULA1540. Or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the different types of catering events
Prepare grilled foods
Develop banquet menus with itemized costs
Create catered events on campus
Create a catering contract with a client
Identify local licensure and health regulations
Visit local catering companies for equipment rental needs
Develop staffing schedules for catered events

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

DNTL - Dental Assistant

DNTL 1000 - Dental Team/Practice Management (2)

This course is designed to give the student a fundamental understanding of the characteristics of dentistry. It will include the history of dentistry, its team members, specialties, professional organizations, legal and ethical considerations and the differences between Certification and Licensure. Dental business office procedures are also included. Students will make appointments, complete patient financial records and insurance forms, and realize the importance of good telephone techniques.

Prerequisite: Admission into the Dental Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore the history of dentistry
Examine the responsibilities of the dental health team
Investigate dental organizations
Measure the character of a dental assistant
Characterize the duties of a Certified and Licensed dental assistant
Examine patients' rights
Model dental office procedures
Prepare dental office documents
Demonstrate oral presentation techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

DNTL 1121 - Dental Science (4)

This course is designed to provide information on dental terminology, basic head and neck anatomy, tooth

morphology, oral histology and embryology and the basics of the human body systems. Oral pathology is included and contains a background in the identification, causes, symptoms and transmission of various oral diseases.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define dental terminology
Identify the anatomic features of teeth
Identify tooth annotation
Identify tooth morphology
Explain oral embryology
Explain oral histology
Differentiate oral structures
Identify bones of the skull
Explain the innervation of teeth
Explain blood flow to the teeth
Explain body systems
Identify oral pathological conditions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

DNTL 1140 - Dental Materials (3)

This course will introduce the student to various materials used in dentistry. These include gypsum, waxes, impression materials, cements (protective layers) and restorative materials. The student will learn identification, purposes and properties as well as the proper manipulation/preparation procedure for each. Laboratory equipment, safety measures and lab emergency protocol will be emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Admission into the Dental Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain dental laboratory safety procedures
Describe emergency protocol for the dental laboratory
Compare gypsum products
Explain dental waxes
Manipulate dental impression materials
Produce custom impression trays
Interpret dental cements
Interpret dental liners and varnishes
Identify dental restorative materials

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

DNTL 1160 - Preclinical Chairside Assisting (3)

In this course the student will learn about microbiology, sterilization, monitoring and recording vital signs as well as how to respond to various medical emergencies that may arise in the dental office. The course will emphasize the prevention of disease transmission. The student will learn about anesthesia and pharmaceuticals used in dentistry. Hazardous communication and management in the dental office is also included. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Admission into the Dental Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the basics of microbiology
Demonstrate the principles of disinfection
Demonstrate the techniques of instrument sterilization
Demonstrate concepts of infection control
Identify waterborne diseases present in the dental setting
Examine pharmacology principles
Examine methods of pain control
Differentiate methods of emergency management

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

DNTL 1180 - Chairside Assisting I (4)

In this course the student will identify dental office design, assemble tray set-ups, perform an intra oral examination and complete services rendered. Students gain knowledge in dental supplies, inventory control, equipment and basic dental instruments. Maintenance and safety of dental instruments is evaluated. Practical learning experience will include how to chart the oral cavity, position the dental team and patient, control of moisture in the oral cavity as well as high velocity evacuation techniques. Students will also learn the expanded function of placement and removal of matrix bands.

Prerequisite: Admission into the Dental Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Summarize office design
Illustrate dental chair positioning
Perform High Volume Evacuation (HVE)
Demonstrate isolation procedures
Categorize dental hand instruments
Compare rotary instruments
Differentiate dental handpieces
Organize dental tray set ups
Demonstrate treatment planning
Interpret dental charting
Position dental matrices
Determine inventory systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

DNTL 1200 - Dental Health (2)

This course will assist the student in identifying psychological variables that are significant in dealing with dental patients and co-workers. The student will also study nutrition and its effects on the human body. Emphasis is made on proper oral hygiene techniques and evaluation of the patient`s health care status.

Prerequisite: Successful completion of 1st semester courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine the relationship of diet to dental caries
Create an oral hygiene presentation
Characterizethe risk factors that contribute to periodontal disease
Formulate the components of a preventive dentistry program
Ascertain the type of dental management a medically compromised patient would receive

Explore how nutrition affects the oral cavity
Differentiate motivational techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

DNTL 1220 - Chairside Assisting II (4)

This course is designed to develop skills in four-handed dental assisting, including tray set up preparation. It also will introduce the student to the specialized areas of dentistry and the instruments, materials and procedures needed for each.

Prerequisite: Successful completion of 1st semester courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the delivery of dental care
Demonstrate the role of a clinical assistant
Prepare for local anesthesia
Simulate the role of the dental assistant in restorative dentistry
Examine the basics of prosthodontics
Explain endodontics
Explain periodontal procedures
Examine oral and maxillofacial surgery
Examine orthodontics
Explain pediatric dentistry
Investigate public health dentistry
Use cavity preparation terminology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

DNTL 1241 - Dental Radiology (4)

This course is designed to introduce the student to the basic principles of x-ray production. Biological effects of ionizing radiation and safety procedures are covered. Also included is the exposing, processing, monitoring and evaluating of dental film. The student will gain practical experience in producing intraoral radiographs on typodonts in a clinical setting. Radiation safety policies are practiced and monitored. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Admission into the Dental Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify principles of radiation
Explain factors in image formation in dental radiography
Identify processing techniques
Process dental films
Interpret quality control data
Demonstrate mounting procedures
Differentiate between various types of radiographs
Demonstrate paralleling technique
Demonstrate bisecting technique
Interpret exposure errors
Identify radiographic landmarks
Explain the biologic effects of radiation
Identify radiation safety protocol

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

DNTL 1261 - Expanded Functions (7)

This course is designed for the students to learn and practice the expanded functions in the Hennepin Technical College dental clinics. These procedures are required by the Minnesota State Board of Dentistry to be eligible to take the Minnesota Licensure examination. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Successful completion of 1st semester courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Expose radiographs
Take alginate impressions for study casts
Take appropriate bite registration
Perform dental dam procedure
Apply topical anesthetic
Apply topical fluoride
Describe bleaching techniques
Perform mechanical polishing to clinical crowns
Demonstrate orthodontic separators
Prepare enamel surfaces before orthodontic appliances and sealants
Remove excess bond with hand or rotary instruments
Preselect orthodontic bands
Demonstrate ligatures on orthodontic appliances
Remove excess cement with hand instruments only
Perform pit and fissure sealants
Remove sutures
Demonstrate periodontal dressings
Manipulate temporary restorations
Perform nitrous oxide-oxygen inhalation analgesia

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 4

DNTL 1305 - Externship Seminar (1)

This course is designed to prepare the student for their externship experiences including the knowledge of Minnesota dental laws. Students will attend a weekly meeting at the college to share experiences and review for State and National Board Exams.

Prerequisite: Successful completion of 1st and 2nd semester courses. DNTL1321 and DNTL1325 must be taken concurrently with this course

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the Minnesota Dental Practice Act
Complete the Minnesota Jurisprudence Exam
Prepare for dental assistant board exams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

DNTL 1321 - Clinical Externship I (4)

This course provides the opportunity for the student to perform skills learned in the program and apply them at a partnering dental facility. The dental facilities include general dentistry and specialties such as oral surgery, orthodontics, endodontics, public health or pediatric dentistry.

Prerequisite: Successful completion of 1st and 2nd semester courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adhere to the dental office protocol
Portray a professional image in the dental facility
Demonstrate competence in chairside assisting
Perform the Minnesota Dental Practice Act expanded functions
Demonstrate compliance in infection control standards
Complete required paperwork
Demonstrate front office procedures
Perform laboratory procedures
Complete required externship hours

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 4

DNTL 1325 - Clinical Externship II (4)

This is a partnership between Hennepin Technical College and a dental facility. This course provides the opportunity for the student to perform skills learned in the program and apply them to an employment like environment. This will include general dentistry and specialties such as oral surgery, orthodontics, endodontics, public health or pediatric dentistry.

Prerequisite: Successful completion of 1st and 2nd semester courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adhere to the dental office protocol
Portray a professional image in the dental facility
Demonstrate competence in chairside assisting
Perform the Minnesota Dental Practice Act expanded functions
Demonstrate compliance in infection control standards
Complete required paperwork
Demonstrate front office procedures
Perform laboratory procedures
Complete required externship hours

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 4

DNTL 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently.
Organize work schedule.
Follow prescribed procedures.
Demonstrate safety.
Demonstrate initiative.
Integrate previously acquired skills.
Integrate previously acquired knowledge.
Display good judgment.
Demonstrate dependability.
Exhibit professionalism.
Organize work area.
Demonstrate cooperation.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ECON - Economics

ECON 2100 - Consumer Economics (3)

Introduces students to the information and tools that will enable analysis and evaluation of alternatives concerning major consumer issues with the goal of increasing personal well-being. (This course is not intended to satisfy the entrance prerequisites for most 4-year programs in economics, business, or accounting.)

Prerequisite: Qualifying score on the reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply the economic way of thinking to analyze consumer issues in the U.S. economy
Identify the benefits of trade in a global world economy
Apply economic consumer optimization techniques
Apply introductory financial concepts and measures to consumers
Create a personal financial plan analysis
Discuss how taxes affect consumer incentives and investment behaviors
Identify key risk areas faced by consumers
Describe the impact of risk tied to large consumer purchases
Apply investment strategies in a simulated environment
Apply the supply and demand model to determine changes in market prices
Model insurance risk pools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 2 & 5.

ECON 2200 - Principles of Microeconomics (3)

This course will focus on tools and techniques used by economists that impact decisions made by individuals and businesses/firms. Current microeconomic issues are reviewed and analyzed as well as alternate views being provided.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop an understanding of basic economics
Explore the benefits of trade
Demonstrate how demand and supply determine the market equilibrium price
Explore the logic of consumer choice
Define the concept of elasticity
Explore the concepts of market failure, including externalities, public goods and asymmetric information
Examine the relationship between production function and costs
Critique the economic impact of the four types of market structures
Examine the impact of government tax, spending and antitrust policies on firms
Determine the demand and supply of the factor markets
Explore income distributions and alternatives to poverty
Explore the role of unions in determination of prices, wages and working conditions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 9.

ECON 2300 - Principles of Macroeconomics (3)

This course focuses on the theories that explain the overall performance of the economy and the government policies that stabilize the economy and promote economic growth. Students will learn the principles of markets, the price system and supply and demand. The course will also cover national income, unemployment, inflation, the role money, the banking system, and the foundations of international trade and finance.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the implications of scarcity for society and decision-making
Determine the opportunity cost of a particular choice
Apply the concepts of marginal analysis to optimize behavior
Apply the model of supply and demand to analyze market behavior
Interpret macroeconomic indicators
Analyze the causes and consequences of unemployment, inflation, and economic growth

Analyze the economic health relationships in a highly interdependent world economy
Evaluate the effectiveness of using monetary and fiscal policy to achieve macroeconomic goals

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 8.

ELEC - Electronics Technology

ELEC 1000 - DC Circuits (4)

This course will provide the student with basic electronic concepts as they apply to direct current circuits. Circuits will consist of a voltage source and one or more resistors. The student will compute circuit parameters and these will be compared to measured values from a breadboarded or computer simulated circuit. The student will learn the IEEE color code and to safely and correctly use both analog and digital meters to measure voltage, current and resistance.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify electrical symbols and units
Measure circuit parameters
Identify resistor types and their characteristics
Analyze simple Direct Current electrical circuits
Use Ohm's law to calculate circuit parameters for a Direct Current circuit
Analyze series, parallel and combination Direct Current circuits
Design loaded and unloaded voltage dividers
Evaluate balanced bridge circuits
Troubleshoot series, parallel and combination circuits
Compute loaded and unloaded voltage divider values
Explain the Maximum Power Transfer theorem
Analyze voltages referenced to ground

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ELEC 1050 - AC Circuits (4)

This course is designed to provide the student with the basic electronic concepts as they apply to the generation and measurement of alternating current. The student will compute AC voltages and currents in resistive capacitive and inductive circuits. These will then be compared with data measured with both the multimeter and oscilloscope. The student will learn to correctly and safely use Two Trace Oscilloscopes, AC meters and function generators. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1000 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the principles of alternation
Explain the laws of magnetism
Operate the Oscilloscope and the Signal Generator
Use an Oscilloscope to measure voltage, period and phase relationships of different waveforms
Demonstrate probe compensation in an Oscilloscope
Calculate the peak, root mean square, average and Instantaneous voltage values of waveforms
Measure the characteristics of square and rectangular waveforms
Calculate inductance and inductive reactance in series and parallel circuits
Calculate capacitance and capacitive reactance in series and parallel circuits
Identify the physical properties of inductors and capacitors
Analyze series and parallel characteristics of inductors and capacitors
Identify transformers and their performance characteristics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ELEC 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at

HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1100 - Complex AC Circuits (3)

This course is designed to provide the student with the basic electronic concepts as they apply to RCL circuits such as resonant, filter and timing circuits. The student will compute voltages, currents and times in these circuits. These will then be compared with data measured with both multimeter and oscilloscope. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1050 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the operation of RCL circuits
Calculate the impedance of combination RCL circuits
Analyze series and parallel resonant circuits
Calculate the circuit Q, bandwidth and Resonant Frequency of RCL circuits
Discuss the applications of resonant circuits
Calculate the Power Factor of a circuit
Analyze low pass different types of filter circuits
Determine time constants for different circuit configurations
Analyze the universal time constant chart

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ELEC 1150 - Diodes and Rectifiers (2)

This course is designed to provide the student with the basic electronic concepts as they apply to semiconductor diode and rectifier circuits including special purpose diodes such as light emitting diodes, laser diodes, varactor diodes and zener diodes. The student will compute component and circuit parameters. These will then be compared with measured data. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1100 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of semi-conductors
Identify diodes and their characteristics
Discuss the operation of a zener diode
Explain the functions of halfwave, fullwave and bridge rectifiers
Evaluate circuits using simulation software
Calculate circuit parameters to different levels of approximation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1200 - Soldering Skills (1)

This course develops skill in soldering components to a printed circuit board and replacing defective components by desoldering, preparing the board and resoldering new components. A soldering project is fabricated as part of the class. The student will learn the proper use and care of soldering and desoldering equipment. The student will learn the proper use of flux and other chemicals. Safety concerns will be a major component of this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate proper stripping of wire insulation
Demonstrate proper tinning of solder wire
Demonstrate soldering a wire to a turret terminal
Demonstrate cup terminal soldering of a D connector
Demonstrate soldering a wire to a lug terminal
Demonstrate de-soldering technique using a solder wick
Demonstrate de-soldering technique using a solder sucker
Demonstrate the through hole soldering technique

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

lab: 1

ELEC 1220 - Electronic Soldering and Inspection (2)

This course provides basic training in IPC recommended (international trade association for Electronics Manufacturing) procedures for assembly, soldering and inspection of electronic components. The student will be introduced to IPC recommended techniques for assembling, soldering and inspecting through hole, SMD, Wires & Terminals. The course has both a discussion and a hands-on component. The hands-on activities are an opportunity to practice the IPC recommended techniques discussed in the lectures.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate wire stripping and tinning procedures per IPC standards
Solder Through-Hole components per IPC standards
Solder Surface Mount Devices per IPC standards
Solder Wires and Terminals per IPC standards
Solder wires to a D-connector per IPC standards
Apply heat-shrink tubing per IPC standards
Inspect soldered components and wires for conformity to IPC Standards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1250 - Solid State Components and Circuits (5)

This course will introduce students to a wide range of active solid-state devices such as transistors, unijunction transistors and silicon-controlled rectifiers. It also teaches how these devices are used in practical circuits such as amplifiers, speed controls, switching circuits and timing circuits. The student will compute component and circuit parameters. These will then be compared with measured data. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1150 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the characteristics of the Bipolar Junction Transistors
Calculate the alpha and beta values for a transistor
Compare different type transistors
Test transistors using an ohmmeter and a transistor tester
Analyze the base bias of transistors
Explain the Q point in transistor operation
Analyze different types of transistor bias networks
Evaluate the AC equivalent circuits for transistors
Analyze small signal amplification of transistors
Evaluate common emitter, common collector and common base amplifiers
Analyze class A, class B and class AB amplifiers
Examine the operating characteristics of field effect transistors
Extract information from transistor specification sheets
Analyze common trigger devices
Evaluate solid state circuits using simulation software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

ELEC 1285 - Practical Circuit Analysis with Multisim (2)

This course introduces students to the fundamentals of Multisim, an interactive software suite by National Instruments. Multisim can be used for schematic capture, board layout and integrated testing of electronic circuits. In

this course, students build schematics and evaluate circuit performance through interactive simulation and analyses. A majority of this course involves hands on activities which includes constructing, simulating and troubleshooting circuits. At the end of this course students will demonstrate competence by designing and simulating a circuit that demonstrates a real-world application.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct and simulate electrical/electronic circuits using Multisim
Develop skills in the use of instruments like Oscilloscope, Function Generator, etc
Manipulate circuit parameters to change and observe different outcomes
Evaluate complex electronic circuits using basic circuit principles
Build and test circuits with real world applications
Explore techniques to interface Multisim with LabVIEW
Demonstrate proficiency with Multisim by building and testing an assigned project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1300 - Operational Amplifiers (2)

This course will introduce students to integrated analog amplifier, timing and waveshaping circuits. Students will test the components for proper operation and parameters. Students will design and build a variety of practical circuits utilizing operational amplifiers. They will test all circuits for proper operation and compute component and circuit parameters. These will then be compared with measured data. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1250 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate ideal and real operational amplifier characteristics
Determine the slew rate, common mode rejection ratio, and gain bandwidth product of an op amp
Analyze inverting and non-inverting op amps
Analyze the summing and difference op amps
Analyze the differentiator and integrator op amps
Analyze the comparator op amp
Analyze the transconductane and transresistance op amps

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1375 - LabVIEW Fundamentals and Applications (2)

LabVIEW (Laboratory Virtual Instrument Engineering Workbench) is a graphical programming environment used to model applications that require testing, measurement and control. In this course, students will develop data acquisition, instrument control, data logging and measurement analysis applications. LabVIEW's graphical approach allows students to program without the need to master complex coding. LabVIEW's user interface can display the results as Graphs, Gauges and LEDs. A majority of this course involves hands on activities, including modelling and simulating real world applications. At the end of this course students will demonstrate competence by creating an application to acquire, process, display and store real-world data.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the basic features of LabVIEW as a programming language
Demonstrate the use of the Front Panel and Block Diagram in LabVIEW
Model and simulate simple electrical systems using LabVIEW
Demonstrate the use of LOOP control structures in LabVIEW
Build a simple Instrument Control System for data acquisition using LabVIEW
Use LabVIEW to model physical systems with practical applications
Demonstrate proficiency with LabVIEW by building an assigned project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 1400 - Basic Troubleshooting (3)

This course will allow students to troubleshoot larger circuits and systems. Students will utilize schematics, wiring

diagrams, functional block diagrams, component placement diagrams, deductive reasoning and test equipment to determine faulty circuits and components. A practical troubleshooting exercise will be the final test.

Prerequisite: ELEC1250 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine board level functional relationships of a function generator
Investigate the front panel control operations of a given function generator
Operate the function generator controls to display waveforms on a oscilloscope
Identify the different wave function blocks on a given function generator
Explain the functional block level interactions in a given function generator
Trace the signal flow through a given function generator
Analyze circuit board interactions of a given function generator
Troubleshoot a given function generator for defects

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ELEC 1450 - Basic Digital Logic (3)

This course introduces the student to digital electronic circuits. Numbering systems are introduced and a variety of binary codes discussed. Logic family characteristics are discussed. Truth tables, Boolean algebra and Karnaugh Maps are used to analyze, troubleshoot and design digital circuits.

Prerequisite: ELEC1250 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize the binary, octal, decimal and hex numbering systems
Perform math and logical operations with the different number systems
Identify logic symbols and circuits
Troubleshoot digital circuits
Construct a logic circuit from a boolean equation and viceversa
Construct Truth Tables and switching circuits for the AND, OR, NOT, NAND, NOR, XOR and XNOR logic gates
Analyze the AND, OR, NOT, NAND, NOR, XOR, XNOR and combination circuits
Discuss ICs and digital logic hardware
Recognize different IC packaging and logic families

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ELEC 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently
Organize work schedule
Follow prescribed procedures
Demonstrate safety
Demonstrate initiative
Integrate previously acquired skills
Integrate previously acquired knowledge
Display good judgment
Demonstrate dependability
Exhibit professionalism
Organize work area
Demonstrate cooperation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

ELEC 2000 - Advanced Digital Circuits I (4)

This course applies the concepts presented in the course Basic Digital Logic. It also covers the circuits that are in basic digital systems. Registers, counters, adders and comparators. Complex digital circuits, such as Memory circuits, the ALU and a basic computer system are discussed and analyzed. Other common digital integrated circuits are also included in this course.

Prerequisite: ELEC1450 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze counters and frequency dividers
Analyze shift and storage registers
Analyze different flip-flop configurations
Evaluate the 4-bit storage register
Analyze the 4 and 8-bit shift registers
Analyze half and full-adder circuits
Evaluate ripple, up and down counters
Discuss registers and memory in computers
Discuss the arithmetic logic unit
Analyze the multiplexer and de-multiplexer circuits
Analyze the decoder and encoder circuits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ELEC 2020 - Advanced Digital Circuits II (3)

This course presents the operation of complex digital circuits. Examples of circuits that are explored are selector circuits, multiplexers, demultiplexers, analog to digital and digital to analog converters. Digital test instruments and digital troubleshooting are also discussed.

Prerequisite: ELEC2000 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze different types of random access memory circuits
Analyze the 64-bit memory chip
Evaluate programmable and generic array logic circuits
Discuss basic computer functions
Discuss the memory chip selector circuit
Analyze memory mapping and architecture
Define the binary and hex addressing systems
Analyze digital to analog conversion circuits
Analyze analog to digital conversion circuits

Text and References: A list of textbooks required for this course is available atthe bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ELEC 2050 - Advanced Troubleshooting (4)

This course will allow students to troubleshoot complex circuits and systems. Students will utilize schematics, wiring diagrams, functional block diagrams, component placement diagrams, deductive reasoning and test equipment to determine faulty circuits and components. A timed practical troubleshooting exercise and the work done during the course will be used to evaluate the student.

Prerequisite: ELEC1400 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the oscilloscope's operating parameters
Identify panel control functions
Evaluate the functional blocks of an oscilloscope
Conduct a signal flow analysis of an oscilloscope
Examine the X-Y and tester mode operations of an oscilloscope
Analyze the horizontal sweep circuits of the oscilloscope
Examine the vertical section circuits of the oscilloscope
Examine the deflection and cathode ray tube circuits of the oscilloscope
Examine the trigger and blanking circuits of the oscilloscope
Examine the switching and calibrate circuits of the oscilloscope
Analyze power supply circuits for direct current and ripple content
Troubleshoot an oscilloscope

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

ELEC 2100 - Motor and Motor Controllers (3)

This course covers the characteristics of D.C., A.C. and stepper motors. Controller operation for these motors is also covered. Motor generators sets are used to study conversion of mechanical energy to electrical energy.

Prerequisite: ELEC1250 and ELEC1300 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain direct current motors and their characteristics
Explain direct current motor controllers
Explain the alternating current motor characteristics
Explain split-phase terminal characteristics
Determine the Error Free Start Stop (EFSS) and slew rate characteristics of motors
Analyze single-phase, two phase and half step controllers
Examine the functions of separately excited shunt generator
Examine self-excited compound generators under variable rpm and load characteristics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ELEC 2200 - Microprocessors and Microcomputers I (4)

This course introduces the student to system and microprocessor architecture, timing and the instruction set. Using the instruction set, the student will be able to write simple application programs.

Prerequisite: ELEC2000 and ELEC2020 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe microcomputer systems, memory maps and decoding techniques
Analyze a system I/O map and decoding techniques
Describe I/O, mapped I/O, memory mapped and interrupt driven I/O
Describe the different types of interrupts
Describe interrupt initializing procedures
Describe the microprocessor instruction set and addresses
Describe program development steps
Describe program debugging methods
Write a program using parallel input I/O and output I/O
Write a program using the interrupts
Write commonly used programs in industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ELEC 2220 - Microprocessors and Microcomputers II (4)

This course builds on the concepts presented in Microprocessors and Microcomputers I. The student will write programs that service various simple input and output devices. Various issues concerning small microcomputer design will also be discussed, such as hardware/software trade offs.

Prerequisite: ELEC2200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe memory maps
Analyze decoding techniques
Describe I/O functions
Identify I/O types
Describe I/O devices
Analyze programmable I/O port operation
Describe I/O types
Analyze a system I/O map
Analyze discrete and programmable port I/O operation
Write programs that use parallel I/O, interrupt driven I/O, and serial I/O
Interface common peripheral I/O devices
Write commonly used programs in industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ELEC 2300 - Troubleshooting Computers (3)

This course provides practical experience in troubleshooting the IBM compatible systems. The student will diagnose hardware and software problems using DOS and Windows operating systems. The student will troubleshoot to the lowest repairable module (LRM). A final performance test will be given.

Prerequisite: ELEC1000 and ELEC1050 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manipulate files stored on a diskette
Disassemble and reassemble a personal computer system
Diagnose the computer for physical/logical disk errors
Optimize system speed of a personal computer
Identify hardware problems using diagnostic software and codes
Replace a bad hard drive, floppy drive and power supply on a personal computer
Replace a video graphics card, ribbon cable and system board on a personal computer
Load the DOS and Windows operating systems to a personal computer
Use the Windows startup menu to troubleshoot hardware problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ELEC 2400 - Industrial Controls (2)

This course covers the fundamental concepts of input and output transducer circuits, position and motion detection. These concepts will be studied from an analog and digital point of view.

Prerequisite: ELEC1450, ELEC2000 and ELEC2020 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate photoelectric and temperature transducers
Explain temperature transducer circuits and motion detection
Compute linear and rotary velocity and acceleration rates
Explain the photo interrupter and photo reflector detection systems
Explain analog and digital position detection
Explain the binary coded wheel, encoded wheel and increment wheel operations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 2420 - Telemetry (2)

This course covers the fundamental concepts of signal interfacing and telemetry circuits in industrial situations.

Prerequisite: ELEC2400

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate serial and parallel digital to analog conversion
Evaluate analog to digital frequency conversion
Examine pulse frequency modulation, pulse amplitude modulation, pulse position modulation and pulse width modulation concepts
Evaluate single pulse and parallel pulse code modulation
Examine frequency division multiplexing and time division multiplexing and circuits

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 2450 - Regulated Power Supplies (2)

In this course students will learn how circuits can regulate and control voltages and currents. A variety of practical power supply circuits will be built and tested. Circuits will be designed and evaluated by breadboarding and/or computer simulation software.

Prerequisite: ELEC1300 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze automatic current limiting circuits
Analyze direct current to direct current converters

Analyze switching power supplies
Analyze linear regulators
Analyze pulse width modulated regulated power supplies
Analyze feedback regulator with current boosting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ELEC 2475 - Electronics Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Electronics industry. The student is responsible for locating and arranging the internship site. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Instructor approval and completion of at least 50% of your degree or diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

EMSV - Emergency Medical Services

EMSV 1000 - Introduction to EMS Systems (1)

This is a general introductory course for students planning studies in Emergency Medical Services. Students will learn the history, development, and current model for the delivery of out-of-hospital medical services in the United States. Topics include legal and ethical issues and communication systems.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Summarize the general history of EMS
Describe the role of legislative and regulatory agencies
Explain the components of a modern EMS system
Describe the roles and responsibilities of Paramedic/EMT
Analyze various EMS deployment systems
Explain the basic types of modern ambulance organizations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1020 - CPR/First Aid (1)

The student will learn how to: recognize a life threatening emergency; remain calm; how and when to call 911; perform healthcare provider level CPR skills on all age groups including 2 rescuer CPR; assist a conscious or unconscious choking adult, child or infant; use an Automatic External Defibrillator.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform basic life support with AED (Automated External Defibrillator) and basic airway management on adults, infants, and children
Value proper infection control techniques and demonstrate the proper use of barrier devices
Perform proper first aid in selected emergencies on adults, infants, and children

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1030 - OSHA 10 First Aid/CPR (2)

This course is appropriate for employees in healthcare, manufacturing and a variety of industrial settings. OSHA 10 General Industry training provides the knowledge needed for workers to predict, prevent, identify and stop common worksite hazards. In addition, this course will provide the training needed for students to recognize and respond to life threatening emergencies. This includes understanding how to perform Heartsaver First Aid/CPR/AED on all age groups, how to assist conscious or unconscious choking adults, children or infants and how to use an Automatic External Defibrillator. Students must attend all class sessions in order to be eligible for certification.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the proper use of personal protective equipment
Prepare OSHA record keeping forms
Identify slip, trip and fall hazards
Explain the dangers related to electrical hazards
Recognize fixed and portable ladder safety
Identify the causes and prevention of musculoskeletal and repetitive motion disorder injuries in the workplace
Describe the hazards associated with combustible liquids and compressed gases
Discuss fire prevention, protection and emergency egress safety
Discuss the dangers of unguarded equipment
Perform basic life support with AED (Automated External Defibrillator) and basic airway management on adults, infants, and children
Demonstrate proper infection control techniques and the proper use of barrier devices
Perform proper first aid in selected emergencies on adults, infants, and children

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

EMSV 1050 - Emergency Medical Responder (First Responder) (3)

This course uses the new education standards and meets the requirements established by the Minnesota EMS

Regulatory Board (MN EMSRB). This course is designed to provide the Emergency Medical Responder (First Responder) at the scene of a Medical or Trauma Emergency with the necessary knowledge and skill to manage patient care until the arrival of ambulance personnel. The course is intended for Law Enforcement, Firefighters, Rescue Personnel, Ski Patrol, Athletic Coaches, School Nurses, Camp Counselors, Special Event Coverage Personnel, Industrial Emergency response teams and other individuals charged with "first response" duties.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess the patient condition
Examine the patient for injuries
Evaluate equipment available to package the patient
Manage patients condition under standards of care
Utilize equipment to treat the patient
Communicate effectively with patient and staff
Advocate for the patient
Demonstrate skills necessary for patient care
Identify patient priority

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

EMSV 1070 - Pediatric Education for Prehospital Providers (1)

This is a course designed for the healthcare provider which covers advanced pediatric assessment and skills. The students will use different assessment skills, and learn how to access, treat, and package the pediatric patient. The course will follow the Pediatric Education for Prehospital Provider (PEPP) standards. Upon successful completion of the program, the students will receive certification as an PEPP provider.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess pediatric patient using appropriate assessment algorithm
Provide appropriate stabilization
Prepare patient for transport

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1100 - Emergency Medical Technician - Basic (6)

This course uses the new education standards and meets the requirements established by the Minnesota EMS Regulatory Board (MN EMSRB). Upon successful completion of the course, passing the class readiness exam and National Registry of EMT Practical Skills exam (additional $125 fee required), you are then eligible to take the NREMT written exam (additional $80 fee required). State and National certifications will be issued upon passing these tests. Current EMT certification is a prerequisite for most paramedic programs.

Prerequisite: EMSV1050 and Qualifying score on computer literacy assessment test OR CPLT1100, 18 years old, and required vaccinations

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify elements involved in a focused trauma assessment a patient
Identify elements involved in a rapid trauma assessment on a patient
Identify elements involved in a medical assessment on a patient
Perform rapid trauma assessment on a patient
Perform focused trauma assessment on a patient
Perform medical assessment on a patient
List the phases of an ambulance call
Demonstrate his/her role and responsibilities as a member of the emergency medical team
Formulate accurate written and oral communication skills in the workplace
Select continuing educational opportunities to maintain professional licensure credentials
Manage effective patient/client care with the use of critical thinking skills
Practice emergency medical safety principles in the workplace
Practice ethical and legal obligations in the field of emergency medical services

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 2

EMSV 1105 - Ambulance Operations (2)

This course will focus on additional technical and clinical skills that are needed for use to work in the EMS field, but not covered in depth during the EMT-Basic course. Students will have the opportunity to prepare for ambulance work, clinical internships, and future courses in EMS. The course is challenging, and is based on experimental educational principles; students will learn by doing. The class is designed to help transfer classroom learning to field operations. This class is a prerequisite for most paramedic programs. The King Map book required for class and a uniform is required during the class ($125.00).

Prerequisite: EMSV1100 or current Certified EMT-B and EMSV1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess patient condition
Chart patient information
Classify patient priority
Demonstrate effective map reading
Demonstrate vehicle safety check

Text and References: A list will be distributed the first day of class.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 2

EMSV 1110 - Lifting Techniques for Health Professionals (1)

This course will focus on the use of proper body mechanics, lifting techniques, back strengthening exercises and general cardiovascular conditioning necessary for pre-hospital and in-hospital personnel.

Prerequisite: Be in good health and have no lifting restrictions

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Implement procedures for safe lifting
Demonstrate proper lifting techniques
Describe causes of back injuries

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5 lab: 0.5

EMSV 1115 - Passenger Assistant Technician (1)

This course meets partial requirements for Special Transportation Services by the Minnesota Department of Transportation (MN DOT). Topics include Passenger Assistance Part I and II, abuse prevention and first aid.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Handle patient/client safely
Relate Universal Human Rights to specific situations
Identify psycho-social needs of elderly and disabled individuals
Demonstrate Minnesota state guidelines for patient/client transports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1120 - Ambulance Clinical (2)

Students will participate in the various aspects of an EMT at a major Twin Cities metropolitan ambulance service. This may include Advanced Life Support (ALS). The ride-along clinical is eighty hours.

Prerequisite: EMSV1100 and current State Certified EMT-B

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adapt to changes in patient condition
Acknowledge patient wishes
Administer appropriate patient therapies
Anticipate patient condition based on critical thinking skills
Communicate effectively with the patient, staff and physician

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 2

EMSV 1130 - Emergency Vehicle Driving Skills (1)

This course includes classroom and behind the wheel training for Emergency Medical Services personnel. The course includes basic and advanced driving skills and discussion of Code 3 driving. A driving range is used which includes straight-line braking, control braking, backing, and serpentine.

Prerequisite: 18 years old, and valid driver`s license with good driving record

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adapt to road and weather conditions
Adjust driving skills as needed
Be aware of your driving conditions
Demonstrate safe emergency driving practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1136 - Understanding EKGs (2)

You will review the anatomy and cardiovascular physiology of the heart. Basic understanding and interpretation of arrhythmias are included. Practice of EKG strips identification is covered. Legal and ethical aspects are discussed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate ability to read 12 lead EKG
Apply electrodes to patient
Assemble all necessary equipment needed

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

EMSV 1140 - CPR Instructor (1)

In this course, you will acquire the knowledge and skills necessary to fairly and accurately instruct and test students in Basic Life Support CPR procedures. Graduates will receive a successful completion certificate that can be given to a local Training Center (TC) to obtain their American Heart Association BLS Instructor certification.

Prerequisite: Current CPR for Health Care Provider Certificate or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate teaching techniques
Identify learning styles needed
Observe students teaching methods

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1146 - Medical Terminology for EMS/ER Personnel (3)

You will analyze the construction of medical root words plus use of common medical prefixes and suffixes. Medical

abbreviations will be included to assist you in your documentation on Emergency Department (ED) patient records/EMS run sheets and communication with other health professionals.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Classify terms in body functions
Communicate effectively using medical terminology
Explain medical terms
Demonstrate ability to use medical terminology
Describe patient injury or sickness using medical terminology
Explain the patient condition using medical terminology
Identify patient condition using medical terminology
Select treatment using medical terminology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Online: 3

EMSV 1150 - First Responder (3)

This course is designed to provide the 1st Responder at the scene of a Medical or Trauma Emergency, with the necessary knowledge and skill to manage patient care until the arrival of ambulance personnel. The course is intended for Law Enforcement, Firefighters, Rescue Personnel, Ski Patrol, Athletic Coaches, School Nurses, Camp Counselors, Special Event Coverage Personnel, Industrial Emergency response teams and other individuals charged with `first response` duties. This course meets or exceeds the guidelines set forth by the United States Department of Transportation and the Minnesota EMSRB.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess the patient condition
Examine the patient for injuries
Follow equipment available to package the patient
Utilize equipment to treat the patient
Communicate effectively with patient and staff
Advocate for the patient
Demonstrate skills necessary for patient care
Identify patient priority

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

EMSV 1155 - Phlebotomy Techniques (3)

In this course, you will learn venipuncture and special collection procedures. Quality management and legal issues, specimen collections, documentation and lab procedures will be covered. You will acquire the basic knowledge of the circulatory system as it pertains to phlebotomy. Safety and infection control measures are extensively explored. Clinic lab is included. Scrubs are required.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assemble equipment necessary
Communicate with the patient
Confirm right patient
Demonstrate skills needed
Organize equipment
Perform skills
Administer treatments
Analyze procedures and equipment needed

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

EMSV 1165 - EMT-Basic + CPR (7)

This course uses the new guidelines established by the US DOT and meets the requirements established by the

Minnesota EMS Regulatory Board (MN EMSRB). Upon successful completion of the course and National Registry of EMT Practical Skills exam (additional $80.00), you are eligible to take the NREMT written exam (additional $70 fee required). State and National certifications will be issued upon passing these tests. Current EMT certification is a prerequisite for most paramedic programs.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 or FRPT1100, 18 years old, required vaccinations, background studies will be required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify elements involved in a focused trauma assessment on a patient
Identify elements involved in a rapid trauma assessment on a patient
Identify elements involved in a medical assessment on a patient
Perform a rapid trauma assessment on a patient
Perform a focused trauma assessment on a patient
Perform a medical assessment on a patient
List the phases of an ambulance call
Identify elements involved in a focused trauma assessment
Demonstrate the role and responsibilities as a member of the EMS team
Formulate accurate written and oral reports
Select continuing educational opportunities to maintain professional licensure credentials
Manage effective patient care with the use of critical thinking skills
Practice emergency medical safety principles in the workplace
Practice ethical and legal obligations in the field of emergency medical practice

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5 lab: 2

EMSV 1170 - ER Procedures and Clinical (3)

This course will provide the student with the necessary skills to assist with various Emergency Dept. (ED) procedures such as IV set up, sterile technique, insertion of catheters, wound cleansing, suturing assistance and other medical procedures used in ED settings. Also included are various orthopedic procedures and use of devices such as: cast set up and removal, splints, crutch sizing and usage. Upon completion of classroom/lab sessions students will participate in a clinical in a ED setting by observing patient care. This will take place in the Emergency Department.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assemble necessary equipment
Complete assigned task appropriately
Communicate with your patient

Perform tasks assigned
Clean used equipment
Demonstrate skills
Identify equipment needed
Modify equipment and procedures for patient
Organize equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 SOE: 1

EMSV 1180 - Principles of Basic Life Support for Healthcare Providers (1)

This course is intended for students in healthcare-related programs needing CPR certification, as well as students desiring more depth in their knowledge in Basic Life Support (BLS). The student will receive an American Heart Association card showing certification as a provider of BLS for Healthcare Providers. Anatomy, physiology and pathophysiology as it relates to heart disease and stroke will be discussed. Certification in adult, child, and infant Cardiopulmonary Resuscitation (CPR) and choking will be provided using the latest guidelines provided by the American Heart Association. Personal and victim safety, ethical/legal considerations, and special resuscitation situations will also be discussed.

Prerequisite: EMSV1020 OR Current CPR certification OR taken currently with EMSV1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess patients
Differentiate between treatment options
Utilize skills for treatment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1190 - Intravenous (IV) Access (1)

This course is designed to teach the principals of Intravenous Access, along with assessing the patient who will need intravenous access and fluid resuscitation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess the patient for intravenous access and fluid resuscitation
Provide effective care and technique of the venipuncture
Prepare equipment needed to perform the venipuncture

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5 lab: 0.5

EMSV 1195 - International Trauma Life Support (ITLS) (1)

This is a course designed for the prehospital provider not covered in the EMT course for trauma assessment and skills. The student will use the rapid trauma assessment algorithm, learning how to assess, treat and package the patient. We will be following the ITLS standards and upon successful completion of this course the student will receive certification as an ITLS provider. $25.00 fee required for purchase of a certification card.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess traumatic patient using the rapid trauma assessment algorithm
Provide appropriate stabilization
Prepare patient for transportation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1225 - Advanced Cardiac Life Support (ACLS) for EMT (1)

EMTs can find themselves in critical situations that require advanced cardiac life support (ACLS). Although EMTs are not trained to provide advanced-level skills, there is much they can do to improve the quality of management, and thus the patient's chance for survival by understanding ACLS and facilitating its administration by ALS providers. Teamwork is the cornerstone of ACLS care. Advanced life support can only function on a foundation of solid, ongoing basic life support practices. As such, an understanding of the principles of advanced life support will enhance the ability of EMTs to work in collaboration to increase the survival rates of patients. Most importantly, better teamwork will improve care not only during cardiac arrests, but also during all emergency calls.

Prerequisite: Healthcare Provider Basic Life Support

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess cardiac patient using the appropriate assessment algorithm
Provide appropriate stabilization
Prepare patient for transportation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 1260 - First Responder Refresher (1)

First Responder Refresher contains 16 hours of continuing medical education which meets The State of Minnesota and National Registry standards to recertify as a First Responder. This 16 hours contains mostly lecture and some hands on demonstration.

Prerequisite: Minnesota First Responder who is current in their certification

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assess patients who may need medical help
Demonstrate proper medical procedures
Identify patient priority

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

EMSV 2001 - Role Advocacy and Outreach (3)

This is an introduction to the role and function of the Community Paramedic (CP). The student will learn about the Community Paramedic's specific role and function as a member of the health care team and part of the community. The student will identify the components of the role, define it, and explain the "scope of service" for the position of CP. Additionally, the student will learn about the role of the CP as an advocate for clients in the community.

Prerequisite: Instructor approval and currently certified as an Emergency Medical Technician Paramedic (EMT-P) and have two (2) years of full-time service as an EMT-P, or its part-time equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize the "scope of practice" of the Community Paramedic
Explain the definition of health from a community perspective
Link communities with health and social service systems
Outline methods on how to use health care and social service systems
Articulate needs and perspectives of the community to health and social service systems
Describe how literacy levels can impact health
Identify social determinants of health
Develop a plan to address social determinants of health in the community

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

EMSV 2005 - Community Assessment (2)

This course is designed to introduce the role of the Community Paramedic (CP) as a member of the health care team in community assessment. The student will map the community health care services, describe the demographics of the community and assess their impact on the health of the clients. Additionally, the student will gain understanding of community health services in order to give advice on health care needs in the community.

Prerequisite: Instructor approval and EMSV2001

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Map community health care systems
Understand community health services
Analyze community health resources
Document community health resources
Identify the health and social needs in underserved communities
Describe demographics of the community
Identify effects of demographics on the health of the community
Describe quantitative data as it relates to the health of the community

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

EMSV 2011 - Care and Prevention Development Strategies (4)

This course will introduce the responsibilities of the Community Paramedic (CP) for gathering appropriate patient/client information and maintaining accurate records, including documentation of encounters between the CP and the patient/client. The student will also learn about the CP's role in assessing health care needs and appraising health care conditions.

Prerequisite: Instructor approval and EMSV2001

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Select culturally appropriate health information to provide to citizens and health care providers for promoting wellness
Assess a health care situation accurately
Complete appropriate documentation and recording
Explain health promotion and disease prevention
Appraise health conditions through health screenings and healthcare information
Recommend appropriate preventive services
Describe insurance programs and other special community programs specific to the Community Paramedic's (CP's) jurisdiction
Analyze communication between provider and citizens to improve quality of care
Apply legally-mandated reporting requirements
Develop effective strategies for communication between individuals/groups and the community health care system

Explain the liability of the CP position, jurisdiction or supervision and malpractice insurance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

EMSV 2025 - Care Coordination Practicum (1)

This course will provide the student with clinical training under the supervision of a medical director, physician, nurse practitioner, physician's assistant or public health provider. The student will recommend appropriate health and/or social care professionals for the patient, prioritize jobs, and assist the patient in following an established Plan of Care. Prior to beginning this clinical experience the student will determine appropriate clinical competencies with guidance from the Medical Director and obtain a Memorandum of Understanding for each clinical site. The student's placement in the clinical is based on qualifications and past training and experience.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate care for appropriateness related to delivery location
Recommend the most appropriate health and/or social care professional
Provide follow-up services according to established care plan
Demonstrate competency in skill areas required for clinical interventions
Develop safe treatment and referral programs through policies and protocols
Demonstrate competency needed to share public information related to EMS prevention programs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1

EMSV 2035 - Core Concepts in Primary Care (1)

This course will provide the student with clinical training under the supervision of a medical director, physician, nurse practitioner, or physician's assistant and will include instruction on desired competencies and assessment of Primary Care patients. The student's placement in the clinical is based on qualifications and past training and experience.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate care for appropriateness related to delivery location
Prioritize jobs to ensure appropriate emergency response
Recognize limits of the Community Paramedic's (CP's) competence
Demonstrate competency in skill areas required for clinical interventions
Demonstrate competency needed to share public information related to EMS prevention programs
Explain the role of the CP in the community multi-disciplinary team

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1

EMSV 2040 - Needs Assessment Implementation Internship (3)

This course will provide the student with clinical training under the supervision of a medical director, physician, nurse practitioner, physician's assistant or public health provider. The student will recommend appropriate health and/or social care professionals for the patient, prioritize jobs, and assist the patient in following an established Plan of Care. Prior to beginning this clinical experience the student will determine appropriate clinical competencies with guidance from the Medical Director and obtain a Memorandum of Understanding for each clinical site. The student's placement in the clinical is based on qualifications and past training and experience.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Provide patient-focused care
Evaluate care for appropriateness related to delivery location
Recommend the most appropriate health and/or social care professional for the patient
Prioritize jobs to ensure appropriate emergency response
Provide appropriate health care advice and preventive services to both patients and other groups and individuals
Provide follow-up services according to established care plan
Recognize limits of the Community Paramedic's (CP's) competence
Demonstrate competency in skill areas required for clinical interventions
Develop safe treatment and referral programs through policies and protocols
Demonstrate competency needed to share public information related to EMS prevention programs
Explain the role of the CP in the community multi-disciplinary team
Assist in emergency preparedness for the community

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 3

ENGC - Engineering CAD Technology

ENGC 1011 - Engineering Drawing (3)

This is a basic engineering drawing course. It is designed to give the student the necessary skills to draw a mechanical part. Sketching, orthographic projection, auxiliary views, sectional views, and pictorial representation will be covered.

Prerequisite: One of the following: ENGC1100, ENGC1160, ENGC1250, or ENGC2100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore drafting careers
Select CAD/CAM components
Investigate drafting office equipment
Sketch one-view drawing on grid-paper
Create geometric constructions
Construct curved-line drawings
Compare first-angle and third-angle projection methods
Prepare three-view drawings
Determine minimum necessary views to describe a part
Draw auxiliary views
Draw secondary auxiliary views
Create offset cross-sections
Select appropriate section views for a given part
Explain three axonometric drawing representations
Create perspective drawings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 1021 - Working Drawings (3)

This course introduces the student to the techniques, standards and methods used to place dimensions onto a production drawing. Methods for calculating tolerance, placing the tolerance onto a drawing and the effect of tolerancing on the dimensioning process is also covered. Drafting shortcuts such as tabulated drawings. Multiple detail drawings on a single sheet and assembly drawings will be covered as well. The student will also apply the drawing revision process.

Prerequisite: One of the following: ENGC1100, ENGC1160, ENGC1250, or ENGC2100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create multiview detail drawings
Select dimensioning method appropriate for a working drawing
Select appropriate drafting shortcuts
Determine proper fits and tolerances
Create a drawing checklist
Specify surface finishes on drawings
Compare screw thread forms
Select standard threaded fasteners for assemblies
Select miscellaneous fasteners for assemblies
Compare properties of common manufacturing materials
Select material for a mass-production part
Compare casting and forging processes
Create tabulated drawings
Create multiple sheet detail drawings
Differentiate types of assembly drawings
Apply drawing revision process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 1041 - Geometric Dimensioning & Tolerancing (3)

This course is designed to give the student a fundamental understanding of the terms, symbols and principles relating to controlling geometric variations of manufactured parts. Controls include tolerances of forms, orientation and

position.

Prerequisite: MACH1056 or ENGC1011 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine engineering drawing components
Contrast geometric dimensioning and coordinate tolerancing
Explain modifiers and symbols of geometric dimensioning and tolerancing
Apply rules and terms of geometric dimensioning and tolerancing
Interpret form controls
Use datum system
Interpret orientation controls
Interpret tolerance of position controls
Interpret concentricity controls
Interpret symmetry controls
Interpret runout controls
Interpret profile controls

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGC 1050 - Additive Manufacturing (3)

This course is an introduction to additive manufacturing. Students will explore different types of additive manufacturing processes, create prototypes using fused deposition modeling (FDM), assemble a 3D printer, and participate in a guided design experience. Persons involved with mechanical engineering, research and development, CAD and other related fields should consider taking this course. This course would also benefit inventors and model makers by developing the skills to produce proof of concept models and create replacement parts utilizing 3D printing technologies.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safety procedures related to model making
Compare types of additive manufacturing techniques
Compare slicing software options
Design parts with Computer Aided Design (CAD) software
Implement reverse-engineering strategies
Produce 3D selfie
Modify 3D printer firmware
Assemble a 3D printer from a kit

Investigate properties of 3D printer filament
Troubleshoot 3D printing problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

ENGC 1060 - Design for Additive Manufacturing (3)

This course will examine best practices for producing prototypes with additive manufacturing. Topics covered include creating models larger than 3D printer volumes, designing joints for 3D printed objects, identifying and correcting errors in triangulated meshes and 3D scanning.

Prerequisite: Instructor approval or ENGC1050 and one of the following: ENGC1160, ENGC1250, ENGC2100, MMVP1545

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare limitations of additive manufacturing, subtractive manufacturing and mass production
Compare file formats for 3D printing
Correlate model and printer coordinate systems
Determine minimum feature size for quality prints
Investigate techniques to minimize support structures
Examine software options affecting print surface quality
Plan subdivisions in models larger than print volumes
Generate compound models using solid model primitives
Generate solid models using multiple sketched features
Design print-in-place joints
Prepare an object for 3D scanning
Generate a 3D scan of an object
Combine 3D scan and engineered object
Resolve triangulated mesh problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 1070 - Additive Manufacturing Finishing Techniques (3)

This course covers finishing techniques for models created with additive manufacturing. Model joining techniques such as threaded fasteners, adhesives, plastic welding, and interlocking joints will be discussed as well. Model smoothing and covering will be explored as well.

Prerequisite: Instructor approval or ENGC1050 and one of the following: ENGC1160, ENGC1250, ENGC2100, MMVP1545

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply safety procedures
Design purchased parts into 3D printed parts
Compare surface treatments
Apply material removal techniques
Construct models utilizing adhesives
Construct models utilizing plastic welding procedures
Build assemblies using fasteners
Apply plastic filler to models
Demonstrate proper painting techniques
Produce molds from 3D printed parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

ENGC 1100 - AutoCAD (4)

This course consists of setting up a drawing environment, creating geometric shapes, creating text, dimensioning drawings, manipulating and editing displays, plotting drawings, and retrieving entity data. Aspects of file management are also covered. The student will get 'hands-on' instruction using the latest release of AutoCAD.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the components of a CAD system
Draw basic shapes
Set up a drawing environment
Organize drawings with layers
Manipulate the display of drawings
Use plotting options to obtain a scaled print
Apply object snaps to drawing elements
Create geometric constructions
Contrast text creation methods
Prepare drawing tables
Modify existing drawing geometry
Obtain drawing information
Compare polylines, multilines and splines
Create dimensions on a drawing
Modify dimension styles
Apply cross-hatching to drawings
Create drawing symbols (blocks)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 1160 - Inventor (4)

This course is designed to educate the student in basic part and assembly modeling techniques. Students will explore topics such as, the Autodesk Inventor interface, sketching tools, part modeling tools, assembly modeling tools, the Design Assistant, creation of drawing views, working drawings and creating bills of materials.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain design intent
Design a basic parametric modeling procedure
Compose a model history tree
Customize modeling enviornment
Check fits and allowances
Construct solid model geometry
Create a detail drawing
Construct an assembly model
Reorganize model tree geometry
Apply placed features
Add parametric constraints
Amend unresolved model geometry
Construct datums and work planes
Differentiate Inventor file types

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 1201 - Industrial CAD Project (3)

This course is designed as an industrial simulation. The student will be assigned a project and be expected to make

a complete set of CAD drawings and product documentation.

Prerequisite: MACH1056 or ENGC1011 and one of the following: ENGC1100, ENGC1160, ENGC1250, or ENGC2100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create component drawings
Document drawing revisions
Create tabulated drawings
Create purchased part drawings
Create photo drawings
Create assembly drawings
Create bill of materials
Capture design intent of product
Critique design intent of product
Recommend design alternatives
Create drawing portfolio
Simulate industry environment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 1250 - SolidWorks I (4)

This course is designed to give students hands-on experience using SolidWorks three-dimensional Parametric CAD software. SolidWorks is a mechanical design software that takes advantage of the familiar Microsoft Windows graphical user interface. The students will use the software to create three-dimensional solid parts and assemblies. The students will also create orthographic projections from the solid geometry. Rapid prototyping may be presented in this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize user interface
Create document templates
Create fully defined sketches
Create extruded features
Create revolved features
Use Hole Wizard
Apply engineering features (chamfers, rounds, shells, etc.)
Create assemblies
Create detail drawings

Create assembly drawings with bill of materials
Utilize datum features
Create sweep features
Create loft features
Employ bottom-up and top-down assembly methodology
Use sheet metal features
Create design tables
Capture design intent of a project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 1255 - SolidWorks II (4)

This course is designed to give additional hands-on experience using SolidWorks three-dimensional Parametric CAD software. The students will use the software to create advanced features such as mutlibody solids, sweeps, lofts, and fillets. Additionally, the students will model sheet metal parts, convert solid parts into sheet metal parts, and model sheet metal in context of an assembly. Other topics that may be introduced at the teacher's discretion include file management, customizing the SolidWorks interface, PhotoWorks, Mold Tools, weldments, and surface modeling.

Prerequisite: ENGC1250

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create multibody solids
Organize multibodies in parts and assemblies
Explore sweep options
Lay out sweep construction geometry
Construct a lofted feature
Compare swept and lofted features
Create advanced fillets
Create a deform feature
Apply surface modeling techniques
Construct injection mold cavity
Design with sheet metal features
Apply advanced sheet metal features
Derive sheet metal parts from solid models
Create sheet metal features in context of a top-down assembly

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 1260 - SolidWorks Certification Review (1)

This course will help prepare students to complete the Certified SolidWorks Associate Exam by creating and examining part and assembly files in a manner consistent with the format of the CSWA exam.

Prerequisite: Concurrent enrollment in or completion of ENGC1255 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain SolidWorks user interface components
Create solid models
Select assembly modeling strategy
Manipulate part orientation
Create drawing views
Apply drawing annotations
Obtain model and assembly mass properties
Use reference geometry in models and assemblies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

ENGC 1265 - Certified SolidWorks Associate Exam (0)

The Certified SolidWorks Associate Exam measures the knowledge and competency of SolidWorks software. This 0 credit course will measure the skills of those who are seeking HTC's SolidWorks Operator Certificate and employment using SolidWorks software. The test is given by SolidWorks Corporation and is proctored at Hennepin Technical College. Students that pass the CSWA-Academic Exam receive an electronic certificate listing their certification ID and educational institution name. The certification ID can be verified by schools and employers.

Prerequisite: ENGC1260

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

ENGC 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement".

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

ENGC 2000 - Mechanical Design (4)

This course covers several design topics including the nature of design, fastener selection, mechanical drive selection, bearing selection, fixture design, and linkages. The student will get experience selecting these components from vendor catalogs and solving design/layout drawing problems.

Prerequisite: ENGC1021 and one or more of the following: ENGC2100, ENGC1250, or ENGC1160

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a product using a defined design process
Calculate power requirements
Select power transmission components
Specify bearings for drive assemblies
Design cams
Create linkage drawings
Select threaded fasteners
Select non-threaded fasteners
Create fluid power diagrams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

ENGC 2011 - Special Fields of Drafting (3)

This is a basic engineering drawing course. It is designed to give the student the necessary skills to draw a variety of type of industrial drawings including weldments, cams, sheet metal developments, piping drawings, jigs and fixtures, and electrical drawings. This course will also introduce the student to the design process.

Prerequisite: MACH1056 or ENGC 1011 and one of the following: ENGC1100, ENGC1160, ENGC1250, or ENGC2100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret welding symbols
Create a weldment drawing
Utilize an existing design process
Compare assembly considerations in the design process
Explore project management tasks
Differentiate cams, linkages, and actuators
Design cam geometry
Develop transition pieces by triangulation
Generate sheet metal development drawings
Produce orthographic piping drawings
Create isometric piping drawings
Compose drill jigs
Design milling fixtures
Lay out electrical schematic diagrams
Create wiring diagrams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 2050 - AutoCAD Upgrade Training (1)

This course covers only the changes, enhancements and additions that have occurred with the latest release of the AutoCAD software package.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use new features of the currently available software
Explain differences between old and new versions of the software
Evaluate time saving features of the new software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

ENGC 2075 - Engineering Design Project (3)

This course will introduce the student to the design and prototyping process. The students will create a design using a three-dimensional CAD station and rapid prototype the design using a three-dimensional printer. Through the use of a variety of manufacturing machines and quality assurance equipment the student will produce a final product to meet the original design concept.

Prerequisite: MACH1056 or ENGC1011 and one of the following: ENGC1100, ENGC1160, ENGC1250, ENGC2100, or an approved three-dimensional CAD application

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Specify the purpose of the product
Design the product
Create preliminary product drawings
Produce a rapid prototype model of the product
Analyze the prototype based on design objectives
Revise preliminary product design
Set up production equipment
Generate production code to create the product
Create the product using production equipment
Assemble the final design
Test the final design
Evaluate group effectiveness

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

ENGC 2100 - Basic Creo Parametric (Pro/ENGINEER) (4)

This course is designed to give students hands-on experience using Parametric Technology's fully associative mechanical design automation software Creo Parametric (formerly Pro/ENGINEER). The student will use this feature-based, solid modeling program to create parts, assemblies, and drawings. Rapid prototyping may be introduced in the course as well.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize user interface
Create internal and external sketches
Create extruded features
Create revolved features
Utilize datum features
Apply engineering features (holes, chamfers, rounds, ribs, shells, etc.)
Create blend features
Create sweep features
Create patterns
Manipulate features
Create detail drawings
Create assemblies
Create assembly drawings

Apply model cosmetics
Implement relations
Capture design intent of a project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 2110 - Advanced Creo Parametric (Pro/ENGINEER) (4)

This course is designed to increase the productivity of the novice Creo Parametric user. This project based course covers advanced geometry creation topics of Creo Parametric (formerly Pro/ENGINEER) including variable section sweeps, blends, advanced rounds, drafts, and advanced patterns. Feature management topics including family tables, user-defined features, Pro/Program, layouts, and simplified representations will also be covered. Assembly topics covered include repeat and replace components, component interfaces and flexibility, interchange assemblies and top down assembly design. Surface modeling will be used to solve problems that basic feaures cannot, and sheet metal will be introduced. Rapid prototyping may be discussed as well.

Prerequisite: ENGC2100 or equivalent or three months' work experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create datum features
Create advanced blends
Create advanced sweeps
Employ advanced patterns
Create user defined features
Apply draft features
Apply advanced rounds
Use special features
Create geometry using parameters and relations
Create family tables
Create component interfaces
Assign component flexibility
Use advanced assembly commands
Employ data sharing commands
Create top-down assemblies
Create interchange assemblies
Program solid models using Pro/Program
Create layouts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGC 2200 - Engineering CAD Technology Internship (3 - 4)

The student will receive 40 hours of on-site instruction in the drafting department of a `host` company for each creditfor which he/she has registered. The student may register for 3 or 4 credits. The student will work in an industrial drafting environment on learning objectives mutually agreed to by instructors and a host-business. The student is responsible for finding and setting up the internship position prior to registering for the course. Student performance will be monitored by the instructor and evaluated by the employer.

Prerequisite: Instructor approval and prior completion of 50 percent of the Engineering CAD Technology program and an internship position in a host company

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the "Internship Agreement" signed by the student, employer, and instructor and will be tailored to the experiences available at the internship site.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 3-4

ENGL - English

ENGL 0901 - Reading Techniques (3)

This course is designed for students who need to improve basic reading skills necessary for success in college course work. Reading Techniques will focus on the development of vocabulary strategies and literal comprehension techniques.

Prerequisite: Qualifying score on reading assessment test OR ESOL0821, ESOL0822 and ESOL0823. Basic

computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage the college reading process
Develop test taking skills for objective tests in the academic and technical college setting
Apply text marking techniques to academic and technical readings
Develop skimming and scanning techniques for academic and technical readings
Determine word meaning from context clues in academic and technical readings
Detect academic and technical word meaning from word parts
Identify dictionary meaning that matches context within academic and technical vocabulary
Expand general, academic and technical vocabulary including figurative and connotative meanings
Identify implied and stated main ideas in academic and technical material Identify details in academic and technical material
Identify patterns of organization in academic and technical material Categorize transitions in academic and technical material

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 0921 - Applied Reading Techniques (3)

This course is structured to give students an opportunity to apply the basic vocabulary and comprehension skills learned in Reading Techniques. In addition, the course will focus on higher level thinking skills including drawing inferences and reading critically.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 with a grade of "C" or better. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage reading and studying of college textbook material
Summarize academic and technical readings objectively
Paraphrase academic and technical readings objectively
Adapt college reading process to task
Apply word recognition strategies to college level academic and technical vocabulary
Acquire college level academic and technical vocabulary words
Infer meaning from explicit and implied college level text information
Draw conclusions from explicit and implied college level text information

Apply college reading strategies to informational, expository, and persuasive text
Apply critical reading skills to college level text
Construct meaning from college level text

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 0930 - Fundamentals of Writing (4)

Writing is an essential element for successful communication in work and school settings. This course is designed to introduce students to the kinds of writing they will need to use in college. Students in this course will use the standards of American Written English to explore and produce writing in many different modes, moving from paragraphs and summaries to short essays.

Prerequisite: Qualifying score on writing assessment test OR ESOL0831 with a grade of "C" or better and the ability to word process simple documents. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write grammatically correct sentences of varying patterns
Correct mechanical errors in written documents
Write unified paragraphs with appropriate transitions
Analyze audience, purpose, tone, and stylistic technique in various written documents as models for persuasive and informative writing
Write documents for a clear audience and purpose
Write summaries from various sources
Write short essays
Use the writing process
Distinguish between main ideas and supporting ideas
Write topic sentences that address purpose and audience
Write thesis statements that reflect purpose and mode
Develop topics with substantive specific details and examples
Incorporate secondary sources
Cite secondary sources appropriately
Demonstrate effective real-time writing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ENGL 0935 - Fundamentals of Writing Plus (6)

Writing is an essential element for successful communication in work and school settings. This course is designed to introduce students to the kinds of writing they will need to use in college. Students in this course will use the standards of American Written English to explore and produce writing in many different modes, moving from paragraphs and summaries to short essays. This course will move at a slower pace than ENGL 930, providing additional instructional time to focus on sentence-level skills, including but not limited to pronouns, prepositions, punctuation, articles, verb forms, and sentence structure.

Prerequisite: Qualifying score on writing assessment test OR ESOL0831 with a grade of "C" or better and the ability to word process simple documents. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write grammatically correct sentences of varying patterns
Correct mechanical errors in written documents
Write unified paragraphs with appropriate transitions
Analyze audience, purpose, tone, and stylistic technique in various written documents as models for persuasive and informative writing
Write documents for a clear audience and purpose
Write summaries from various sources
Write short essays
Use the writing process
Distinguish between main ideas and supporting ideas
Write topic sentences that address purpose and audience
Write thesis statements that reflect purpose and mode
Develop topics with substantive specific details and examples
Incorporate secondary sources
Cite secondary sources appropriately
Demonstrate effective real-time writing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 6

ENGL 1010 - Business English (3)

The majority of the time in this course will be spent on the spelling, grammar, punctuation, proofreading, and editing skills needed for success in the work world. Students will then apply these skills to produce a few short documents using correct English with appropriate formatting.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930 or ESOL0841

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Label parts of speech
Identify parts of the sentence
Identify proper word choice from those that look/sound alike
Recognize phrases
Recognize clauses
Identify incorrect sentences/word groups
Revise text to correct sentences
Apply punctuation rules
Apply American standard grammar rules to business text
Write a business document

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 1021 - Essay Fundamentals (3)

This writing course provides instruction designed to prepare students for college-level writing courses. Students will learn conventions and techniques for clear written communication, using a variety of essay development strategies and writing contexts, with special attention to audience and purpose. Students will develop their ability to identify and correct common sentence-level errors in their own writing. In addition, students will be introduced to basic methods for incorporating ideas of others into their writing, as well as thinking and reading critically. This course is also offered in a Fast Track version, which enables students to take ENGL1021 and ENGL2121 in a single semester.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930 with a grade of "C" or better. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use different writing styles for different rhetorical situations
Employ a writing process involving invention, drafting, revision, and editing
Create texts that demonstrate coherence and unity in real-time writing
Create texts that demonstrate coherence and unity in process writing
Present focused ideas in writing, using relevant evidence
Analyze the ideas of others
Integrate the ideas of others in writing
Revise texts to make them comprehensible for specific audiences and writing contexts, using Standard Edited American English

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 1026 - Writing for Careers (3)

This course provides an introduction to a variety of documents commonly used in the workplace. Course emphasis is on planning, organizing, and writing effective workplace and technical documents using effective writing skills. Specific types of documents may include, but are not limited to e-mails, memos, letters, short reports, and web documents.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine the needs of specific audiences
Determine the purpose of a document
Determine the appropriate type of document for a certain situation
Write effective workplace documents
Follow standard formatting guidelines for common workplace documents
Use language appropriate for the audience
Use layout techniques to enhance the meaning of the text
Create graphics that support the text
Use appropriate organizational strategies for different writing situations
Apply rules of Standard Edited American English

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 1030 - Fast Track Essay Fundamentals (3)

This is an accelerated course that is designed to be taken in the same semester as English 2121, Writing and Research. This writing course provides instruction designed to prepare students for college-level writing courses. Students will learn conventions and techniques for clear written communication, using a variety of essay development strategies and writing contexts, with special attention to audience and purpose. Students will develop their ability to identify and correct common sentence-level errors in their own writing. In addition, students will be introduced to basic methods for incorporating ideas of others into their writing, as well as thinking and reading critically.

Prerequisite: Qualifying score on writing assessment test OR ENGL0930 or ENGL0935 with a grade of "C" or better. Basic computer literacy skills required.

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use different writing styles for different rhetorical situations
Employ a writing process involving invention, drafting, revision, and editing
Create texts that demonstrate coherence and unity in real-time writing
Create texts that demonstrate coherence and unity in process writing
Present focused ideas in writing, using relevant evidence
Analyze the ideas of others
Integrate the ideas of others in writing
Revise texts to make them comprehensible for specific audiences and writing contexts, using Standard Edited American English

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 3

ENGL 1050 - Writing for Health Care (3)

This course will help students to develop an understanding of professional writing skills as well as a familiarity with academic writing. This will help them develop practical writing skills for their work in the health care field and in the college classroom. Process writing and real-time writing will both be emphasized.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use the writing process to compose basic paragraphs and a short essay
Create documents including appropriate information and language based on audience need
Document information clearly and accurately using concrete description
Create basic American Psychological Association (APA) in-text citations and reference entries
Identify facts versus opinion
Write in complete sentences that include clear subjects and verbs
Write in both active and passive voices
Relate a series of events in clear, accurate order
Demonstrate effective real-time writing
Apply the conventions of Standard Edited American English to all written documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ENGL 1500 - Special Topics in English (1 - 4)

This course provides a forum for the innovation of new curriculum or of delivery methods. The specific course description, prerequisites, and course goals are on file with the Registrar. And the number of credits and contact hours varies depending on what is required to meet the specific goals of the course.

Prerequisite: Vary depending on the Special Topic

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals will be negotiated with Instructor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1-4

ENGL 2001 - Workplace Correspondence (2)

This course will provide instruction in selecting, organizing, and writing effective workplace correspondence. The course will cover a variety of methods of correspondence commonly used in the workplace including, but not limited to, letters, memos, e-mail, instant messaging, text messaging, and wikis. Areas of study will include selecting the appropriate medium for the message and using common guidelines for different mediums. This course is designed primarily for working students who want to improve the writing skills they are already using in the workplace.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze audience needs in specific workplace situations
Select the appropriate medium for a variety of workplace correspondence situations
Use the writing process to compose effective workplace correspondence
Identify appropriate tone for common workplace situations
Identify common problems encountered in workplace correspondence
Implement solutions for common workplace correspondence problems
Write effective workplace correspondence for common workplace situations and audiences in a variety of mediums
Follow the rules of Standard Edited American English in all writing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

MnTC Goal Areas: 1.

ENGL 2050 - Short Form Composition and Reporting (4)

This course emphasizes both process and real-time writing. Students will develop the ability to accurately produce on-the-spot writing for a variety of occasions that call for an accelerated writing process. This may include summary, reaction, analysis, evaluation, and reporting. Students will also develop more extensive pieces that incorporate essential skills of library literacy, source evaluation, and source integration. Throughout the course, students will sharpen their observation skills, awareness of audience and purpose, and critical thinking.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Employ the writing process, both accelerated and extended
Produce effective real-time writing

Compose academic paragraphs, short essays, and reports
Incorporate appropriate information and language based on audience need
Document information clearly and accurately using concrete description
Analyze fact versus opinion
Describe a series of events in clear, precise, and accurate order
Write in both the active and passive voices
Locate academic research sources
Evaluate sources for accuracy, credibility, appropriateness, and relevance
Synthesize information from various sources
Create APA in-text citations and reference entries
Utilize technology competently in the writing process
Apply the conventions of Standard Edited American English to all written documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

MnTC Goal Areas: 1.

ENGL 2121 - Writing and Research (4)

This course emphasizes the process of writing expository and persuasive essays using effective writing skills and a variety of research techniques. Students will also gain skills in critical reading and logical reasoning.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use the writing process to compose academic essays
Apply the conventions of academic writing
Critically evaluate sample essays
Analyze the needs of different types of audiences
Select essay content based on audience need and appeal
Demonstrate effective real-time writing
Locate academic research sources
Evaluate sources for accuracy, appropriateness, and relevance
Synthesize information from various sources with original ideas
Cite sources using a recognized style
Identify elements of logical arguments
Avoid logical fallacies
Create coherent arguments
Apply the conventions of Standard Edited American English to all written documents
Use technology competently in the writing process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

MnTC Goal Areas: 1.

ENGL 2125 - Technical Writing (3)

This course will enhance students` abilities to write effective technical reports. Emphasis will be on effective writing styles, audience analysis, ethics, intercultural issues, documentation of sources, designing visual aides, and practicing outlining techniques to create instructions and process reports. Students also will plan, organize, and complete a persuasive proposal.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use the writing process to compose effective technical documents
Analyze the needs of specific audiences in specific writing situations
Differentiate among several different rhetorical strategies
Identify intercultural issues in technical writing
Select information appropriate for audience
Design technical documents appropriate for specific audiences and writing situations
Analyze sources for accuracy and relevance
Use secondary sources to persuade
Apply conventions of technical documents to original compositions
Analyze technical writing samples for effectiveness
Apply the conventions of Standard Edited American English to all written documents
Use technology competently when composing technical documents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MnTC Goal Areas: 1.

ENGL 2130 - Introduction to Creative Writing (3)

This introductory course will provide a broad overview of creative writing. Students will become familiar with the

contemporary conventions of various genres. Emphasis will be on two or more of the following: short stories, creative nonfiction, poetry, and plays. Students will study the work of published authors to learn about techniques employed by experienced writers and will complete short writing assignments that demonstrate a variety of creative writing techniques as well as a revised collection of creative work in the genre of their choice.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify terms associated with creative writing
Recognize creative writing styles
Use figurative language
Use creative writing techniques in multiple genres
Identify similarities among creative writing genres
Identify differences between creative writing genres
Identify effects of creative writing techniques on audiences
Analyze structure in published works
Identify plot through the critical reading of texts
Apply editing techniques
Analyze the meaning of texts
Identify point of view

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 1 & 6.

ENGL 2135 - Special Topics: English Composition Transfer Curriculum (1)

This class is meant for students who have already taken a 3 semester credit freshman level composition class at another institution. This course assumes the student has already achieved an understanding of writing basics: intro, body, conclusion; organization; outlining; the thesis; etc. Therefore, this class will focus on the research paper; specifically, an argument paper. This paper will be 6-10 pages in length, and will give students the opportunity to demonstrate their writing proficiency, their understanding of research and citation, and their critical thinking and reading skills.

Prerequisite: Accredited 3 semester credit, freshman level composition class or its equivalent. This class is only for students who have taken and successfully completed a 3 semester credit composition course. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Synthesize information from various sources with original ideas
Create a coherent argument

Cite sources using a recognized style
Apply the conventions of Standard Edited American English to all written documents
Use technology competently in the writing process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

MnTC Goal Areas: 1.

ENGL 2140 - Topics in Literature: Trades and Industry (3)

This course explores, through literature, the issues relevant to various professions. Topics will be varied and selected by the instructor and may change every term. Examples of topics include but are not limited to: Literature of the Working Class, Garden Literature, Literature of Health Sciences, Literature in Graphic and Visual Arts, Transportation Literature, Literature of the Culinary Arts. Students will engage in understanding multiple viewpoints; and reflect on style, voice, and other elements of critical reading.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze structure in literature
Analyze ideas of literature
Use basic vocabulary to discuss literary works
Critique writing styles
Explain different purposes of literature
Describe trade and industry themes in literature
Analyze the use of trade and industry in published works
Explain the influence of trade and industry in literature
Analyze the meaning of texts
Describe the effects of trade and industry use in literature on audiences
Research trade and industry in literature
Explain rationale for trade and industry in literature
Analyze the influence of literature on trade and industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6.

ENGL 2200 - Introduction to Cinema (3)

This is a writing intensive course where students study and analyze the basic elements of a critical understanding of film: story elements; visual design; cinematography and color; editing and special effects; functions of sound and music; styles of acting and directing; and functions of genre.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026 or ENGL1030 with a grade of "C" or better and Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the various elements used to develop a film and "tell a story"
Explain the terms and components associated with film as an art form
Interpret the use of expressive techniques in the visual design of film making
Distinguish the uses of technique in film cinematography
Explain how a film uses a variety of techniques to solicit a response
Break down a film into parts to show how the pieces comprise the whole
Explore films of various genres
Analyze how acting styles and performances are used to develop a film's story and effectiveness
Explain how a film goes from concept to storyboard to production
Discriminate between "good" and "bad" films
Critique all components of a film

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6.

ENHS - Environmental Health and Safety

ENHS 1000 - Introduction to Environmental Health and Safety (1)

The objective of this course is to develop the student's ability to minimize health risk by implementing proper routine work practices and by responding to releases of hazardous substances. The individual’s actions will result in the protection of human health, property and the environment. This course will provide the student with information required for compliance with hazardous materials handling regulations and successful completion of this course will meet OSHA`s general requirements for `First Responder Awareness Level` training.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify hazardous materials regulations and an individual's Right to Know
Identify the chemistry of hazardous materials
Categorize hazardous materials
Use a Material Safety Data Sheet (MSDS)
Demonstrate proper use of personal protective equipment
Identify characteristics and precautions for common hazardous materials
Explain ergonomics and electrical safety
Evaluate waste management practices
Identify emergency response procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ENHS 1005 - Introduction to Industrial Processes (3)

This course introduces students to industrial, manufacturing, construction, and business processes and organization. The course will focus on contemporary designs of the work place and the role that the safety function plays.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore business classifications
Compare organizational structures of businesses
Interpret the need of safety relating to businesses
Defend the priorities of safety within various businesses
Relate the Six-Sigma process to business practices
Identify issues relating to safety in businesses
Define the role and responsibilities of safety director
Relate the process of LEAN to business practices
Demonstrate understanding of ISO and OSHA VPP certification

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1010 - Introduction to Safety and Health (3)

This course introduces students to the safety and health field. Topics include general safety and health concepts, terminology, overview of historical developments, program concepts, workers compensation basics, hazard recognition, and safety assessment process.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify who is covered by OSHA requirements
Compare States and Federal OSHA programs
Differentiate Between State and Federal processes
Interpret appropriate OSHA standards
Relate examples of workplace hazards
Correlate organizations responsibilities for pre-exposure communication and training systems
Identify the role of workers compensation insurance
Outline the safety assessment process
Demonstrate understanding of required record keeping

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1015 - Fire Protection (3)

This is an introductory course in fire protection. Topics include chemistry of fire, behavior of fire, fire hazards, fire suppression systems.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose the fire tetrahedron
Identify the physical states of matter
Assess the hazards potential of liquids fire fuels
Contrast classes of fires
Differentiate between the four phases of fire
Compare public and private fire departments
Develop a model emergency action plan
Explore life safety and building codes
Identify different types of fire identification systems
Differentiate between the different types of fire suppression systems
Identify common fire hazards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1020 - Hazard Recognition and Control (3)

This course will address hazard recognition in both construction and industrial environments. Common engineering practices and procedures to remedy these hazards will be examined. New technology will be evaluated relative to safety hazard control. Students will be exposed to real life situations and required to formulate solutions to protect workers and resources.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Practice site safety
Detect hazardous substance presence
Identify hazards
Analyze likely behavior
Estimate exposure zone
Characterize likely harm
Select response
Practice medical surveillance
Monitor progress

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1025 - Industrial Hygiene (3)

This course is devoted to the principles of industrial hygiene and toxicology and includes the study of the theory and practices of industrial hygiene and the use of basic industrial hygiene equipment and instrumentation equipment. Topics include recognition, evaluation and control of hazards related to toxic chemicals, ionizing and non-ionizing radiation, noise, biological substances, abnormal temperatures and pressures, and air-borne contaminants.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain terminology utilized in industrial hygiene
Analyze routes of entry
Identify potential health hazards in the workplace
Describe effects of health hazard exposure on the worker
Distinguish allowable exposure limits to workers
Differentiate between potential contaminants in the workplace
Prioritize methods of worker protection
Defend rationale to use potential solutions
Construct Hygiene Program

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1030 - Ergonomics (3)

This course covers a range of relationships between people and machines. Of primary significance for safety are the design of the items to minimize injuries and errors that lead to accidents and injuries.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe ergonomics
Explain human factors engineering
Diagnose the work area
Explain physical factors that affect work
Examine hand tool design hazards
Generalize corrective procedures for hand tool deficiencies
Explain repetitive motion
Compare job cycle and time restraints
Discuss management responsibility
Compare governmental ergonomics programs
Analyze ergonomics evaluation to the hiring process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1035 - Safety and Health Program Management (3)

This course develops fundamental knowledge about safety policy, procedures, practices, and administrative controls for safety. Topics include: company safety policies and procedures, program administration, record keeping, training planning, delivery and management, and evaluation of program effectiveness.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate roles of Safety Manager and Corporate Management
Select goals and objectives for program
Identify needs for safety policies
Review role of safety committee and safety management
Identify safety committee training needs
Determine the requirements for accident/injury records
Apply trend analysis to required OSHA records
Identify components of safety program evaluations
Determine the role of Improvement Project Teams
Describe the components of a Total Safety Management Program

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1040 - Safety Laws, Regulations, and Standards (3)

This course covers the process, sources and applications for minimum safety requirements established by laws, regulations, standards and codes. Included are: Federal, State, and Local laws, agencies, regulations, codes, and voluntary standards.

Prerequisite: ENHS1020

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Relate Code of Federal Regulation 1910 and Occupational Safety and Health Administration to general industry
Correlate impact of Mining Safety and Health Administration standards on the construction industry
Relate Department of Transportation regulations to the transportation ofbusiness products and practices
Compare Environmental Protection Agency rules and Pollution Control Agency rules to business practices and production
Explain the relationship of Federal Railroad Administration regulations to business transportation practices
Determine agency jurisdiction
Discuss voluntary compliance
Explain the relationship of Federal Aviation Agency regulations to business practices
Identify impact of consensus standard formulating agencies on businesses
Relate Code of Federal Regulation 1910 and Occupational Safety and Health Administration standards to construction businesses

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1045 - Modern Theories of Safety Programming (3)

Students in this course will examine Behavior Based Safety Practices and other newer theories utilized in safety programming. Students will be required to develop a model safety program.

Prerequisite: ENHS1010 and ENHS1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare differing styles of management
Characterize a Behavior Based Safety Program
Relate Total Quality Management to Total Safety Management
Describe the Regulatory Approach to Safety management
Outline the Critical Incident Technique of safety programming
Correlate the impact of voluntary compliance with ISO 14000 (International Organization for Standardization)
Demonstrate understanding of OSHA's VPP Program (Voluntary Protection Programs)
Describe Alliance Programs with OSHA Consultation
Develop a model safety program
Examine Employee Participation Practices in safety programming

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1050 - Internship (3)

This course is designed to provide the student with a field experience to observe how safety procedures and/or policies are implemented in the business, industry, and/or construction environments. Students may apply for life experience credit with three or more years of professional level safety experience.

Prerequisite: ENHS1005, ENHS1010, ENHS1020, ENHS1040, and ENHS1045

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 SOE: 3

ENHS 1110 - Chemistry of Hazardous Materials (3)

This course will provide the student with examples of chemical and physical properties. Treatment technology for the various classes of hazardous materials and selected examples of chemical incompatibilities common to hazardous materials will be discussed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze atomic structure
Explain the relationship between group number and chemical structure
Categorize trends
Differentiate terms of toxicology
Identify ionic bonding
Apply the octet rule
Characterize gas laws
Contrast polar and non-polar compounds
Analyze a hazardous materials scene
Explain spectroscopy

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

ENHS 1120 - Hazardous Materials Management and Handling (1)

This course is designed to provide the student with information and skills required for the safe performance of daily work activities involving hazardous materials. The emphasis of this course is safe work practices.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine major hazard class
Identify safe work practices
Determine properpersonal protective equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ENHS 1130 - Personal Protective Equipment (2)

This course is designed to provide the student with information required to select, use, maintain and safely don and doff personal protective equipment. Topics covered include equipment used for the protection of the respiratory system, head, face, hands, feet, and the body. Students will be able to determine the levels of protection based on EPA guidelines after completion of the class.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate risks
Diagram job hazard analysis
Differentiate types of hazards
Select personal protective equipment
Distinguish types of respiratory protection
Classify chemical protective clothing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

ENHS 1140 - Incident Management for Business and Industry (1)

This course is designed to provide the student with the training and information necessary to safely respond and manage emergencies. Topics covered include incident command, pre-planning, communications, and safety.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize National Incident Management System principles
Use Incident Command System principles
Prepare All-Hazard Emergency Operations Plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

ESOL - English for Speakers of Other Languages

ESOL 0821 - Grammar/Writing II (5)

Develop basic writing skills. Students work on grammar, short paragraphs, and editing, using the standards of written American English. Classes utilize a computer lab to practice basic word processing and other basic computer skills.

Prerequisite: Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write short paragraphs with all sentences relevant to the topic
Develop introduction, body and conclusion
Organize writing in a logical sequence
Utilize simple present verb forms
Utilize present progressive verb forms
Utilize simple past verb forms
Compose simple sentences
Utilize basic sentence structure such as subject-verb-direct object
Utilize basic "be" main verb sentence structure
Apply basic punctuation
Develop use of the writing process
Develop basic editing strategies
Apply basic standard mechanics
Demonstrate basic word processing skills
Demonstrate basic computer skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5

ESOL 0822 - Reading II (4)

This course is for students who need to improve basic reading skills by practicing key reading strategies. It focuses on increasing students' ability to comprehend a variety of written material. Context clues and dictionary skills will also be covered to increase vocabulary.

Prerequisite: Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify key words in a text
Utilize pre-reading strategies to enhance comprehension
Identify the part of speech and application of a word using context
Apply context clues to determine word meaning
Utilize scanning as a reading strategy
Utilize skimming to develop a context
Utilize skimming to find main ideas
Identify main ideas in a variety of text types
Develop individualized strategies for learning vocabulary words
Develop individual learning strategies
Apply text marking techniques
Develop basic dictionary skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ESOL 0823 - College Communication Skills II (3)

Communication skills are critical for success in college. This course provides the knowledge and practice necessary to improve basic listening comprehension, speaking, and pronunciation skills in American English. Students work on these skills through activities such as listening to lectures, podcasts, and videos, taking notes, doing dictations, participating in discussions, interviewing, and giving presentations.

Prerequisite: Qualifying score on ESL reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Take notes from orally presented material
Identify main ideas within orally presented material
Identify key details within orally presented material
Discuss topics relevant to the level of the material
Develop vocabulary
Demonstrate the ability to bring real-life communication into the classroom
Present orally
Demonstrate an awareness of pronunciation rules in American English
Develop strategies to improve pronunciation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ESOL 0831 - Grammar/Writing III (5)

Develop college writing skills. Students work on grammar, paragraphs, and editing, using the standards of written American English. Classes utilize a computer lab to practice writing, word processing, editing, and other basic computer skills.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0821 and ESOL0822 and ESOL0823 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write unified paragraphs with clear introduction, body, and conclusion
Apply a variety of cohesive devices (transitions, pronouns, etc.) within paragraphs
Produce various types of writing such as descriptive and expository
Develop basic real-time writing skills
Utilize simple present verb forms
Utilize present progressive verb forms
Utilize simple past verb forms
Write grammatically correct sentences of varying patterns
Correct sentences that contain grammatical errors

Develop effective use of the writing process
Develop strategies to improve editing skills
Apply basic standard mechanics
Develop basic word processing skills
Demonstrate basic email skills
Demonstrate basic computer skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5

ESOL 0832 - Reading III (4)

This course is for students who need to improve basic reading skills necessary for success in college course work. Reading III focuses on the development of vocabulary strategies and literal comprehension techniques.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0821 and ESOL0822 and ESOL0823 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage the college reading process
Develop test taking skills for objective tests in the college setting
Apply text marking techniques to academic and technical readings
Develop skimming and scanning techniques for academic and technical readings
Determine word meaning from context clues in academic readings
Detect academic word meaning from word parts
Identify dictionary meaning that matches context within readings
Expand general and academic vocabulary including figurative and connotative meanings
Identify implied and stated main ideas in readings
Identify details in academic and technical readings
Identify patterns of organization in academic and technical readings
Categorize transitions in academic and technical readings
Summarize a passage

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ESOL 0833 - College Communication Skills III (3)

Communication skills are critical for success in college. This course provides the knowledge and practice necessary to improve listening comprehension, speaking, and pronunciation skills in college-level American English. Students work on these skills through activities such as listening to lectures, podcasts, and videos, taking notes, doing dictations, participating in discussions, interviewing, and giving presentations.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0821 and ESOL0822 and ESOL0823 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate basic note-taking skills
Identify main ideas within an oral presentation
Identify key details within an oral presentation
Discuss college level academic topics
Develop academic vocabulary
Demonstrate the ability to bring real-life communication into the classroom
Present orally
Demonstrate an awareness of pronunciation rules in American English
Develop strategies to improve pronunciation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ESOL 0841 - Grammar/Writing IV (5)

Develop college writing skills. Students work on more complex grammar, editing, and academic writing, using the standards of written American English. Classes utilize a computer lab to practice writing, word processing, editing, and other basic computer skills.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0831 and ESOL0832 and ESOL0833 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write at the essay level

Write in response to readings
Produce various types of writing such as descriptive, expository, and persuasive
Demonstrate effective real-time writing
Produce writing with clear introduction, body, and conclusion
Utilize a variety of cohesive devices (transitions, pronouns, etc.) within and between paragraphs
Write grammatically correct sentences of varying patterns
Edit written work
Demonstrate effective use of the writing process
Demonstrate use of auxiliary resources such as dictionary, thesaurus, and computer tools in the writing process
Apply standard mechanics
Demonstrate basic word processing skills
Demonstrate effective email skills
Apply standard formatting
Demonstrate basic computer skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5

ESOL 0842 - Reading IV (4)

This course gives students an opportunity to apply the basic vocabulary and comprehension skills learned in Reading III. In addition, the course focuses on higher level thinking skills including drawing inferences and reading critically.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0831 and ESOL0832 and ESOL0833 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Manage reading and studying of college textbook material
Summarize academic/technical readings
Paraphrase academic/technical readings
Adapt college reading process to task
Apply word recognition strategies to college level vocabulary
Acquire college level vocabulary
Infer meaning from explicit and implied college level text
Draw conclusions from explicit and implied college level text
Apply college reading strategies to informational text
Apply college reading strategies to expository text
Apply critical reading skills to college level text
Construct meaning from college level text

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

ESOL 0843 - College Communication Skills IV (3)

Communication skills are critical for success in college. This course provides the knowledge and practice necessary to further improve listening comprehension, speaking, and pronunciation skills in college-level American English. Students work on these skills through activities such as listening to lectures, podcasts, and videos, taking notes, doing dictations, participating in discussions, interviewing, and giving presentations.

Prerequisite: Qualifying score on ESL reading assessment test OR ESOL0831 and ESOL0832 and ESOL0833 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Take notes from academic lectures
Identify main ideas within an oral presentation
Identify key details within an oral presentation
Discuss college level academic topics
Develop academic vocabulary
Demonstrate the ability to bring real-life communication into the college classroom
Present orally
Demonstrate an awareness of pronunciation rules in American English
Develop strategies to improve pronunciation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

ESOL 0850 - ESOL Skills Workshop (4)

This course will increase students' skills in grammar, writing, and academic communication needed for success in college and the workplace. This course is designed for students who need to complete the required ESOL credits outside of their regular cohort. At the beginning of the course, each student will meet with the instructor to develop a study plan.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write unified paragraphs with clear introduction, body, and conclusion
Use a variety of cohesive devices (transitions, pronouns, etc.) within paragraphs
Develop basic real-time writing skills
Develop basic word processing skills
Demonstrate basic email skills
Demonstrate basic computer skills
Demonstrate basic note-taking skills
Discuss college level academic topics
Develop academic vocabulary
Present orally
Demonstrate an awareness of pronunciation rules in American English
Develop strategies to improve pronunciation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

FDAS - Ford Automotive Student Service Educational Training Program (ASSET)

FDAS 1250 - Ford Gasoline Engine Performance I (2)

The purpose of this course is to provide the student with the knowledge and experience necessary to properly service today`s computer controlled and conventional ignition systems as used on late model Ford vehicles.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Summarize four-stroke gasoline engine operation
Explain valve-train operation
Describe upper engine components
Interpret ignition system related wiring diagrams
Research electronic engine control components
Use electronic service equipment
Diagnose electronic engine control components

Evaluate Ford ignition systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FDAS 1260 - Ford Gasoline Engine Performance II (3)

This course is designed to teach the student how the engine systems work together to provide superb engine performance while maintaining fuel economy and reducing emission.

Prerequisite: FDAS1250

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the purpose of the basic elements of electronic systems
Identify the function of basic electronic components
Define reference voltage
Identify types of electronic switches
Define the purpose of voltage divider circuits and identify the various types
Define the purpose of voltage producing sensors and identify the various types
Define integrated circuits
Identify various types of output signals
Analyze module diagnostic capabilities
Determine the module programming methods
Describe the operation of a PCM controlled charging system
Evaluate the Electronic Throttle Control system (ETC) operation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 1420 - Ford Driveline (3)

This course will detail the fundamentals, operation and repair of clutches, differentials, transfer cases, manual transmissions and transaxles used on Ford vehicles.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate system components using precision measuring equipment
Interpret electronic service information
Differentiate clutch systems
Diagnose differential components
Explain operation of transfer cases
Perform powertrain repair procedures
Calculate gear ratios
Examine synchronizer operation
Apply principles of mechanical concepts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 1500 - Engine Repair (3)

This hands-on course teaches proper disassemble, assembly, repair, and diagnostic techniques for Ford engines. This course also includes how to identify and measure critical clearances.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose engine concerns
Isolate engine noise problems
Perform precision engine measurements
Research engine disassembly and assembly procedures
Identify engine cooling sub-systems
Perform engine overhaul procedures
Identify proper gasket sealing procedure
Interpret scan tool results
Describe the diagnostic procedures for identifying the root cause of engine failures
Perform specific engine diagnostic tests
Diagnose the front end accessory drive

Generate an engine cost factor analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 1550 - Engine Operation (2)

This will consist of basic engine theory of operation, types of engines, and preventative maintenance service used in Ford vehicles.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify four-stroke cycle engine operation
Describe engine bearing construction
Compare short blocks and long blocks
Describe the process for shipping a replaced engine
Perform engine oil leak tests
Categorize engine types
Explain engine cooling system
Describe engine sub-systems
Utilize electronic service publications
Evaluate system components using precision measuring equipment
Use electronic service equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FDAS 1611 - Noise Vibration Harshness (NVH) (3)

This course will provide the student with the skills and knowledge to pinpoint a NVH concern on a Ford motor company vehicle.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply principles of mechanical concepts
Evaluate NVH concerns using precision measuring equipment
Identify common NVH concerns
Perform driveline angle measurements
Discriminate wind noise concerns
Interpret electronic service information
Perform match mount tire diagnostic procedures
Identify the frequency of different noise concerns
Describe the function of NVH diagnostic tools
Demonstrate safe service and repair principles
Inspect driveline angles

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 1701 - Ford Climate Control (3)

The purpose of this course is to provide the student with the knowledge and skills to diagnose and repair heating and air-conditioning systems used on Ford and Lincoln-Mercury vehicles. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify air conditioning system types
Use electronic service equipment
Apply principles of mechanical concepts
Demonstrate safe service procedures
Interpret air conditioning system wiring diagrams
Explain the refrigerant cycle
Perform air conditioning system tests

Diagnose cooling problems
Identify heating concerns
Complete refrigerant recovery certification
Explain heat theory principles
Access on-board diagnostic information

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 1750 - Ford Fuel Systems (2)

This course will detail the fundamentals, operation and repair of Ford fuel and air inlet controls.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform Fuel Pressure Tests
Identify type of fuel delivery system
Evaluate Parameter Identifiers (PIDS) test results
Perform manifold pressure tests
Identify the type of controlled air inlet system
Describe air/fuel mixing
Explain the Powertrain Control System (PCM) strategies
Explain the theory and operation of the fuel delivery system
Discriminate between the fuel system and the air system
Explain the safety procedures that must be followed when servicing a flex fuel vehicle
Identify the various alternative fueled vehicles

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FDAS 2030 - Ford Dealership Internship III (6)

This course will provide the student on-the-job training in a Ford or Lincoln-Mercury dealership. The student will use knowledge learned during previous courses and put into practice the technical skills learned on customers` vehicles.

Prerequisite: Successful completion of FDAS1250, FDAS1400, FDAS1410, and FDAS1701 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns
Repair vehicles to manufacture specifications
Demonstrate safe service repairs
Determine customer needs from repair order information
Evaluate vehicle prior service history
Demonstrate professional integrity
Practice ethical vehicle repair procedures
Practice environmentally safe working habits
Work independently
Cooperate with co-workers
Perform maintenance work on customer vehicles
Demonstrate commitment to the automotive profession
Manage change while balancing work and other areas of life
Recognize and value others
Follow supervisor's direction
Apply communication skills
Evaluate system components using precision measuring equipment
Make repair decisions using the Ford SSCC problem solving techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

FDAS 2040 - Ford Dealership Internship IV (6)

This course will provide the student on-the-job training in a Ford or Lincoln-Mercury dealership. The student will use knowledge learned during previous courses and put into practice the technical skills learned on customers` vehicles.

Prerequisite: Successful completion of FDAS1260, FDAS2230, and FDAS2240 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns

Repair vehicles to manufacture specifications
Demonstrate safe service repairs
Determine customer needs from repair order information
Evaluate vehicle prior service history
Demonstrate professional integrity
Practice ethical vehicle repair procedures
Practice environmentally safe working habits
Work independently
Cooperate with co-workers
Perform maintenance work on customer vehicles
Demonstrate commitment to the automotive profession
Manage change while balancing work and other areas of life
Recognize and value others
Follow supervisor's direction
Apply communication skills
Evaluate system components using precision measuring equipment
Make repair decisions using the Ford SSCC problem solving techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

FDAS 2055 - Ford Dealership Summer Internship I (4)

This course will provide the student on-the-job training in a Ford or Lincoln-Mercury dealership. The student will use knowledge learned during previous courses and put into practice the technical skills learned on customers` vehicles.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns
Demonstrate safe service repairs
Determine customer needs from repair order information
Evaluate vehicle prior service history
Demonstrate professionalism
Perform ethical vehicle repair procedures
Exhibit environmentally safe working habits
Work independently
Cooperate with co-workers
Perform maintenance work on customer vehicles
Demonstrate commitment to the automotive profession
Prioritize work schedules

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 4

FDAS 2060 - Ford Dealership Summer Internship II (4)

This course will provide the student on-the-job training in a Ford or Lincoln-Mercury dealership. The student will use knowledge learned during previous courses and put into practice the technical skills learned on customers` vehicles.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns
Manage change while balancing work and other areas of life
Apply communication skills
Evaluate system components using precision measuring equipment
Demonstrate professionalism
Perform ethical vehicle repair procedures
Exhibit environmentally safe working habits
Demonstrate professional integrity
Practice environmentally safe working habits
Work independently
Repair vehicles to manufacture specifications
Prioritize work schedules

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 4

FDAS 2230 - Ford Car Transmissions (3)

This course will detail the fundamentals, operation and repair of automatic transmissions used on current Ford

passenger cars.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the normal [hydraulic-mechanical] operation of an automatic transaxles
Identify the function, construction, location, and operation of each major component of selected Ford automatic transaxles
Describe power flow through a typical automatic transaxle
Explain hydraulic system theory for an automatic transaxle
Identify transaxle fluid characteristics
Identify typical symptoms found in automatic transaxle with hydraulic or mechanical causes
Identify the normal [electronic] operation of an automatic transaxle
Explain electronic control system theory for an automatic transaxle
Identify typical symptoms found in automatic transaxle with electronic faults
Identify the recommended diagnostic process for Ford automatic transaxle
Apply Symptom-System-Component-Cause to isolate automatic transaxle concerns in a simulated environment
Interpret transaxle test results to indicate whether or not results are within specification
Explain how a malfunctioning component could impact the operation of the transaxle
Perform external transaxle pressure checks

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 2240 - Ford Truck Transmissions (3)

This course will detail the fundamentals, operation and repair of the automatic transmissions used on current Ford light trucks.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the normal [hydraulic-mechanical] operation of an automatic transmission
Identify the function, construction, location, and operation of each major component of selected Ford automatic transmissions
Describe power flow through a typical automatic transmission
Explain hydraulic system theory for an automatic transmission
Identify transmission fluid characteristics
Identify typical symptoms found in automatic transmissions with hydraulic or mechanical causes
Identify the normal [electronic] operation of an automatic transmission
Apply Symptom-System-Component-Cause (SSCC) to isolate automatic transmission concerns in a simulated environment

Interpret transmission test results to indicate whether or not results are within specification
Identify the normal operation of the TorqShift automatic transmission
Explain electronic control systems theory for the TorqShift automatic transmission

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 2502 - Ford Advanced Engine Performance (3)

This course is designed to provide the student with hands-on application of guided diagnosis and testing of driveability concerns. The course emphasizes the Symptom-to-System-to-Component-to-Cause (SSCC) process as well as critical thinking skills while performing engine performance concerns.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify problem-solving techniques used in Ford service repair
Use electronic service equipment
Demonstrate safe service repair procedures
Identify engine monitoring drive cycles
Evaluate DTC-driven concerns
Interpret WDS PIDS to isolate driveability concerns
Research system generated diagnostic trouble codes
Sequence multiple diagnostic trouble codes
Interpret reference values
Interpret captured emission related data
Evaluate symptom-driven concerns

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FDAS 2552 - Ford Diesel (4)

This hands-on classroom training will cover diesel engine performance concerns. This course will also include the use of necessary service publications, diagnosis of code and no-code generated concerns and the performance of diagnostic tests and procedures.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe unique design features of the current production diesel engines
Identify the location and function of the components of the 6.0L diesel engine
Identify the steps of specific test procedures including air tests checks
Describe the four stroke combustion process of a diesel engine
Describe the operation of the fuel supply and fuel injection systems
Describe the operation of the low and high systems oil pressure
Differentiate the various starting aids
Identify components that comprise the fuel management system
Identify components that comprise the high oil pressure system
Describe the purpose of the lube oil system
Differentiate the types of seals used on the different diesel engines
Identify the location and function of the components of the 6.7L diesel engine

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

FDAS 2650 - Ford New Technology (2)

This course will consist of the latest Ford Service Technician Specialty (STST) training and new technology that Ford Motor Company has released after the student completes the required Ford ASSET courses and allows for up to date training prior to graduation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret technical data to isolate driveability concerns
Demonstrate safe service repair procedures
Sequence multiple diagnostic trouble codes
Use electronic service equipment

Analyze module diagnostic capabilities
Identify the function of basic electronic components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FLPW - Fluid Power Engineering & Motion Control Technology

FLPW 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FLPW 1101 - Fluid Power Technology I (3)

This course considers the basic fundamentals of hydraulics and pneumatics. The operating principles of basic systems used in industry today will be emphasized. Persons involved with machine maintenance, production automation, packaging, plastics, mechanical drafting and engineering technologies should consider this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Define fluid power.
Explain energy laws.
Describe work principles.
Describe force principles.
Describe power principles.
Explain force/work/power relationships.
Define force units.
Define work units.
Define power units.
Describe hydrostatic principles.
Describe hydrodynamic principles.
Explain volume-area-speed relationships.
Explain linear actuators.
Describe mechanical torque.
Describe displacement.
Describe horsepower.
Describe horsepower.
Describe accumulators.
Describe air-oil boosters/intensifiers.
Explain pressure control operation.
Explain directional control valve operation.
Explain volume control valve operation.
Explain hydraulic circuit operation.
Identify graphic symbols.
Draw hydraulic circuits.
Explain pneumatic energy transmission.
Define pneumatic terminology.
Explain positive displacement compressors.
Explain non-positive displacement compressors.
Explain pneumatic pressure control valves.
Explain pneumatic directional control valves.
Explain pneumatic speed control techniques.
Identify pneumatic graphic symbols.
Determine pneumatic circuit operation.
Determine basic troubleshooting techniques.
Draw pneumatic circuits.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 1106 - Fluid Power Technology II (4)

This course considers the principles of hydraulics and pneumatics. The operating principles of basic systems used in industry will be emphasized. Fluid power terms, definitions, symbols and liquid principles will be discussed. Standards, engineering specifications and interchangeability will also be discussed in-depth. Persons involved with machine design, drafting, maintenance, production, automation, packaging, plastics and engineering technologies should consider this course.

Prerequisite: FLPW1101 or concurrent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Calculate linear forces.
Calculate cylinder volume.
Calculate cylinder speed.
Calculate adjusted flow rate.
Calculate cylinder time.
Size cylinder.
Size cylinder ports.
Calculate intensifier problems.
Describe horsepower.
Define rotary actuator specifications.
Describe limited rotation actuators.
Determine actuator specifications.
Identify actuator standards.
Identify actuator graphic symbols.
Identify graphic symbols.
Draw hydraulic actuator circuits.
Solve surface area problems.
Solve cylindrical area problems.
Solve volume problems.
Calculate cylinder speeds.
Calculate pump G.P.M.
Calculate volumetric efficiency.
Calculate mechanical efficiency.
Calculate overall efficiency.
Service reservoirs.
Service heat exchangers.
Describe liquid flow principles.
Describe liquid properties.
Compare specific gravities.
Compare liquid viscosity`s.
Compare liquid characteristics.
Identify contaminant types.
Flush a hydraulic system.
Describe Beta ratio.

Describe filter.
Describe specific weight principles.
Describe Bernoulli`s theorem.
Describe laminar flow.
Describe turbulent flow.
Describe Reynolds number.
Describe test procedures.
Charge accumulators.
Demonstrate shop safety practices.
Describe various hose types.
Describe various hose fittings.
Describe permanent hose assemblies.
Describe reusable hose assemblies.
Explain hose test procedures.
Describe tubing types.
Describe tube fittings.
Describe tube assembly.
Describe tube applications.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

FLPW 1150 - Pneumatic Components (4)

This course is the study of the function and application of air compressors, vacuum pumps, air motors, cylinders, limited rotation actuators, directional valves, pressure and flow control valves used in industrial systems today. Various compressor designs will be discussed and inspected for wear. Students will use precision measuring tools and identify overhaul procedures for various components. The pneumatic power circuit and the how to test an operating system will be covered. Persons involved with machine design, drafting, maintenance, production, automation, packaging, plastics and engineering technologies should consider this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Convert metric units.
Calculate absolute pressure problems.
Calculate absolute temperature problems.
Solve hydraulic system problems.
Solve pneumatic system problems.
Define Charles law.
Define Boyles law.
Calculate Charles law.
Calculate Boyles law.

Demonstrate shop safety practices.
Use precision measuring tools.
Use manufacturer`s catalog.
Review pneumatic principles.
Describe positive displacement compressors.
Describe non-positive displacement compressors.
Determine positive displacement compressor characteristics.
Determine compressor control characteristics.
Determine safety control characteristics.
Describe compressor failures.
Test compressor performance.
Describe air distribution systems.
Service air compressor system.
Explain vacuum principles.
Describe vacuum measurement.
Explain vacuum system applications.
List vacuum systems hazards.
Describe mechanical vacuum pumps.
Describe diffusion vacuum pumps.
Determine vacuum pump characteristics.
Test vacuum pumps.
Describe vacuum safety equipment.
Describe vacuum distribution system.
Determine system selection factors.
Service vacuum system.
Describe linear actuator forces.
Determine cylinder selection factors.
Describe torque.
Determine rotary motor selection factors.
Determine rotary motor horsepower.
Size linear cylinder.
Size rotary motor.
Determine rodless cylinder applications.
Determine limited rotation applications.
Determine actuator failures.
Determine actuator repair practices.
Test pneumatic actuators.
Identify pneumatic valve symbols.
Apply pneumatic monitoring devices.
Describe directional control valves.
Explain Cv factors.
Determine directional control valve characteristics.
Test various directional control valves.
Determine directional control valve selection factors.
Describe flow control valves.
Determine flow control valve characteristics.
Determine flow control valve selection factors.
Describe pressure control valves.
Determine pressure control valve characteristics.
Determine pressure control valve selection factors.
Review air distribution systems.
Describe pneumatic principles.
Describe water cooled aftercoolers.
Service water cooled aftercoolers.
Describe refrigerated dryers.
Describe chemical dryers.
Service chemical dryers.
Describe heatless regenerative dryer.
Describe air filter characteristics.
Describe air lubrication characteristics.
Service air preparation equipment.
Select air preparation devices.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

FLPW 1181 - Pumps, Actuators, and Conductors (4)

This course is a study of the function and application of hydraulic pumps, motors, cylinder and hydraulic accessories. Industrial hydraulic components and their application will be emphasized. Persons involved with machine maintenance, production automation, packaging, plastics, mechanical drafting and engineering technologies should consider this course. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: FLPW1101

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Demonstrate shop safety practices.
Use common hand tools.
Use precision measuring tools.
Use manufacturer`s catalog.
Explain positive displacement.
Explain non-positive displacement.
Describe vane pump characteristics.
Describe gear pump characteristics.
Describe piston pump characteristics.
Describe gerotor pump characteristics.
Determine pump tolerances.
Describe pump failures.
Identify allowable wear.
Demonstrate test stand operation.
Align shaft coupling.
Determine test parameters.
Size pump lines.
Run operational test.
Run performance test.
Determine pump volumetric efficiency.
Determine pump mechanical efficiency.
Determine overall efficiency.
Identify various motors.
Identify motor standards.
Describe torque.
Determine motor horsepower.
Describe vane motor characteristics.
Describe gear motor characteristics.
Describe piston motor characteristics.
Describe gerotor motor characteristics.

Determine motor efficiencies.
Identify cylinder standards.
Describe cylinder parts.
Calculate cylinder forces.
Determine cylinder repair practices.
Perform cylinder operational tests.
Describe cylinder accessories.
Explain hose applications.
Describe hose installation.
Fabricate permanent hose assembly.
Test permanent hose assembly.
Fabricate reusable hose assembly.
Test reusable hose assembly.
Explain tube bending techniques.
Describe tube installation techniques.
Operate fabrication equipment.
Fabricate flared tube assemblies.
Fabricate permanent tube assemblies.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

FLPW 1191 - Hydraulic Components (3)

This course is an in-depth study of hydraulic components. Troubleshooting, repairing and testing of pressure control, direction control and flow control valves will be covered. Persons involved in maintenance, manufacturing or engineering technologies should consider this course. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: FLPW1101

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Identify pressure control valve symbols.
Describe simple pressure controls.
Describe compound relief valve.
Describe sequence valve.
Describe unloading valve.
Describe counterbalance valve.
Describe pressure reducing valve.
Describe remote controlled valves.
Describe pressure control valve failures.
Identify allowable wear.
Draw pressure control valve circuits.

List pressure control valve applications.
Determine simple relief valve characteristics.
Determine compound relief valve characteristics.
Test relief valves.
Determine sequence valve characteristics.
Test sequence valves.
Determine unloading valve characteristics.
Test unloading valves.
Determine counterbalance valve characteristics.
Test counterbalance valves.
Determine reducing valve characteristics.
Test reducing valves.
Describe check valve.
Describe two way valve.
Describe three way valve.
Describe four way valve.
Describe solenoid controlled pilot operated valve.
Describe mobile valves.
Describe directional control valve options.
Describe directional valve relief options.
Describe directional valve flow control options.
Describe directional valve check options.
Draw directional valve circuits.
Determine check valve characteristics.
Test check valves.
Determine two-way valve characteristics.
Test two-way valves.
Determine three-way valve characteristics.
Test three-way valves.
Determine four-way valve characteristics.
Test four-way valves.
Determine solenoid valve characteristics.
Test solenoid valves.
Determine mobile valve characteristics.
Test mobile valves.
Identify various flow controls.
Describe in-line valves.
Describe restrictor flow control valves.
Describe bypass flow control valves.
Describe non-compensated control valves.
Describe pressure compensated control valves.
Describe temperature compensated flow control valves.
Identify restrictor type characteristics.
Identify bypass type flow valve characteristics.
Run operational tests.
Run pressure drop test.
Compare various flow controls.
Describe flow control circuits.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 1231 - Industrial Electricity I (3)

This course is a study of the terms, symbols, definitions and safety practices related to industrial electricity. The student will calculate volts, ohms, watts and power in industrial electricity. The student will be able to wire simple AC circuits, utilize volt-ohm meter. Diagnose circuit problems and determine circuit operations from a two-line diagram. Persons involved with machine design, drafting, maintenance, production, automation, packaging, plastics and fluid power engineering technologies should consider this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Identify electrical terms.
Explain alternating current.
Explain direct current.
Explain series circuits.
Explain parallel circuits.
Explain series-parallel circuits.
Identify abbreviations.
Identify electrical symbols.
Demonstrate voltmeter.
Demonstrate ammeter.
Demonstrate ohmmeter.
Demonstrate wattmeter.
Demonstrate safe electric testing.
Describe wiring materials.
Explain protective devices.
Explain conductor sizing.
Explain coils/solenoids.
Explain pressure switches.
Explain limit switches.
Explain DC motor operation.
Explain AC motor operation.
Explain temperature control devices.
Explain relay controls.
Read ladder diagrams.
Read machine diagrams.
Draw circuits with electrical devices.
Calculate volts.
Calculate ohms.
Calculate current.
Calculate watts.
Measure voltage.
Measure current.
Measure resistance.
Measure power.
Connect series circuits.
Connect parallel circuits.
Connect series-parallel circuits.
Wire electrical circuits.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 1236 - Industrial Electricity II (3)

This course is designed for the individual working in plant maintenance, machine upgrading, automated packaging, hydraulics or pneumatics. The student will wire electrical circuits using transformers, control relays, pressure switches, timers, motor starters and contractors. The student will practice troubleshooting techniques on electrical panels. Upon completion the student will be able to test and diagnose basic industrial electrical circuits.

Prerequisite: FLPW1231

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Demonstrate safe work habits.
Explain electrical standards.
Identify electrical hardware.
Determine component ratings.
Read ladder diagrams.
Connect three-way circuits.
Connect four-way circuits.
Connect simple relay circuits.
Connect time delay circuits.
Connect repeat cycle circuits.
Connect count down circuits.
Connect machine sequence circuit.
Identify protective devices.
Identify disconnect applications.
Explain transformer operation.
Explain single-phase power.
Explain three-phase power.
Explain single-phase motor operation.
Explain three-phase motor operation.
Connect transformer control circuits.
Connect manual starter circuits.
Connect single-phase manual starter.
Connect three-phase manual starter.
Connect single-phase magnetic starter.
Connect single-phase reduced voltage starter.
Analyze electrical diagram.
Determine machine sequence.
Describe numeric cross reference system.
Determine electrical values.
Measure electrical values.
Troubleshoot manual switching circuits.
Troubleshoot relay circuits.
Troubleshoot motor control circuits.
Troubleshoot time delay circuits.
Troubleshoot electro-hydraulic circuits.

Troubleshoot electro-pneumatic circuits.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 1320 - Hydraulic Circuits (2)

This course will cover setup and testing of industrial and mobile circuits from a given schematic. The construction and operation of circuits will provide experience in troubleshooting electro-hydraulic machines and construction equipment. Routine maintenance will also be discussed. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: FLPW1101

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe hydraulic power supplies.
Describe pump control circuits.
Describe single-pump unloading circuits.
Write service reports.
Describe double-pump unloading circuits.
Describe pressure-control circuits.
Describe speed-control circuits.
Describe directional valve circuits.
Describe regenative circuits.
Describe negative load circuits.
Describe braking circuits.
Describe fluid conditioning circuits.
Describe electro-hydraulic circuits.
Draw specified industrial circuits.
Describe non load reactive power steering.
Describe load reactive power steering circuits.
Describe open center drive circuits.
Describe closed loop drive circuits.
Describe replenishing circuits.
Describe high pressure relief circuits.
Describe directional valve circuits.
Describe flow divider circuits.
Describe priority divider circuits.
Describe fluid conditioning circuits.
Draw specified mobile circuits.
Demonstrate safe troubleshooting practices.
Troubleshoot industrial pump control circuit.
Troubleshoot industrial pressure control circuit.
Troubleshoot industrial speed control circuit.

Troubleshoot electro-hydraulic circuits.
Repair industrial circuits.
Troubleshoot power steering circuits.
Troubleshoot accessory circuits.
Troubleshoot open loop drive circuits.
Troubleshoot closed loop drive circuits.
Determine replacement components.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FLPW 1340 - Pneumatic Circuits and Air Logic (4)

Students will construct pneumatic circuits which will provide practical knowledge of component identification and circuit construction. The student will gain experience connecting, troubleshooting and maintaining pneumatic components and circuits.

Prerequisite: FLPW1101 or concurrent and FLPW1150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recall pneumatic gas laws.
Identify pneumatic symbols.
Describe manual controlled circuits.
Describe pressure sequenced circuits.
Describe position controlled circuits.
Describe speed control circuits.
Describe proportional circuits.
Describe two hand safety circuits.
Describe air-oil circuits.
Draw position circuits.
Draw sequencing circuits.
Draw combination circuits.
Draw specified industrial circuits.
Operate spring return DCV circuits.
Operate momentary impulse DCV circuits.
Operate spring centered DCV circuits.
Operate reciprocating circuits.
Operate speed control circuits.
Operate position control circuits.
Operate time control circuits.
Operate dual pressure control circuits.
Operate air-oil intensifier circuits.
Operate two hand safety circuits.
Evaluate circuit performance.

Recall electrical terminology.
Recall ladder diagrams.
Describe electro-pneumatic applications.
Describe pressure switch sequencing circuit.
Describe position sequencing circuits.
Describe time controlled circuits.
Describe count controlled circuits.
Describe reciprocating circuits.
Describe combination circuits.
Draw electro-pneumatic position circuits.
Draw electro-pneumatic time circuits.
Write machine sequence.
Demonstrate safe shop procedures.
Demonstrate wiring techniques.
Interface electro-pneumatic components.
Operate pressure switch sequencing circuit.
Operate position sequenced circuit.
Operate time controlled circuit.
Operate count controlled circuit.
Operate reciprocating circuit.
Operate combination circuit.
Operate safety circuit.
Evaluate electro-pneumatic circuit performance.
Define air logic terms.
Describe air logic components.
Identify air logic symbols.
Compare air logic symbols.
Determine air preparation requirements.
Describe air logic circuit construction.
Determine mechanical operations.
Draw power circuit.
Draw air logic circuit.
Operate air logic circuit.
Evaluate air logic circuit performance.
Demonstrate safe troubleshooting practices.
Isolate system problems.
Troubleshoot pneumatic pressure control circuit.
Troubleshoot pneumatic speed control circuit.
Troubleshoot electro-pneumatic circuits.
Troubleshoot air logic circuits.
Troubleshoot accessory circuits.
Troubleshoot power valve circuits.
Troubleshoot programmable logic circuits.
Determine replacement components.
Write service reports.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

FLPW 1400 - Engineering Drawings and Schematics (4)

This course is an introduction to the essential methods and techniques needed to design, produce and interpret engineering drawings and circuit schematics. Topics covered include drawing standards, layout and dimensioning practices, schematics, symbols and terminology. Utilizing manual techniques and CAD software, the student will apply their knowledge to the creation of mechanical, construction and facility drawings. The student will also generate hydraulic, pneumatic and electrical schematics and develop various symbol libraries. The student will obtain knowledge and skill sets that will be reinforced by other courses within the manufacturing programs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Lay out various circuit schematics
Comply with drafting protocol
Identify uniform schematic symbols
Illustrate dimensioning and layout practices
Conform to drawing standards
Compare blueprint standards
Use manual drawing methods
Demonstrate CAD software operation
Construct schematic and drawing documentation packages
Create drawing templates
Generate symbol libraries
Document drawing changes
Manage computer files effectively

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

FLPW 1500 - Fluid Power Process Lab (1 - 4)

This course is designed for students who desire to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that are beyond the current scope of existing courses. This course will cover the basic accepted practices of safety in the fluid power lab environment. Dependent on the needs of each individual class, the specific areas of focus will change to meet the needs of the class.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adhere to safe working techniques and practices
Integrate previous knowledge and skills
Operate hydraulic or pneumatic equipment
Operate industrial electrical equipment
Operate motion control equipment
Additional course goals addressed by this course will be dependent on the area and type of specialization that the class chooses to focus on

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1-4

FLPW 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently.
Organize work schedules.
Follow prescribed procedures.
Demonstrate safety.
Demonstrate initiative.
Integrate previously acquired skills.
Integrate previously acquired knowledge.
Display good judgment.
Demonstrate dependability.
Exhibit professionalism.
Organize work area.
Demonstrate cooperation.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

FLPW 2000 - Programmable Logic Controllers (3)

This is an introduction to the world of programmable logic controllers. The student will learn the basics of how to program and set up a PLC. The student will also learn the different addressing and programming styles and be challenged to write a program for a simple machine. Various PLCs will be discussed. Persons involved with fluid power, automated machinery, electronics, machine design and modifications should consider this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe ladder logic.
Determine programming techniques.
Compare PLC/mechanical relays.
Describe input signals.
Describe output signals.
Describe programmable logic controller usage.
Describe scan.
Describe current flow.
Describe memory.
Describe central processing unit.
Describe addressing/numbering systems used.
Compare hardware to PLC wiring.
Compare various PLC's.
Program clear memory instruction.
Program store/load instructions.
Program out/write instructions.
Program series circuits (and)
Program parallel circuits (or)
Program series/parallel circuits (and store or store/and load or load) circuits.
Program sealing/retentive/special logic functions.
Program timer circuits/counters circuits/high speed counter.
Program sequencer circuits/drum timers.
Program master control start/reset/interlock.
Program shift registers.
Edit.
Configure PLC hardware.
Determine slot addressing.
Determine I/O point address.
Identify chassis.
Identify power supply.
Identify CPU/placement.
Identify I/O modules.
Compare PLC/computer usage.
Enter developed programs.
Test programming sequence.
Run programs.
Interpret error codes.
Edit program (insert/delete/search and replace).
Interface PLC to motor starter/control circuitry.
Wire and run various circuits.

Program D&A and A&D.
Run computer software and interface to PLC.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2020 - Advanced Programmable Logic Controllers (3)

This course is a continuation of Programmable Logic Controllers (PLC) and is designed to give the student a more in-depth working knowledge of the PLC. Advanced programming, troubleshooting and application techniques will be covered. Students will take projects from the design process to the implementation of their design. The projects include: software generated programs, various use of digital and analog input and output devices, field wiring diagrams, machine sequence diagrams and PLC component selection. Students will interface the Allen Bradley PLC with various types of machine and motor controllers including AC and DC devices.

Prerequisite: FLPW2000 or equivalent or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Utilize troubleshooting techniques
Determine automation sequence
Interrupt field-wiring diagrams
Differentiate between relay and PLC logic
Investigate PLC and HMI peripheral requirements
Network PLC, HMI and AC-VFD
Operate fluid power components with a PLC
Calculate with various numeric bases
Construct analog input/output programs
Construct HMI programs
Interface decrete input and output devices with a PLC, HMI and AC-VFD
Interface analog input and output devices with a PLC, HMI and AC-VFD

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2112 - Instrumentation of Fluid Power Systems (3)

This course will cover the skills needed to instrument and test a fluid power system. Instrumentation measurement will include pressure, flow, torque, force, RPM, velocity, vibration and sound. The student will use a volt-ohm meter to set excitation voltage, determine null and output levels of each type of transducer used to instrument an industrial or automated machine. The student will set and calibrate instruments such as strain gauges, thermocouples and temperature measuring devices, RPM and GPM transducers. The signal conditioning/amplifier devices for digital and analog will be covered in this course. Persons involved with machine design, maintenance, packaging, beverage and food processing and fluid power engineering should consider this course.

Prerequisite: FLPW1231 should be taken prior to or concurrent with this course

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Identify analog sensors
Identify digital sensors
Identify digital and analog sound measuring devices
Operate various strain gage transducers
Operate various digital transducers
Demonstrate Digital Volt-Ohm meter usage, signal generator, frequency counters, & frequency to DC convertors
Calibrate various digital and analog readouts
Operate digital and analog instrumentation
Program Labview data acquisition instrumentation
Record data using Labview equipment
Analyze data

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2180 - Circuit Design (3)

This course will introduce the student to basics in the selection of hydraulic components, proper circuit design techniques and tools to help solve common application problems. Common hydraulic components such as pumps, motors and valves will be thoroughly explained, along with proper applications and sizing techniques. Circuits and components related to both mobile and industrial applications will be discussed. Upon completion of this course, the student will be able to design and plumb simple hydraulic circuits involving fixed and variable pumps, pressure control circuits and speed control circuits. The student will also have a better understanding of systems which will increase the ability to troubleshoot existing equipment and determine solutions to problems. This course is intended for hydraulic sales personnel, plant engineers, design engineers, service technicians and drafting and fluid power

students.

Prerequisite: FLPW1106

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Calculate volumetric efficiency.
Calculate mechanical efficiency.
Calculate overall efficiency.
Calculate electric motor efficiency.
Calculate line sizes.
Size actuators.
Size valves.
Size pumps.
Size motors.
Size accessories.
Calculate input horsepower.
Calculate output horsepower.
Design simple relief valve circuit.
Design compound relief valve circuit.
Design vented compound relief valve circuit.
Design sequence valve circuit.
Design vented sequence valve circuit.
Design unloading valve circuit.
Design vented unloading valve circuit.
Design counterbalance valve circuit.
Design brake valve circuit.
Design pressure reducing valve circuit.
Design vented pressure reducing valve circuit.
Design non-pressure compensated meter-in fixed disp. circuit.
Design non-pressure compensated meter-in variable disp. circuit.
Design pressure compensated meter-in circuit.
Design non-pressure compensated meter-out circuit.
Design pressure compensated meter-out circuit.
Design non-pressure compensated bleed-off circuit.
Design pressure compensated bleed-off circuit.
Design priority valve circuit.
Design flow divider valve circuit.
Design gear type proportionator circuit.
Design load-sensing speed control circuit.
Calculate previous circuit efficiencies.
Design open center industrial valve circuit.
Design closed center industrial valve circuit.
Design tandem center industrial valve circuit.
Design regenerative valve circuit.
Design open center float industrial valve circuit.
Design closed center float industrial valve circuit.
Design open center mobile valve cylinder circuit.
Design open center mobile valve motor circuit.
Design closed center mobile valve cylinder circuit.
Design closed center mobile valve motor circuit.
Design parallel valve circuit.
Design series-parallel valve circuit.
Design load sensing valve circuit.
Design open loop pump control circuit.
Design closed loop pump control circuit.
Design pressure compensated indirect circuit.
Design dual pressure compensated circuit.
Design horsepower limiting circuit.
Design press controlled variable disp pump circuit.
Design solenoid controlled variable disp pump.

Design servo controlled variable disp pump circuit.
Design single line sensing port load sensing circuit.
Design dual line sensing ports load sensing circuit.
Design minimum volume stop hi/low circuit.
Design maximum volume stop circuit.
Set up and operate the previous circuits per instructor.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2191 - Industrial Circuit Design (3)

This course combines all the curricula in the Fluid Power Technology program. A complete industrial circuit will be developed. A complete schematic will be developed for the hydraulic, pneumatic, electrical and mechanical systems. You will select, pump and actuators will be sized and valves will be specified. A Bill of Materials is developed. Creativity will be utilized to design efficient, safe and economical circuits. This course is intended for individuals involved with design of production machines, automated systems, food processing or harvesting equipment. Individuals involved in the specifications of hydraulic and pneumatic components should consider this course.

Prerequisite: FLPW1106 and FLPW1231

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Design production machine.
Size cylinders.
Size valving.
Size pump.
Size prime mover.
Size accessory components.
Specify hydraulic pneumatic electrical components.
Specify accessory components.
Operate production machine.
Evaluate system.
Draw ladder diagram circuits.
Design sequencing circuits.
Design position circuits.
Design on-delay timing circuits.
Design off-delay timing circuits.
Design speed control circuits.
Design counting circuits.
Design sensing circuits.
Troubleshoot circuits.
Evaluate air logic circuits.
Design accumulator circuit.
Design closed loop hydrostatic circuits.

Design intensifier circuit.
Design compression/decompression circuit.
Design filter conditioning circuit.
Design temperature conditioning circuit.
Design safety circuit.
Design series circuit.
Design parallel circuit.
Design open center master/slave valve circuit.
Design a winch circuit.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2250 - Proportional and Servo Controls (Robotics Application) (3)

This course will include setting up and operating various types of open loop and closed loop servo systems. Emphasis will be placed on control and feedback devices as they are used in automated and robotics applications.

Prerequisite: FLPW1106

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe servo valve terminology.
Describe analog command signal.
Describe digital command signal.
Describe dither.
Describe feedback sensors.
Describe analog feedback transducers.
Describe digital feedback transducers.
Describe gain.
Describe summing amplifier.
Describe power amplifier.
Describe error detector.
Design open loop hydraulic servo system.
Design closed loop hydraulic servo system.
Specify open loop hydraulic servo system.
Specify closed loop hydraulic servo system.
Set up open loop hydraulic servo system.
Set up closed loop hydraulic servo system.
Operate open loop hydraulic servo system.
Operate closed loop hydraulic servo system.
Evaluate open loop hydraulic servo system.
Evaluate closed loop hydraulic servo system.
Compare mechanical to electro-hydraulic servo system.

Design non-feedback proportional system.
Design internal feedback proportional system.
Design external feedback proportional system.
Specify non-feedback proportional system.
Specify internal feedback proportional system.
Specify external feedback proportional system.
Adjust non-feedback proportional system.
Adjust internal feedback proportional system.
Adjust external feedback proportional system.
Operate non-feedback proportional system.
Operate internal feedback proportional system.
Operate external feedback proportional system.
Operate non feedback electro-hydraulic serve system.
Condition feedback signals.
Adjust gain control.
Operate potentiometer feedback servo system.
Operate LVDT feedback servo system.
Operate strain gage feedback servo system.
Operate tach generator feedback servo system.
Operate control valve type servo system.
Operate power valve type servo system.
Operate position feedback servo system.
Operate speed feedback servo system.
Operate summing amp/comparison servo system.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2301 - Mobile Circuit Design (3)

This course combines the Fluid Power curricula dealing with components and circuits used on mobile equipment. The various power steering circuits will be discussed. The current state-of -art hydrostatic drives will be investigated and developed as part of a system design. A complete schematic will be developed for the hydraulic drives circuit, power steering and accessories. You will determine engineering specifications, select the components, pump and actuators. A Bill of Materials is developed. This course is intended for individuals involved with service and design of off road mobile equipment.

Prerequisite: FLPW1320

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Determine power steering engineering specifications.
Size power steering cylinder/cylinders.
Size power steering pump.
Size power steering valve.

Size power steering conductors.
Specify power steering cylinder/cylinders.
Specify power steering pump.
Specify power steering valve.
Set up power steering system.
Evaluate power steering system.
List complete power steering nomenclature.
Design open center mobile valve cylinder circuit.
Design open center mobile valve motor circuit.
Design closed center mobile valve cylinder circuit.
Design closed center mobile valve motor circuit.
Design parallel valve circuit.
Determine winch engineering specifications.
Size winch motor.
Size winch pump.
Size winch valving.
Size winch conductor.
Specify winch motor.
Specify winch pump.
Specify winch valving.
Specify winch prime mover.
Set up winch system.
Calculate winch system efficiency.
Determine hydrostatic engineering specification.
Size hydrostatic system cylinders.
Size hydrostatic motors.
Size hydrostatic pump.
Size piggy back pump.
Size hydrostatic system valving.
Size hydrostatic conductors.
Specify hydrostatic motors.
Specify hydrostatic pumps.
Evaluate hydrostatic system.
Calculate hydrostatic system efficiency.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FLPW 2321 - System Engineering Portfolio (3)

This course is designed to allow the student to practice all of the principles learned in the fluid power curricula. The student will work with the instructor and industry to design a project integrating electrical, mechanical, hydraulic, and pneumatics. The student will develop a concept, the schematics, bill of materials and operating manuals for a major portfolio project. The students may work in teams with other manufacturing majors. Communication skills verbal, written and electronic will be emphasized. Teams will evaluate merits of projects and decide which projects should be further explored and fabricated. Hydraulic, pneumatic, electrical, mechanical and electronic systems will be

interfaced.

Prerequisite: FLPW1231, FLPW1340, FLPW2112, FLPW2180, FLPW2191, and FLPW2301 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Determine project criteria.
Determine output actuator.
Determine valving type.
Determine pump type.
Determine prime mover type.
Design hydraulic/mechanical system.
Size output actuator.
Size proper valving.
Size prime mover.
Specify components.
Calculate system efficiency.
Evaluate system.
Determine control criteria.
Design system controls.
Determine command control type.
Determine feedback control type.
Determine summing amp type.
Coordinate controls.
Specify controls.
Set up potentiometer type controls.
Set up joystick type controls.
Set PLC type controls.
Set up various feedback types.
Evaluate system control types.
Determine power supply characteristics.
Select power supply.
Set up mechanical hardware.
Set up hydraulic hardware.
Set up pneumatic hardware.
Set up electrical hardware.
Set up control hardware.
Set up feedback hardware.
Operate robot.
Adjust robot controls.
Evaluate robot.
Calculate cost.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 3

FLPW 2350 - Hydraulic Specialist Certification Review (2)

This two-credit course is designed to prepare and review for the national Fluid Power Specialist Certification test. There will be a study guide with many practice problems to solve along with lecture time. It is intended for an individual who has two years of technical training or adequate industrial experience. Areas to be covered will include individual hydraulic and pneumatic components, air logic, proportional and servo valves, physics, circuit design, troubleshooting, instrumentation, sound measurement, electricity and conductors.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Review individual hydraulic components.
Review individual pneumatic components.
Review air logic circuitry.
Review proportional control valves.
Review servo control valves.
Review physics problems.
Review circuit design problems.
Review instrumentation components.
Review sound measurement.
Review electrical components/circuitry.
Review troubleshooting procedures.
Review basic English terms.
Solve hydraulic component problems.
Solve pneumatic component problems.
Solve air logic circuit problems.
Solve proportional/servo circuit problems.
Solve physic problems.
Solve circuit design problems.
Solve electrical circuit problems.
Solve electrical strength problems.
Solve material strength problems.
Review basic technical writing concepts.
Review fluid power formulas.
Review conductor sizing.
Solve related math problems.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FLPW 2360 - Pneumatic Specialist Certification Review (2)

This course is designed to prepare and review for the national Pneumatic Specialist Certification test. There will be a

study guide with many practice problems to solve along with lecture time. It is intended for an individual who has two years of technical training or adequate industrial experience and/or mechanical engineering background. Areas to be covered will include individual hydraulic and pneumatic components, air logic, proportional and servo valves, physics, circuit design, troubleshooting, instrumentation, sound measurement, electricity and conductors.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
Solves horsepower formulas for torque, speed, and horsepower of air motor connected through a reduction system to a conveyor.
Solves for bending moment on a cylinder bushing from stroke, mechanical advantage, and side load on the rod.
Computes bore diameter and pressure for a cylinder to move loads with a friction factor.
Computes cylinder bore diameter and pressure to operate various applications.
Solves for pressure and suction area to provide required lifting force using vacuum cups.
Converts pressure readings between inches of water (H2O) and inches of mercury (in. Hg).
Uses manufacturer`s graphs and formulas to determine CFM requirements for an air motor.
Predicts operation of a pneumatic system by tracing path of air flowing through circuits when various commands are given.
Selects appropriate solution to control air cylinder velocity.
Selects location of various components in a circuit to achieve cylinder sequence and deceleration functions.
Selects conductor sizes from application charts given pressure, flow delivery, and line length.
Uses formulas to size air receivers to perform various functions.
Identifies most and least important safety considerations in the design of an air circuit.
Recognizes advantages and disadvantages of single-acting and double-acting cylinders.
Computes CFM and SCFM air flow to power an air cylinder with extension and retraction forces and times specified.
Calculates oil flow rate and pressure from a pneumatic intensifier.
Calculates kinetic energy to stop a load with a shock absorber.
Recognizes characteristics of stop tubes and cushioning devices.
Calculates Cv for an air valve from pressure, flow, and temperature conditions to size a directional control valve for a cylinder or motor circuit.
Recognizes that the critical (sonic) velocity through an orifice is reached when the downstream pressure is 53% of the upstream pressure, and at the critical velocity, increasing p1, will not increase air flow.
Calculates compressor delivery capacity from system requirement, pressure, and duty cycle.
Recognizes operational characteristics of relieving and non-relieving regulators.
Recognizes operational characteristics of various types of vacuum generators.
Computes operational characteristics of a position feedback circuit.
Uses Ohm`s Law and Kirchoff`s Law to solve series-parallel circuits for voltage, current, and resistance.
Determines cycle characteristics for Pulse Width Modulated (PWM) pressure control valve.
Analyzes logic control circuit for output signal.
Computes current output from pressure transducer signal and transducer characteristics.
Computes resolution for digital linear transducers from characteristics of signal input.
Matches appropriate wiring arrangements between PLC`s and directional control valves.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FLPW 2375 - Fluid Power Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Fluid Power industry. The student is responsible for locating and arranging the internship site. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Instructor approval and completion of at least 50% of your degree or diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1-4

FLPW 2450 - Hydraulic Specialist Certification Exam (0)

Students who pass the national Hydraulic Specialist Exam are certified as Hydraulic Specialists. Students who pass both the national Hydraulic Specialist Exam and the national Pneumatic Specialist Exam are certified as Fluid Power Specialists. Students must pay a separate fee for both exams to the Fluid Power Society.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
No Outcomes Required.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

0

FLPW 2460 - Pneumatic Specialist Certification Exam (0)

Students who pass the national Pneumatic Specialist Exam are certified as Pneumatic Specialists. Students who pass both the national Pneumatic Specialist Exam and the national Hydraulic Specialist Exam are certified as Fluid Power Specialists. Students must pay a separate fee for both exams to the Fluid Power Society.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.
No Outcomes Required.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

0

FMLR - Ford Automotive Student Service Educational Training Program (ASSET)

FMLR 1200 - Ford Electrical Systems (3)

This course is designed to introduce the student to basic electrical theory and Ford electrical systems. Included in the course will be Ohm`s law and an in-depth study of Ford electrical systems.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain Ohm's Law
Interpret wiring diagrams
Perform battery tests
Test charging systems
Measure starter draw
Diagnose electrical circuits
Identify battery safety procedures
Construct series/parallel circuits
Evaluate DMM readings
Diagnose parasitic drain concerns
Perform voltage drop test
Identify PIDS
Construct relay circuits
Research repair procedures
Compare direct and alternating currents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FMLR 1301 - Related Mechanical Skills (2)

This course provides the student with a fundamental understanding of the automotive industry. It will also give students a working knowledge of various service procedures for routine maintenance of today's automobile. Furthermore, students will set-up and use their Ford Web-course training modules. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret Ford Motor Company (FMC) dealer website
Explain oasis
Perform bolt extraction procedures
Interpret bolt markings
Research hazardous waste procedures
Outline safety inspections on Ford vehicles
Operate gas welding equipment
Perform tire repair procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FMLR 1601 - Ford Suspension and Alignment (3)

This course will detail different types of suspension systems used on late model vehicles. Furthermore, the student will learn to perform two and four wheel alignment procedures.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze suspension systems
Identify suspension systems
Contrast front and rear wheel drive suspension systems
Perform strut replacement procedures
Explain how alignment angle affects vehicle handling
Perform vehicle alignment
Identify four wheel alignment angles
Interpret electronic alignment equipment readouts
Demonstrate safe service and repair procedures
Use electronic service equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FMLR 1650 - Ford Steering and Balance (2)

In this course the student will analyze the steering systems used on Ford vehicles. The student will learn to troubleshoot, diagnose and repair steering systems using a hands-on approach with late model Ford vehicles. It also includes tire construction and repair, wheel vibration diagnosis, and electronic balance procedures.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain p/s pump operation
Diagnose rack and pinion steering systems
Check steering system component integrity
Explain steering gear operation
Identify electronic steering systems
Perform tire repair
Measure wheel run-out
Identify tire construction
Perform off car wheel balance
Compare static balance vs. dynamic balance
Explain tire ratings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FMLR 1810 - Ford Dealership Internship I (6)

This course will provide the student on-the-job training in the automotive industry. The student will use the knowledge learned during classroom instruction and put into practice the technical skills on customers` vehicles.

Prerequisite: Successful completion of FDAS1200, FDAS1300, FDAS1650, and FDAS2600 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns
Repair vehicles to manufacture specifications
Demonstrate safe service repairs
Determine customer needs from repair order information
Evaluate vehicle prior service history
Demonstrate professional integrity
Practice ethical vehicle repair procedures
Practice environmentally safe working habits
Work independently
Cooperate with co-workers
Perform maintenance work on customer vehicles
Demonstrate commitment to the automotive profession
Manage change while balancing work and other areas of life
Recognize and value others

Follow supervisor's direction
Apply communication skills
Evaluate system components using precision measuring equipment
Make repair decisions using the Ford SSCC problem solving techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

FMLR 1820 - Ford Dealership Internship II (6)

This course will provide the student on-the-job training in the automotive industry. The student will use the knowledge learned during previous classroom instruction and put into practice the technical skills on customers' vehicles.

Prerequisite: Successful completion of FDAS1500, FDAS1550, FDAS1600, and FDAS1750 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose customer concerns
Repair vehicles to manufacture specifications
Demonstrate safe service repairs
Determine customer needs from repair order information
Evaluate vehicle prior service history
Demonstrate professional integrity
Practice ethical vehicle repair procedures
Practice environmentally safe working
Work independently
Cooperate with co-workers
Perform maintenance work on customer vehicles
Demonstrate commitment to the automotive profession
Manage change while balancing work and other areas of life
Recognize and value others
Follow supervisor's direction
Apply communication skills
Evaluate system components using precision measuring equipment
Make repair decisions using the SSCC problem solving techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

FMLR 2600 - Ford Braking Systems (3)

This course will detail the brake systems of Ford Motor Company cars and light trucks. It includes ABS operation, hydraulic components, machining, and repair of drums and disc brake systems.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain drum brake systems
Explain disc brake systems
Operate brake machining equipment
Analyze ABS service faults
Explain hydro-boost brake operation
Create brake flares on hydraulic lines
Perform precision brake-related measurement
Research machining specifications
Research brake repair techniques
Contrast different brake system designs
Interpret ABS wiring diagrams
Evaluate brake concerns
Demonstrate safe service and repair procedures
Use electronic service equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

FRPT - Fire Protection

FRPT 1060 - Fire Department Occupational Health and Safety (2)

This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk and hazard evaluation and control procedures for emergency service organizations.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify occupational health and safety programs for industry and emergency services
Describe the components of the wellness/fitness plan
Compare the difference between standards and regulations
Explain the components of an accountability system in emergency service operations
Discuss the need for and the process used for post incident analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 2

FRPT 1100 - Fire Fighter I (5)

This course is designed to teach the student the necessary skills to perform the base duties of fire fighting including the thought process used to decide the operations to do. This will include the duties of rescue, exposure protection, confinement of the fire, extinguishment of the fire, overhaul, salvage and ventilation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the recognition process
Identify fire service safety practices
Size up the different types of fire behavior
Summarize the different fire control techniques
Select the proper fire control technique for each type of fire behavior
Identify the components of rescue procedures
Construct ventilation procedures
Select types of forcible entry
Determine proper protection measures
Identify the components of a water supply system
Determine proper overhaul procedures
Explain salvage procedures
Select appropriate ladder for the incident
Identify the components of a fire alarm system

Explain the use of fire extinguishers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 3

FRPT 1105 - Fire Fighter II (2)

This course is designed to teach the student the skills necessary to perform the basic duties of fire fighting, including the thought process used to decide on appropriate operations. This will include specialized rescue, building construction and fire cause determination.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Illustrate auto extrication procedures
Determine rescue tool needs at incidents
Contrast building construction principles
Evaluate common causes of fire and their prevention
Incorporate information to determine fire cause

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

FRPT 1110 - Fire Instructor I (2)

Instructor I is an intensive instructional methodology program. It addresses the job performance requirements of the National Fire Protection Agency, 1041 Standard for Fire Service Instructor Professional Qualifications. Instructor I

focuses on planning and providing instruction.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week ofthe course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore teaching styles
Outline the instructors planning process
Write a performance objective
Explore learning styles
Write a written evaluation
Demonstrate a lecture

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 1120 - Fire Officer I (2)

Fire Officer I administrative duties covered will include record keeping, managing projects, preparing budget requests, initiating and completing station maintenance requisitions, and conducting preliminary accident investigations. Supervisory duties that will be covered will include making work assignments, conducting performance appraisals, and ensuring that health and safety procedures are followed. This course is designed to meet the needs of the company officer as outlined in the National Fire Protection Standard 1021.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Assign tasks or responsibilities to unit members
Apply human resource policies and procedures
Initiate action to a citizen's concern
Execute administrative functions
Evaluate fire cause information
Apply safety regulations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 1125 - Fire Investigation I (2)

This course is designed to teach the student the basic skills needed for fire scene investigations.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Discover flashpoint, flammable range, ignition temp, vapor density, and specific gravity
Diagnose special extinguishing systems
Determine methods of heat transfer
Discover back-draft and flashover
Classify building types
Identify factors that determine point of origin
Diagnose fire sprinkler systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 1130 - Fire Inspector I (2)

This course is designed to teach the student the basic skills needed to conduct fire inspections. The student will learn basic code usage, basic inspection practices and insights on how to work with the public on fire prevention activities.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify products of combustion
Differentiate flammable and combustible liquids
Analyze present fire problems

Demonstrate local/state fire code uses
Identify means of egress requirements for various occupancies
Demonstrate pre-inspection and post-inspection techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FPRT 1136 - Principles of Emergency Services (2)

This course is designed to introduce the student to the systems approach to fire protection by presenting the system components of modern fire department responsibility, including suppression, prevention, public education, emergency medical service, hazardous materials response and urban search and rescue. Other concepts emphasized are incident effectiveness, customer service, physical fitness and training, and fire prevention.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine the advantages of obtaining a certificate or degree
Explore examples of work ethics
Identify the origins of modern fire protection
Explain the difference between technical and manipulative training
Classify the role of the fire department
Identify the U.S. fire problem

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-993-1300

Credit Details: Lecture: 2

FRPT 1155 - Fire Protection Systems (2)

This course will teach the student how to review built-in fire protection system design. The student will learn about portable extinguishers, fixed special agent systems, water supply and sprinkler systems.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the benefits of fire protection systems in various types of structures
Identify different types of non-water-based fire suppression systems
Evaluate the appropriate application of the different types of sprinklers
Identify the different types and components of sprinkler, standpipe, and foam systems
Analyze the operation and appropriate application for the different types of portable extinguishing systems
Ascertain appropriate application of the different types of sprinklers
Evaluate flow needs
Demonstrate flow testing procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-993-1300

Credit Details: Lecture: 2

FRPT 1161 - Building Construction for the Fire Service (3)

This course is designed to teach the student the principles used in constructing various types of buildings. The overall goal of this course is to provide knowledge about the classifications system of buildings, the importance of fire resistance for structural support elements, and the risks associated with performing fire suppression activities inside and around buildings involved with fire.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Discover construction principles
Classify major types of building construction

Identify the characteristics of building materials
Detect structural elements
Diagnose structural assemblies
Explain the different loads and stresses that are placed on a buildings and their interrelationships
Determine predicted fire behavior
Apply risk analysis to building safety
Differentiate between firestopping and draftstopping
Discover the difference between noncombustible and fire-resistive construction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-993-1300

Credit Details: Lecture: 3

FRPT 1165 - Apparatus Operator (3)

This course is designed to provide knowledge of pumping apparatus design. The student will learn about the mechanical workings of fire pumps and the accessories required to use the pumps. It will introduce the student to apparatus maintenance and necessary record keeping. The student will also develop attitudes and skills necessary for safe driving and operation of a pumper. This course will introduce the student to the hydraulics used on the fire ground. This course follows the NFPA 1002 Standard for apparatus operators.

Prerequisite: FRPT1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine the principles of pump operating systems
Predict conditions that may result in pump damage
Demonstrate various driving skills
Calculate types of fluid pressures
Determine types of hydrants
Calculate available water flow
Produce fire streams
Calculate friction loss
Identify the principles of drafting water

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-993-1300

Credit Details: Lecture: 1 Lab: 2

FRPT 1176 - Hazardous Materials First Responder Operational (2)

This course is designed to teach the necessary skills to protect yourself, your fellow responders and the public from exposure in a hazardous materials incident. The course meets the requirements of the OSHA 1910.120 for the First Responder Operation level. The student will learn how to recognize and identify the presence of hazardous materials, the proper protective clothing to use, how to decontaminate properly, how to establish an Incident Command System and the proper standard operating procedures to maintain safety at the incident scene. The course follows the NFPA Standard 472 requirements for the First Responder Operational level.

Prerequisite: FRPT1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine DOT/UN (Department of Transportation/United Nations) hazard classifications
Determine an events analysis
Illustrate physical properties of hazardous materials
Show the components of a MSDS (Materials Safety Data Sheet)
Classify types of chemical protective clothing
Ascertain the level of decontamination needed
Show the set up of a decontamination station
Construct an incident action plan
Practice defensive actions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 1240 - Emergency Response Operations (1)

This course is to supplement the material and skills learned in Firefighter I, Apparatus Operator and Hazardous Materials classes and give the student hands on experience by simulating the job in the field. This will give the student experience in working a fire department shift and an opportunity to exercise their skills and decision-making

abilities through various controlled scenarios including different types of fires, fire alarms, vehicle accidents, rescues, hazardous materials release and other emergency calls.

Prerequisite: FRPT1100, FRPT1105 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to work with other entities within the emergency response
Analyze various situations found in the field
Mitigate various emergencies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

FRPT 2105 - Fire Instructor II (2)

This course is designed to provide individuals entering into situations which require planning for teaching or instructing with some of the advanced skills necessary to oversee a classroom or drill ground setting. The student will learn the role of the instructor, to identify various learning styles and develop instructional materials, and will demonstrate the ability to deliver instruction and evaluate student learning.

Prerequisite: FRPT1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Coordinate training sessions
Formulate budget needs
Conduct a class
Develop instructional materials
Create a lesson plan
Modify a lesson plan
Develop instructor evaluation instruments
Analyze student evaluations to determine test validity

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2110 - Strategy and Tactics (2)

This course is designed to teach the student the components of the Command System and how it relates to controlling a fire scene. The student will learn standard operating procedures and how they relate to functions of command.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate command functions
Determine Size-Up
Apply tactics
Determine fireground roles
Identify communication problems
Ascertain strategy
Develop an incident action plan
Implement an incident action plan
Determine the importance of delegation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2115 - Fire Officer II (2)

The Fire Officer II is a mid-level supervisor who performs both supervisory and first-line managerial functions and

who has met the requirements for Fire Officer I. Study will focus in the area of Human Resource Management, Community and Government Relations, Inspection and Investigation, Emergency Service Delivery, Health and Safety.

Prerequisite: FRPT1110 and FRPT1120

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply actions to maximize member performance
Develop a policy or procedure
Prepare a project or divisional budget
Administer the procedures for conducting fire inspections
Determine the point of origin
Analyze an accident
Evaluate job performances
Produce operational plans
Prepare a concise report
Conduct a post-incident analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2120 - Fire Investigation II (2)

This course is designed to teach the student the basic skills needed for fire investigations. The student will learn basic insurance concerns, photography, use of sketching devices, investigative techniques, and characteristics of wildland fires, vehicle fires and fatal fires. The student will learn about explosives, incendiary, legal aspects, interviews, field notes and report writing.

Prerequisite: FRPT1125 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate the different types of information to collect
Classify basic insurance terms
Examine home owners, commercial, industrial, and vehicle fire insurance policies
Contrast the process of gathering evidence
Evaluate criminal and civil legal options
Demonstrate the process of identifying, collecting and storing evidence

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2125 - Fire Inspector II (2)

This course is designed to give the student an understanding of modern fire prevention activities. The student will learn advanced code usage and advanced inspection practices, and gain insight on how to work with the public.

Prerequisite: FRPT1130 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Ascertain the need for fire prevention and fire codes
Predict future fire protection concerns
Determine the origin of local and state building codes
Demonstrate code writing procedures
Examine methods to reduce inspector liability
Evaluate past, present, and future inspection and enforcement activities
Confirm the origin of local, state and national fire codes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2130 - Fire Officer III (2)

This course is designed to give student the skills necessary to organize and manage a municipal fire department. The student will understand interdepartmental relationships, city government, and fire department organization, and will learn basic administrative skills.

Prerequisite: FRPT2115 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate written and oral communication procedures
Determine the fire chief's role in personnel management
Evaluate the organizational management model
Compare the position of volunteer, paid-on-call and full time fire fighter
Examine hiring constraints
Convey liability issues facing a fire chief
Relate the need for job entry qualifications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

FRPT 2140 - Personnel Management for Fire Department Services (3)

This course will give the student skills in personnel practices and management procedures. The student will learn concepts of collective bargaining, binding arbitration, promotional procedures and career incentive plans.

Prerequisite: FRPT2115 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret the roles of human resources
Determine the role of city council
Demonstrate the process of problem solving
Demonstrate the process of decision making
Apply problem solving and decision making skills
Interpret the role of arbitrator
Apply delegation of authority
Demonstrate the communication process
Discover the role of city attorney

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

HCCC - Health Care Core Curriculum

HCCC 1030 - Behaviors for Success in the Healthcare Industry (0.5)

This course focuses on the behavioral requirements needed by healthcare workers to effectively work in a variety of health care settings. Accountability and responsibility, standards of dress, workplace behavior, approaches needed to assist clients and expectations of teams and team members will also be included. Students will explore how to apply for employment, healthcare facility policies and procedures and selected medical and departmental abbreviations. Emphasis will be placed on how health care workers can impact the quality of health care and balance their work and personal life to maintain personal wellness. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe ways healthcare personnel can balance work and personal life to maintain personal wellness
Describe the expectations employers have of healthcare personnel
Identify quality issues in healthcare facilities relating to how they impact workers and delivery of care
Describe the common policies and requirements for various healthcare facilities

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1040 - Awareness and Sensitivity to Client's Needs (0.5)

This course presents challenges and issues related to the awareness and sensitivity needed to understand the healthcare needs of clients. This includes the impact disease has on individuals, the emotional, spiritual, and social needs of clients, and the type of care needed by different age groups. Also included is the process of death and dying and how it affects clients and their families. Must be taken Pass/Fail

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the major stages of human development to include basic health needs
Explain the needs of clients of different age groups and how those needs can affect behaviors, attitudes and service strategies for quality of care
Describe the types of emotional, spiritual and social needs of clients and their families
Explain how different diseases can influence the functioning, behaviors and attitudes of individuals

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1050 - Respect for Client and Staff Diversity (0.5)

This course provides a framework for dealing with diverse residents, clients and staff. Included are belief systems, cultural practices, and respect and sensitivity to cultural and gender issues. Emphasis is placed on awareness and use of effective strategies to appropriately deal with diversity in the workplace. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare one’s personal belief system and practices with those of other cultures
Identify personal responsibilities to respect people as individuals
Describe workplace expectations for interaction between team members, clients and individuals from diverse cultures, gender, age and sexualities
Describe how healthcare employees can respect client and staff members

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1060 - Communication in Healthcare (1)

This course emphasizes the importance of effective communication between and among healthcare workers and their clients. Included are verbal and nonverbal communication, listening skills, interpersonal communication, team communication, documentation and reporting, and the use of electronic communication skills to support quality client care. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe components of effective verbal and non-verbal communication
Explain how active listening skills can improve communication
Identify the use of a variety of communication techniques to achieve effective interpersonal and team communication
Apply a problem solving process in healthcare situations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HCCC 1070 - Healthcare Safety and Standard Precautions (0.5)

This course focuses on the rules and standards related to regulatory policies required of healthcare facilities, as well as personal safety standards and requirements to work in healthcare settings. Included are the principles and standards of infection control, standard precautions and healthcare facility safety policies. Strategies to ensure personal, client and resident safety, and procedures to respond to emergencies will also be addressed. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the principles and standards of infection control
Identify agencies with requirements for safety standards in healthcare facilities, their employees, clients and individuals
Describe the process that healthcare facilities use to achieve safety in various areas
Identify the ways in which healthcare workers can demonstrate personal and client safety

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1080 - HCCC1080 (0.5)

This course focuses on the legal issues related to clients and healthcare workers. Areas such as healthcare laws, client rights and responsibilities, confidentiality, liability, documentation, and regulations are explored. The relationship between ethics and legal issues is discussed, as well as the impact laws and regulations have on healthcare systems. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define the Vulnerable Adult Law and how it relates to abuse, neglect, and exploitation
Explain the laws related to healthcare and their influences on the healthcare delivery system
Describe confidentiality and its impact on all concerned
Describe the obligation of the healthcare providers to ensure clients and workers' rights

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1090 - Healthcare Ethics (0.5)

This course emphasizes the use of sound ethical practices in healthcare. Included are ethical principles and standards as they relate to the care of clients and interactions with peers, colleagues, and team members. Ethical frameworks are provided for discussion on understanding the types of ethical challenges in healthcare and the difficult decisions that need to be made. Must be taken Pass/Fail.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Describe basic principles of professional relationships
Identify ethical decision making models applied to healthcare
Identify aspects of ethical decision making in healthcare
Describe dimension of values as they impact healthcare

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0.5

HCCC 1100 - Nursing Assistant Skills (2)

This course focuses on the skills needed to successfully care for residents in a multitude of health care settings. This course includes, but is not limited to, the following skills for providing a resident care: personal hygiene, effective communication, safety in transferring and moving, feeding and hydration needs, and monitoring of vital signs. Additional skills in how to recognize resident concerns/problems and report these issues to the charge nurse, and the ability to correctly document cares provided for the resident are included in this course. There are 64 hours of skills training in this course, 40 hours will be in the lab and 24 hours will be at a Minnesota Department of Health (MDH) approved facility. Completion of the seven HCCC courses, plus this Nursing Assistant (NA) skills course prepares the student to take the Nursing Assistant Test Out (NATO) written and skills certification exams. This course must be taken Pass/Fail.

Prerequisite: HCCC1030, HCCC1040, HCCC1050, HCCC1060, HCCC1070, HCCC1080, and HCCC1090

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate ability to effectively communicate with residents
Demonstrate ability to safely transfer residents
Demonstrate ability to perform personal hygiene cares for residents
Demonstrate ability to correctly don and doff personal protective equipment
Measure and record intake of hydration and output of body fluids of a resident
Measure and record vital signs of a resident

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

lab: 2

HLTH -

HLTH 1000 - Introduction to Health Careers (3)

This course is designed to serve as an exploration and orientation to various fields in the healthcare industry, such as medical assisting, medical office careers, nursing, pharmacy technician, emergency medical services, and health unit coordinator. It is intended to be survey of the healthcare industry in the United States. This course provides students with an opportunity to learn more about various careers in healthcare, the job outlook, career pathways, and what is needed to be successful in healthcare.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine professionalism and the factors that are involved in becoming a professional within the health care industry
Compare potential healthcare careers with respect to personal values, knowledge skills, attitudes, educational requirements, program offerings and employment opportunities in order to define and structure career goals
Investigate the requirements for entry into a variety of healthcare professions degree programs, certification/licensure, and prior experience
Investigate the educational background methods of credentialing and licensing requirements of healthcare professions on a state and national level
Identify legal and ethical responsibilities affecting the practice of health care professionals
Describe the current health care systems and their trends
Assess professional goals to the best-fit healthcare field and determine the educational path necessary to achieve this professional goal
Analyze attitudes, values and behaviors to promote positive human relationships and appropriate communication both verbal and non-verbal in a health care setting
Assess critical thinking skills through case studies, which include problem solving, communication, and decision making skills that will be utilized in a healthcare setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 3 lab: 0

HLTH 1010 - Anatomy and Physiology (4)

This course assists the student to understand the basics of anatomy and physiology of the human body. This course will span the entire organizational format of the body, starting with the basic cell and including all of the body systems to form the complex human being. In addition, students will learn the basics of medical terminology associated with

anatomy and physiology.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and HLTH1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
List the levels of organization of the human body
Describe the eleven major organ systems using proper medical terminology
Differentiate between types of cellular movement
Explain the four different functions of intact skin
Identify the major structures of the skeletal system
Demonstrate the actions of the major muscle groups
Compare functions of the structures located in the nervous system
Categorize the major endocrine organs based on the type of hormones they secrete
Trace the blood flow through the body
Identify the organs included in the digestive process
Explain how oxygen and carbon dioxide are exchanged in the respiratory system
Describe the events in urine formation
List structures required to produce and transport the gametes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus 952-995-1300

Credit Details: lecture: 4

HLTH 1020 - Disease Conditions (3)

This course introduces the student to important concepts related to human diseases. The most common disease and disorders of each body system are presented along with a review of the anatomy and physiology pertinent to the content. Additionally, the effects of aging throughout the lifespan on the body systems and the relationship to the disease are presented.

Prerequisite: HLTH1010 and HLUC1020 or MAST1010

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define disease
Explore concepts related to human disease
Explore manifestations of diseases
Investigate mechanisms associated with human diseases
Define key terminology relevant to human diseases
Identify signs of diseases
Identify symptoms of disease
Investigate diagnostic tests for common human diseases
Investigate diagnostic tests for common human disorders

Discover etiology related to human diseases
Convey disease prevention to age specific population
Describe common human diseases
Investigate the effects of aging on specific body systems
Investigate nutritional considerations related to disease process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus 952-995-1300

Credit Details: lecture: 3

HLTH 2001 - Nutrition and Health (2)

This course provides information concerning the relationships between health, food and nutrients. The student will be able to identify the nutritional requirements across the lifespan. Connections between nutrition and health promotion, in addition to cultural, ethnic and religious diversity will be discussed.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on the computer literacy assessment test OR CPLT1100 or CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze the basic nutrients needed for a healthy diet
Apply basic nutrition for healthy living
Illustrate the nutritional challenges faced when adapting to a new culture
Analyze nutritional needs throughout the life span
Formulate dietary plans throughout the life span
Investigate eating disorders
Develop a plan to prevent foodborne illnesses

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 2

HLUC - Health Unit Coordinator

HLUC 1002 - Health Unit Coordinator Fundamentals (4)

This course is an introduction to Health Unit Coordinator nursing unit procedures, routines and communication devices. The student will learn the importance of using critical thinking, problem solving and effective communication skills in the health care environment. An introduction to the roles of the health care team members, admission, discharge and transfer procedures will be covered as well as employment seeking strategies.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Outline national standards for Health Unit Coordinators
Examine Health Unit Coordinator's routine tasks
Break down the Health Unit Coordinator's employment responsibilities
Analyze health care team member responsibilities
Explore unit communication devices
Model effective communication strategies
Use health care facility forms
Explore customer service strategies
Differentiate between patient movement procedures
Characterize hospital departments
Summarize legal and ethical standards in health care
Examine safety requirements for health care facilities
Apply employment seeking strategies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

HLUC 1020 - Medical Terminology (2)

This blended online course is designed to acquaint the student with medical terms and abbreviations used in health care settings. Students will be introduced to terms related to basic human anatomy, common diseases and related terminology. Medical abbreviations used by the Health Unit Coordinator and other members of the health care team will be introduced.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Formulate medical terms
Use word parts to understand medical terms
Figure out medical abbreviations
Transform medical symbols to words
Analyze human body system terminology
Specify terminology for common diseases

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

HLUC 1061 - Diagnostic and Therapeutic Procedures (3)

This course is designed to acquaint the student with diagnostic tests and procedures, medication types and terminology, therapies and nursing procedures. The student will become familiar with the terminology necessary to transcribe physician orders. Beginning transcription skills will be taught.

Prerequisite: Successful completion in HLUC1002 and HLUC1020

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate beginning transcription
Use transcription tools
Use hospital forms
Translate abbreviations
Analyze related medical terms
Differentiate between nursing order categories
Break down the steps for scheduling diagnostic procedures
Categorize therapeutic procedures
Examine support departments
Correlate knowledge of order components to order types

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

HLUC 1101 - Processing Physician`s Orders (2)

This course is designed to give the student the skills needed in transcribing physician's orders. Opportunities will be provided for the student gain experiences transcribing medication orders, diagnostic studies orders, treatment orders, diet orders and activity orders. The student will become acquainted with specialty orders such as admission orders, preoperative orders and postoperative orders. Computer transcription will also be introduced. In addition, the student will gain experience reading hand written physician orders.

Prerequisite: Successful completion in HLUC1002, HLUC1020, and HLUC1061

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Process physician orders
Critique orders
Categorize types of physician orders
Execute computer applications for order transcription
Figure out handwritten orders
Break down specialty orders
Incorporate unit specific competencies
Summarize Health Unit Coordinator Internship requirements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 2

HLUC 1200 - Health Unit Coordinator Internship (3)

This is a cooperative training program between Hennepin Technical College and local health care facilities which allows the student to apply competencies learned in the program to an actual work experience. The student will be assigned to a specific nursing unit in a hospital or nursing home and will be expected to perform various HUC duties.

Prerequisite: Successful completion of the Health Unit Coordinator courses and instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Practice HUC duties in a health care facility

Model professional communication and interpersonal skills
Coordinate activities on the nursing unit
Use communication devices
Subscribe to health care facilities policies and procedures
Utilize procedures for processing physician orders
Utilize patient records
Model professional standards for Health Unit Coordinators

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 3

HVAC - Heating, Ventilation, Air Conditioning and Refrigeration

HVAC 1000 - Electrical Circuits (3)

This course is designed to introduce the student to the fundamentals of direct current and alternating current circuits. Meter usage, circuit computations, and troubleshooting will also be covered.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret electrical symbols
Identify electrical construction materials
Calculate wire sizes
Create simple lighting circuit
Calculate simple circuit properties
Measure simple circuit electrical properties
Troubleshoot simple electrical circuit
Troubleshoot electrical components
Repair individual electrical components
Create complex wiring circuits
Calculate complex circuit electrical properties
Measure complex circuit electrical properties
Troubleshoot complex electrical circuit
Assemble a three way switching circuit
Assemble a fan/blower electrical circuit
Troubleshoot fan/blower electrical circuit

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

HVAC 1005 - OSHA 30-Hour Construction Safety Training (2)

This course is designed to meet the requirements of the Occupational Safety and Health Administration (OSHA) 30-Hour Construction Safety Training requirements. The OSHA course will introduce various OSHA policies, standards, and procedures as they apply to the construction industry. Hazards associated with the construction industry will be brought to the student's attention. The OSHA safety and health principles will be applied to the work place in order to minimize the effects these hazards may have. Students must complete the OSHA 30-Hour Construction Safety Training at HTC. Transfer courses will not be accepted.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify OSHA regulations pertaining to the construction industry
Demonstrate the proper use of personal protective equipment
Prepare OSHA record keeping forms
Recognize fall hazards
Recognize electrical safety requirements
Define requirements for a competent person(s)
Demonstrate proper use of hand and power tools
Recognize excavation hazards
Recognize ladder and stairway hazards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

HVAC 1010 - 1PH Motors and Auxiliary Controls (2)

This course covers the basic fundamentals of motors. This course will also teach the student to maintain, operate and service motors and auxiliary controls. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: HVAC1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify electromagnetism
Identify electromagnetism as it applies to inductance
Identify electromagnetism as it applies to motors
Identify electromagnetism as it applies to relays/contactors
Identify electromagnetism as it applies to start relays
Troubleshoot electromagnetic components
Repair electromagnetic components
Identify single speed motors
Identify multi-speed motors
Identify adjustable speed drives
Identify dual voltage motors
Troubleshoot electrical motors
Repair electrical motors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1015 - Residential Heat Load Calculation (1)

This course will explore the factors that influence the size and performance needs of residential heating and cooling equipment.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify factors affecting heat load in a residential structure
Identify factors affecting cooling load in a residential structure
Calculate heat and cooling load requirements for a simulated structure

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

HVAC 1020 - Tube and Pipe Fabrication (2)

This course will introduce the student to the basic techniques involved in tube and pipe fabrication. This course also introduces the student to industrial safety practices.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify HVAC tube/pipe materials
Identify tube/pipe fabrication tools
Use tubing tools
Operate gas torches
Solder tubing
Create solder project
Create brazed project
Calculate iron pipe lengths
Identify pipe fabrication tools
Use piping tools
Create pipe project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1025 - Mini-Split Air Conditioners (1)

This course explores the installation and service concerns for residential Mini – Split Air Conditioners.

Prerequisite: HVAC1040 or Industry Experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform various troubleshooting methods used on Mini-Splits
Examine diagnostic techniques to service Mini-Splits
Identify Mini-Split installation practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

HVAC 1030 - Sheet Metal (2)

This course will introduce the skills required to assemble duct work for air distribution in heating and air conditioning systems.

Prerequisite: HVAC1000 and HVAC1020

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use hand tools
Use manual fabrication machines
Use electric fabrication machines
Construct metal ducts
Calculate Air flows
Construct furnace plenum
Construct furnace plenum extension
Construct A-coil pan
Construct isolation collar
Manufacture slips and drives
Manufacture seams and edges
Select vent pipes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1035 - National Electrical Outcome Assessment (0)

This HVAC Excellence Electrical examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: HVAC1000, HVAC1010, and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the examination with 70% or better score

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1040 - Basic Refrigeration (4)

This course will expose the student to the basic physical laws relating to refrigeration systems components, refrigeration theory, the refrigeration cycle and system operation. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: HVAC1000 and HVAC1020

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze sensible heat
Analyze latent heat
Calculate heat quantity
Differentiate pressure scales
Differentiate refrigerants
Compare refrigerant pressure/temperature scales
Solve gas law problems
Analyze refrigerant cycle
Analyze compressor operation
Analyze condenser operation
Analyze evaporator operation
Analyze metering device operation
Operate refrigerant system
Access refrigerant system using manifold gages

Measure refrigerant pressures
Measure refrigerant temperatures
Measure air temperatures
Calculate subcooling
Calculate superheat
Install refrigerant
Remove refrigerant
Test for refrigrant leaks
Operate pump down

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus Eden Prairie Campus 952-995-1300

Credit Details: lecture: 3 lab: 1

HVAC 1045 - National Residential Air Conditioning Assessment (0)

This HVAC Excellence Residential Air Conditioning examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: HVAC1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the examination with 70% or better score

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1050 - Refrigerant Transition and Recovery (1)

This course provides the information required to prepare students for EPA Refrigerant Transition and Recovery

Certification. The certification examination will be administered upon completion of this training. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: An understanding of a Refrigeration System operation

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze refrigerant chemistry
Evaluate Montreal Protocol
Distinguish recovery of refrigerants
Distinguish recycle of refrigerants
Distinguish reclaim of refrigerants
Apply rfrigerant conservation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

HVAC 1055 - Refrigeration Certification Exam (0)

This examination is certified by the EPA and packaged by ESCO Institute.

Prerequisite: HVAC1050 or knowledge of HVAC systems operations

Course Requirements and Evaluation: Refer to CourseSyllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve questions on section 1 Environmental Pertection Agency test
Solve questions on section 2 Environmental Pertection Agency test
Solve questions on section 3 Environmental Pertection Agency test
Solve questions on section 4 Environmental Pertection Agency test

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1065 - National Gas Heat Outcome Assessment (0)

This HVAC Excellence Gas Heat examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: HVAC1071

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the examination with 70% or better score

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1071 - Gas Heat Systems (4)

This course will provide the student with the skills needed for combustion and efficiency testing, troubleshooting, and good ventilation practices involved with warm air heating systems. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Clean burners
Select orifices
Compare LP/Natural gas pressures
Adjust gas pressures
Calculate combustion efficiency
Identify electrical components
Adjust limit controls
Draw electrical circuits
Measure voltages
Measure flame sensing circuit
Measure air properties
Calculate furnace heat using air flow
Compare vent systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

HVAC 1075 - National Commercial Refrigeration Outcome Assessment (0)

This HVAC Excellence Commercial Refrigeration examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: HVAC2121 and HVAC2130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the examination with 70% or better score

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1081 - Oil Heat Systems (1)

This course will aid the student in developing skills for troubleshooting and servicing high pressure gun type burners, primary controls and warm air system operation.

Prerequisite: HVAC1000, HVAC1071 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare oil furnace burners
Diagram fuel oil systems

Diagram electrical systems
Test oil pressures
Test combustion
Identify vent system
Diagnose oil system problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1085 - National Commercial Air Conditioning Outcome Assessment (0)

This HVAC Excellence Commercial Air Conditioning examination is given by Hennepin Technical College and is a nationally recognized student outcome assessment.

Prerequisite: HVAC2001

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the examination with 70% or better score

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

HVAC 1095 - North American Technician Excellence (NATE) (0)

The NATE tests given to students are a nationally recognized outcome assessment for technicians in the HVAC field.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Pass the exam with 70% or better

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

0

HVAC 1100 - Service Call Completion (1)

This course will prepare the student to successfully complete a residential HVAC service call.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify customer needs
Communicate with the customer their HVAC service options
Complete service call

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1110 - Electrical Diagrams (2)

This course is designed to introduce the student to the fundamentals of electrical control circuitry, including the development of schematic and ladder diagrams and point-to-point wiring exercises.

Prerequisite: HVAC1000 and HVAC1010

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify ladder diagrams
Identify schematic diagrams
Draw diagram power source
Draw transformer connections
Draw switching device wiring
Draw terminal strip wiring
Draw motor wiring
Draw thermostat connections
Draw gas valve wiring
Draw electrical diagrams
Connect wire diagrams

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1120 - Psychrometrics (1)

This course will introduce the student to the fundamentals of air properties.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify air conditions
Plot air properties
Determine air conditions in a given space
Determine air conditions leaving a cooling machine
Determine air conditions leaving a neating machine
Determine mixed air conditions
Advise methods to change conditions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1130 - Room Air Conditioners (2)

This course will introduce the skills for troubleshooting and servicing room air conditioners.

Prerequisite: HVAC1000, HVAC1020, HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify hermetic compressors
Identify refrigerant system components
Identify electrical system components
Test refrigerant system components
Test electrical system components
Repair refrigerant system components
Repair electrical system components
Analyze refrigerant pressures
Troubleshoot refrigerant system problems
Troubleshoot electrical system problems
Analyze air flows
Troubleshoot air flow problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1140 - Central Air Conditioners (3)

This course will assist the student in developing skills for installing, troubleshooting and servicing central air conditioners.

Prerequisite: HVAC1000, HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare condensing unit locations
Compare refrigerants

Diagram refrigerant components
Identify evaporator installation criteria
Identify lineset installation criteria
Examine air distribution system
Diagram electrical wiring
Identify thermostat location
Identify start-up proceedures
Calculate total air flow
Calculate air balancing
Repair mechanical system
Repair electrical system
Repair air flow system
Compare SEER ratings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

HVAC 1146 - Residential Heat Pumps (2)

This course will assist the student in developing skills for installing, troubleshooting and servicing heat pumps.

Prerequisite: HVAC1000, HVAC1040, and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagram refrigeration system
Identify reversing valve
Identify defrost system
Identify thermostats
Explain auxiliary heat
Show sequence of operation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1151 - Hydronic Heat Systems (2)

This course is designed to teach the safety concerns and operation of hydronic heating systems. The student will learn troubleshooting, installation concerns, and repair of hydronic heating systems.

Prerequisite: HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Calculate water flows
Compare water boilers
Diagnose air problems
Diagram water piping
Identify zone controls
Identify installation concerns

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 1155 - Radiant Heat Systems (1)

This course will expose the student to in-floor/ceiling radiant heat concepts that include sizing, application, and servicing.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify components and materials used in radiant heat systems.
List advantages of radiant in-floor and ceiling heat.
Demonstrate how radiant heat tubing is constructed.
Observe radiant heat floor and ceiling construction methods.
Design a radiant in-floor heating system.
Identify commercial radiant heating applications.
List control strategies.
Design boiler piping schematics.

Interpret radiant heat wiring schematics.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1160 - Air Quality Systems (1)

This course will introduce the student to the skills necessary to service air filtration systems, heat recovery ventilators and humidifiers.

Prerequisite: HVAC1071 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify indoor air quality issues
Identify air filtration systems
Identify humidification systems
Identify heat recovery ventilation systems
Integrate systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1175 - R-410A Certification Training (1)

These newly manufactured R-410A air conditioning systems will require contractors and technicians to shift to different tools and equipment, safety standards and fundamentals when installing, changing out (retrofitting) older split A/C systems, and repairing systems in the field. R-410A operates at significantly higher pressures and refrigeration capacity. This course will prepare you for these new challenges, and with successful completion of the

certification exam, show evidence of your professional ability to safely handle and work with this new generation of refrigerants and air conditioners.

Prerequisite: An understanding of the operation of a Refrigeration/ Air Conditioning system

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare refrigerants
Compare refrigerant pressures
Identify R410A tools
Identify safety requirements
Study for R410A test

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 1181 - MN Class CBoiler Operator License (3)

Whether you are at the entry level or an experienced operator, this course covers the information needed to take you to the next level.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe boiler operating principles
Identify boiler fittings
Describe feedwater systems
Identify steam system components
Identify draft systems
Identify safe operating conditions
Locate boiler safety controls
Describe boiler operation safety
Discuss Minnesota Special Boiler License requirements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

HVAC 1185 - R-410A Certification Exam (0)

This examination is certified by the AC/R Safety Coalition and Packaged by ESCO institute.

Prerequisite: HVAC1175

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Take R410A examination

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

0

HVAC 1190 - MN Special Boilers License (1)

This course covers the information needed to take the Minnesota State Special Boilers License Examination.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify water boiler components
Identify steam boiler components
Identify requirements for Minnesota Special Boiler License
Identify safe operating conditions
Test boiler safety controls

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 0

HVAC 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

HVAC 2001 - Packaged Heating and Cooling Equipment (4)

In this course, students will learn heating and cooling principles relating to commercial machines. Students will learn about and work on rooftop machines, computer room units and make up air systems.

Prerequisite: HVAC1040, HVAC1071 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze electrical diagrams
Perform refrigerant charging
Adjust safety controls
Adjust economizers
Test draft

Adjust gas pressure
Adjust burners
Perform combustion checks
Troubleshoot electrical problems
Test ignition system
Test smoke detectors
Analyze refrigerant system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

HVAC 2005 - Commercial HVAC/R Safety and Servicing Procedures (2)

This course is designed to instruct the student on safety and troubleshooting skills when repairing Commercial HVAC/R equipment.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and HVAC1000, HVAC1010, HVAC1040, HVAC1050, HVAC1071 & HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize personal safety equipment
Perform lock out/tag out procedure
List commercial heating equipment sequence of operation
List commercial cooling equipment sequence of operation
Test compressor oil for acid and/or moisture
Add oil to compressors
Analyze commercial HVAC/R electrical components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

HVAC 2010 - Commercial Heat Pump Systems (2)

In this course the student will learn the installation, operation and service techniques needed to understand heat pumps. The auxiliary equipment relating to water source heat pumps will also be covered.

Prerequisite: Residential HVAC Diploma or equivalent industry experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Troubleshoot electrical, refrigeration, air, and water flow systems
Analyze air flow, water flow and electrical systems
Calculate cooling and heating cfm (cubic feet per minute)
Adjust temperature differences

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 2020 - Pneumatic Controls (2)

In this course students will be introduced to pneumatic controls. Content will contain the various pneumatic controllers, sensors and related devices. Theory of operation will also be covered.

Prerequisite: HVAC1040

Course Requirements and Evaluation: Referto Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Adjust air regulators
Calibrate thermostats
Install pneumatic relays and switches
Install sensors and restrictors
Install thermostats, receiver controllers, and EP switches
Calibrate receiver/controllers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

HVAC 2030 - Commercial Ice Making Machines (3)

Students in this course will learn about the machines that make ice for commercial applications. Cube and flake processes will be covered. This course involves advanced electrical and refrigerant troubleshooting procedures.

Prerequisite: HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze refrigerant pressures
Analyze Ice production times
Analyze Ice cube quality
Adjust floats
Troubleshoot mechanical and electrical components
Troubleshoot air and water flow problems
Troubleshoot freeze cycle
Troubleshoot termination controls
Recharge or replace refrigerant

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

HVAC 2041 - Gas/Refrigeration (Mechanical) Code (1)

This lecture course is designed to assist the student in becoming familiar with the Uniform Mechanical Code. Students will use the Uniform Mechanical Code book and the Minnesota Amendments in this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Size fuel gas piping

Size refrigerant piping
Size venting
Calculate ventilation air, exhaust air, and combustion air sizes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 2050 - Electrical for Commercial HVAC&R Equipment (2)

This course introduces the concepts and principles of three phase power and line voltage control and the controllers. Motor wiring techniques are also included in this primarily lecture course.

Prerequisite: HVAC1010 and HVAC1040

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Draw control circuits and three phase circuits
Wire control circuits andthree phase circuits
Troubleshoot control circuits and three phase circuits
Troubleshoot motor contactors
Troubleshoot overloads
Troubleshoot starters

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

HVAC 2060 - Computer Room Air Conditioning (1)

This course entails heat/cool machines for computer room comfort control. This course will teach the student installation, start up and servicing of computer room heat/cool machines.

Prerequisite: Residential HVAC Diploma or equivalent industry experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze electrical diagram
Adjust safety controls
Adjust temperature setpoints
Adjust humidity setpoints

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

HVAC 2100 - Water Chiller Machines (3)

This lecture course introduces theory and operation of the equipment required to heat and cool water for the environment conditioning of commercial buildings. Repair and operation of pumps, valves and chillers will be explained.

Prerequisite: HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze star-delta starting systems
Analyze control wiring
Analyze refrigeration systems
Adjust condenser water gallons per minute
Adjust evaporator chilled water gallons per minute
Maintain and service pumps
Troubleshoot control circuits
Troubleshoot water circuits
Troubleshoot safety controls
Troubleshoot operational controls
Test cooling tower control

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

HVAC 2111 - Low Pressure Steam and Water Boilers (2)

This lecture course is designed to provide the student with the knowledge to take and pass the Minnesota Boilers Low Pressure Licensing exams. Students will learn safe and efficient operation of boilers.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Record steam pressures, gas pressures, oil pressures, feed water levels, flame voltage, boiler water level, and condensate water level
Analyze steam traps
Check boiler chemicals
Analyze redundant operating and safety controls

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

HVAC 2121 - Refrigerated Coolers and Cases (4)

In this course students will learn about and work on walk in coolers and meat and dairy cases. Electrical and refrigeration troubleshooting will be stressed. Students will also work with a variety of refrigerants.

Prerequisite: HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze electrical diagrams
Analyze refrigeration diagrams

Troubleshoot refrigeration problems
Troubleshoot electrical problems
Troubleshoot water flow problems
Troubleshoot air flow problems
Troubleshoot defrost problems
Repair electrical components
Repair refrigeration components
Replace electrical components
Replace refrigeration components
Adjust refrigeration charge and TXV's (Thermostatic Expansion Valves)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

HVAC 2130 - Supermarket Refrigeration (3)

In this course, students will have the opportunity to learn multiple compressor and multiple cooling/freezing case operation. Complex refrigeration controls as well as electrical and refrigeration defrost circuits will be the focus of this course.

Prerequisite: HVAC1040 and HVAC1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze electrical systems
Analyze refrigeration systems
Explain electrical components
Explain refrigeration components
Program microprocessor
Adjust superheat
Analyze superheat
Explain reverse hot gas defrost
Explain hot gas defrost
Explain reverse warm gas defrost
Explain warm gas defrost

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

HVAC 2165 - Air Handling Units (1)

This course will offer an analysis of different air handling units including face-bypass, hot deck-cold deck, reheat coils, and HRV`s (Heat Recovery Ventilators).

Prerequisite: Residential HVAC Diploma or equivalent industry experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze AHU's (Air Handling Units) and VAV's (Variable Air Volumn)
Analyze RA (Return Air) fans, EA (Exhaust) fans, and SA (Supply Air) fans
Draw operational HVAC AHU

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

IBEM - Industrial Building Engineering and Maintenance

IBEM 1000 - Welding Maintenance (3)

Introduction to SMAW and GMAW welding processes and plasma, oxy-acetylene, sawing, and abrasive cutting processes. Covers identification and weldability of metals, safety and basic tool practices. Students will learn to layout, fit and weld sheet, plate, round and square shapes of steel, stainless steel and aluminum. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply welding terms, test positions and nomenclature
Examine gas metal arc welding process
Examine shielded metal arc welding process
Produce quality welds
Calculate work area for project development
Execute safe operation of welding equipment
Complete various fabrication projects
Modify metals with various cutting techniques
Demonstrate the lay-out techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

IBEM 1010 - Carpentry Maintenance (3)

This course introduces students to the basic principles and techniques of maintenance carpentry. Students will have the opportunity to read and interpret blueprints, identify code requirements, operate basic power tools, install/repair doors, casing, cabinetry and drywall.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze portable power tool operations
Discuss safety procedures for building construction
Implement measurement techniques
Analyze layout techniques for wall and floor construction
Construct floors and walls
Execute drywall hanging and repair techniques
Execute installation of window and door trim
Execute cabinet installation techniques
Execute plastic laminate procedures for countertop construction
Execute demolition techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

IBEM 1020 - HVAC Maintenance (3)

This course will expose the student to the basic physical laws relating to refrigeration system components. Refrigeration theory, the refrigeration cycle, system operation and maintenance concerns.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze environment air characteristics
Calculate environmental air properties
Differentiate pressure scales
Differentiate refrigerants
Compare refrigerant pressure/temperature scales
Analyze HVAC equipment operation
Analyze refrigerant properties
Analyze air properties
Operate HVAC equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

IBEM 1030 - Tube and Pipe Repair (2)

This course will introduce the student to the basic techniques involved in tube and pipe fabrication. This course also introduces the student to basic industrial safety practices.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify HVAC tube/pipe materials
Identify tube/pipe fabrication tools

Use tubing tools
Operate gas torches
Create solder project
Create brazing project
Calculate pipe lengths
Identify pipe fabrication tools
Use piping tools
Create pipe project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

IBEM 1040 - Rigging Procedures and Forklift Operations (1)

This course is designed to introduce students to the safety, equipment and operations used in rigging procedures. Students will also learn safe forklift operation procedures.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Execute proper rigging techniques
Operate fork lift in accordance with O.S.H.A. standards
Determine safe material handling techniques
Demonstrate effective use of material handling equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

IBEM 2000 - Industrial Building Engineering and Maintenance Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Industrial Building Engineering and Maintenance industry. The student is responsible for locating and arranging the internship site. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Instructor approval and completion of at least 50% of your degree or diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

INFS - Information Science

INFS 2000 - Research Skills in the Information Age (3)

In today’s information-driven world, the ability to find and use information effectively is essential to success in college and beyond. This class will take a broad-based approach to developing information-seeking strategies and skills for academic and work-related research. Students will learn how information is created, organized, disseminated, and accessed; and they will gain experience analyzing research needs, selecting appropriate research tools, critically evaluating potential sources, and using information legally and ethically. Students will have the opportunity to explore the literature and information sources in specific programs, career fields, or other areas of academic interest. The class will also explore a number of contemporary issues surrounding information in society.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain how information is produced, organized, and disseminated in society
Outline how information is affected by cultural, political and economic factors
State an information need

Apply library-based research tools and classification systems to find information sources
Critique library-based and Internet research tools to determine those most appropriate for locating desired information
Identify a variety of types and formats of potential sources of information
Design a research strategy using search techniques appropriate for library and Internet search tools
Execute research strategies
Critique research outcomes
Examine information for authenticity, credibility, intellectual content, and bias
Construct accurate MLA or APA citations
Apply bibliographic citations and Internet equivalents to obtain cited items
Investigate information sources in career field, program area, or related disciplinary areas
Identify issues related to copyright and intellectual freedom
Contrast public vs. private ownership of information

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MnTC Goal Areas: 2.

LAWE - Law Enforcement

LAWE 2225 - Criminal Investigation (3)

This course is designed to provide the student with information pertaining to basic duties and responsibilities of a peace officer as they relate to crimes against person and crimes against property. A presentation of the goals for successful crimination investigations will include crime scene considerations, building and establishing elements of a crime, learning to obtain information and evidence and working within the confines and constraints of a legal framework.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the use of police interview positioning
Demonstrate understanding and knowledge of interviewing techniques
Demonstrate the ability to write narrative reports
Define identified legal terms
Explain investigative principles
Outline law enforcement goal setting
Define chain of custody
Define constitutional amendments
Explain report writing elements
Define elements of an offense
Explain Minnesota statutes
Demonstrate methods of crime scene protection

Demonstrate ability to collect and preserve evidence
Explain duties of crime scene investigator
Define types of evidence relevant in a crime scene investigation
Explain how to question a suspect
Demonstrate understanding of legal issues regarding Miranda rights
Explain duties of first responder

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.3 Use and interpret verbal and non-verbal cues to enhance interpersonal communications.
1.1.4 Describe and demonstrate active listening skills including paraphrasing, reflecting meaning, and summarizing understanding to obtain and clarify information.
1.1.5 Demonstrate reading comprehension skills necessary in law enforcement including: the ability to differentiate between facts, opinions and propaganda, understanding sequencing of events, and recognizing cause and effect.
1.1.6 Compose documents that demonstrate competent writing skills, including: writing from the first person viewpoint, differentiating between facts, inferences and opinions, correctly structuring sentences and paragraphs, and using correct grammar, spelling, punctuation and capitalization.
1.2.1 Discuss the inter-relationship between core beliefs, integrity and ethical reasoning.
1.2.2 Identify ethical issues in a variety of law enforcement related situations and apply ethical reasoning to decision making processes.
1.2.3 Evaluate and apply strategies for responding to unethical or illegal actions that may arise within law enforcement and public safety.
1.2.4 Model behaviors that demonstrate commitment to ethical and professional behavior.
1.3.1 Define and describe models of the conscious processes of critical thinking, logical reasoning and problem solving.
1.3.3 Applying reason and evidence to formulate logical inferences and draw logical conclusions.
1.3.4 Analyze and evaluate ideas, proposals, and solutions to problems using basic forms of logic and techniques designed to encourage sound reasoning.
1.4.1 Describe decision-making processes and models.
1.6.5 Discuss ways officers can promote positive relationships with community members of varying races, ethnicities, national origins, immigration statuses, genders, ages, economic classes, disabilities and/or sexual orientations. (Minn. Stat. 626.8455)
1.7.3 Identify the value of cooperation and collaboration in solving problems.
2.2.5 Summarize the forms of individual protection related to search and seizure granted by the US Constitution.
2.2.6 Explain the meaning of the good faith doctrine, the fruit of the poisonous tree doctrine and the inevitable discovery doctrine as they pertain to Fourth Amendment rights.
2.2.7 State the requirements of the Fourth Amendment on the law of arrest.
2.2.13 Describe the following suspect identification methods: line-up, photo line-up, and field identification.
2.2.21 Explain the impact of the Fourteenth Amendment as it relates to due process and equal protection under the law including: the difference between the Fifth and Fourteenth amendments in terms of due process the differences between substantive and procedural due process, and how Fourteenth Amendment rights constrain law enforcement authority in interrogations.
2.3.1 Define the following terms: search warrant, arrest warrant, subpoena, order for protection (OFP), ex-parte order for protection, qualified domestic violence-related order (QDVRO), Harassment Restraining Order (HRO), no-contact orders, night-capped warrant, no-knock warrant, and curtilage.
2.3.2 Explain and demonstrate search warrant preparation including establishing a factual basis for probable cause and identifying items to be searched for and seized.
2.3.3 Identify the legal requirements governing preparation and execution of the search warrant of a suspect's home or dwelling, vehicle, or person.
2.3.4 Explain the scope and limitation of a lawful warrant-less seizure during a consent search of persons.
2.3.5 Explain the scope and limitation of a lawful warrantless search of a premise and warrantless search of a vehicle.
2.3.6 Explain the scope and limitation of a lawful warrant-less search during a search based on exigent circumstances.
2.3.7 Explain the scope of a lawful warrant-less search during a plain view search.
2.3.8 Discuss how telephonic search warrants and search warrant templates can speed up the search warrant application process.
2.3.9 Explaining each of the following types of orders: Domestic Violence Protective Orders, Order of No Contact, and Orders to Pick Up Children.
2.4.1 Explain what constitutes an arrest and the differences between a contact, a detention and an arrest.
2.4.2 State the requirements of the Fourth Amendment on the law of arrest.
2.4.3 Discuss protocols and terms associated with arrest including "reasonable suspicion" and "probable cause".

2.4.4 Describe the stop and frisk standard as found in "Terry vs. Ohio" and subsequent cases.
2.6.1 Explain the Supreme Court decision Miranda vs. Arizona and the four components of the Miranda warning.
2.6.2 Explain a criminal defendant's Sixth Amendment right to an attorney in all criminal prosecutions including interviews and interrogations.
2.6.3 Describe legal interviewing and interrogation techniques peace officers may use and the difference between a voluntary and a coerced statement.
2.6.4 Explain the difference between custodial and noncustodial interview or interrogation.
2.6.5 Describe considerations for videotaping and recording interviews and interrogations and explain when interrogations must be recorded (State v. Scales, 518 N.W.2d 587 (Minn.1994).
2.6.6 Explain when admissions and confessions are legally admissible in court.
2.6.7 Explain the purpose of an interrogation and how results of interrogation can be used in trials.
2.6.8 Explain the conditions under which confessions may or may not be used in court.
2.23.1 Identify and discuss crimes commonly described as cybercrime or internet crime.
3.3.1 Describe the relationship between good report writing and testimony.
3.13.1 Discuss officer safety issues relevant to serving warrants and special procedures to follow when serving potentially high risk warrants.
3.14.4 Explain law enforcement procedures for response to child and vulnerable adult abuse and neglect situations including: identifying behaviors, signs or symptoms indicative of physical, sexual, and psychological abuse, maltreatment and neglect, completing mandatory reporting requirements, contacting appropriate social service agencies, explaining Munchausen by proxy and shaken baby syndromes, and explaining what sudden infant death syndrome is and how it is not a crime.
3.14.5 Identify mandatory reporters of suspected abuse and discuss where to report, what must be reported, the confidentiality of reports, and the legal ramifications for not reporting.
3.14.6 Discuss the collaborative child abuse team approach in investigating child abuse.
3.14.7 Discuss special interview consideration when dealing with children including the terms suggestibility and child centered interviewing.
3.14.8 Explain child welfare holds that allow officers to remove children from at-risk situations.
3.14.11 Explain officer duties in death notification/body identification situations.
3.14.12 Discuss investigation and evidence collection techniques specifically related to homicide, suicide, accidental and natural death scenes.
3.14.13 Discuss the role of peace officers in a variety of disaster and large scale emergencies including: the importance of initial on-scene assessment for immediate action and resources needed and for on-going threats and safety concerns, i.e., gas leaks, downed power lines, looters, fires, etc., the importance of interagency communications and cooperative interaction between law enforcement agencies, utility companies, and other resources, and large scale traffic and crowd management.
3.14.14 Given a scenario, explain or demonstrate an initial scene assessment.
3.14.15 Summarize the elements of the Incident Command System (ICS) including: the overall objectives and primary functions of ICS, the typical agencies that are involved in the ICS, the roles of emergency/first responder in preparedness and response systems during and after disaster situations, the typical hierarchical chain of command structure, and the role of the FBI if the disaster is related to foreign or domestic terrorism.
3.14.16 Summarize characteristics of systems involved in preparing for and managing large scale disasters including: the elements of the national preparedness system and the national response plan, and the purposes, key concepts and principles of the National Incident Management System (NIMS).
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.48 Explain or demonstrate law enforcement procedures for responding to situations and crime scenes involving juveniles as victims and/or offenders including: enforcing status offense laws, apply laws applicable to interviewing a juvenile, explaining the 72 hour hold rule governing shelter placements, the 36 hour hold rule governing detention hold, parent or guardian notification requirements regarding placements and detentions, and custody and liability issues, applying appropriate data practices rules governing incidents involving juveniles including who may request and receive juvenile data, and explaining to whom a juvenile may be released.
3.14.59 Define the terms white collar crime and identity theft and describe the importance of evidence protection in investigation of financial fraud, white collar crime and identify theft.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

LAWE 2230 - Legal Issues for Law Enforcement (3)

The course will familiarize students with the principles of criminal procedures, the rules established by the United States Supreme Court relating to stop, frisk, arrest, search interrogation and identification, and the legal process applicable to law enforcement. Students will study the legal concepts involved in the application of the 4th, 5th, and 6th Amendments to policing as well as Minnesota State Constitution and procedural requirements.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain key terms and the basic rules governing searches, seizures and interrogations
Explain the protections and operations of the US and MN constitution
Explain the effect of the 14th Amendment
Define the warrant requirements
Explain the protections available under the 4th Amendment
Define legal elements of a vehicle and/or pedestrian stop
Explain when and where an arrest may be made without a warrant
Explain the proper execution of different types of arrest warrants
Explain the use and scope of searches incident to arrest
Describe the scope and authority required to search a vehicle on probable cause
Describe the Exclusionary rule and it's principle exceptions
Explain the rights provided under the 5th Amendment pursuant to Miranda
Describe the rules related to Show Ups and Line Ups, including right to counsel
Describe the requirements for obtaining a search warrant
Explain key terms and rules governing search, seizure, and interrogation
Describe the application of the defenses of capacity, self-defense, and entrapment
Describe the features of liability under state law and civil rights statutes

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.4 Describe and demonstrate active listening skills including paraphrasing, reflecting meaning, and summarizing understanding to obtain and clarify information.
1.1.5 Demonstrate reading comprehension skills necessary in law enforcement including: the ability to differentiate between facts, opinions and propaganda, understanding sequencing of events, and recognizing cause and effect.
1.1.6 Compose documents that demonstrate competent writing skills, including: writing from the first person viewpoint, differentiating between facts, inferences and opinions, correctly structuring sentences and paragraphs, and using correct grammar, spelling, punctuation and capitalization.
1.2.1 Discuss the inter-relationship between core beliefs, integrity and ethical reasoning.
1.2.2 Identify ethical issues in a variety of law enforcement related situations and apply ethical reasoning to decision making processes.
1.2.3 Evaluate and apply strategies for responding to unethical or illegal actions that may arise within law enforcement and public safety.
1.2.4 Model behaviors that demonstrate commitment to ethical and professional behavior.
1.3.1 Define and describe models of the conscious processes of critical thinking, logical reasoning and problem solving.
1.3.3 Applying reason and evidence to formulate logical inferences and draw logical conclusions.

1.3.4 Analyze and evaluate ideas, proposals, and solutions to problems using basic forms of logic and techniques designed to encourage sound reasoning.
1.4.1 Describe decision-making processes and models.
1.6.5 Discuss how family dynamics and communication methods, both verbal and non-verbal, vary between cultures and how recognition of these variances can benefit officers and communities.
1.7.3 Identify the value of cooperation and collaboration in solving problems.
2.1.1 Discuss the historic need for rules to control human conduct, enforce societal directives and empower authoritative enforcement of those rules.
2.1.2 Incorporate an understanding of the history of criminal justice and the contemporary system of criminal justice in the U.S. into a perspective about current peace officer duties, responsibilities, and actions.
2.1.3 Describe the history behind the ratification of the U.S. Constitution.
2.1.4 Explain the need for a balance between public safety and personal rights in a free society.
2.1.5 Identify and discuss the significance of historic and contemporary events, customs, and social mores that have influenced the current system of justice in the U.S.
2.1.6 Describe the history and impact of including women and diverse community representation in law enforcement.
2.1.7 Explain the roles of law enforcement, the courts and corrections.
2.1.8 Explain the functions and jurisdictions of law enforcement agencies including federal, state, county, municipal, tribal, and international.
2.1.9 Explain the broad functions of the correctional system including imprisonment, parole and probation.
2.1.10 Identify the meaning of criminal justice system terms, e.g.: custody, arraignment, circumstantial evidence, double jeopardy, entrapment, exigent circumstances, conviction, bodily harm, substantial bodily harm, great bodily harm, assault, probation, qualified domestic violence related offense (Minn. Stat. 609.02), forfeiture, "good faith" exception, exclusionary rule, indictment, inevitable discovery, probable cause, Miranda warning, reasonable suspicion, warrant, probation, and parole.
2.1.11 Describe the function and responsibility of each of the key participants involved in a typical courtroom hearing or trial including judges, jury members, prosecuting and defense attorneys and witnesses.
2.2.1 Describe the sources of laws in the U.S. including federal law, state law, case law, and administrative regulatory law and the process by which laws, statutes and ordinances are enacted.
2.2.2 Explain provisions of the Constitution and Bill of Rights that impact or restrict law enforcement including the First, Second, Fourth, Fifth, Sixth, Eight and Fourteenth Amendments.
2.2.3 Explain how the Separation of Powers Doctrine works.
2.2.4 Distinguish between criminal law and criminal procedure and explain the difference between substantive and procedural law.
2.2.5 Summarize the forms of individual protection related to search and seizure granted by the US Constitution.
2.2.6 Explain the meaning of the good faith doctrine, the fruit of the poisonous tree doctrine and the inevitable discovery doctrine as they pertain to Fourth Amendment rights.
2.2.7 State the requirements of the Fourth Amendment on the law of arrest.
2.2.8 Explain how constitutional rights in the Fifth, Sixth, and Fourteenth Amendments affect police interrogations.
2.2.9 Summarize the rights of individuals being interrogated under the Fifth and Sixth Amendments and the importance of adhering to procedures that protect those rights including: the prohibition against forced or coerced self-incrimination, the Sixth Amendment right to counsel and correlating Minnesota Statute (Minn. Stat. 481.10).
2.2.10 Evaluate mock crime situations and determine if evidence is admissible under the Fourth Amendment.
2.2.11 Explain types of evidence and the differences between them, i.e., direct and circumstantial evidence.
2.2.12 Describe the exclusionary rule and risks associated with contaminated evidence and loss of chain of custody of evidence.
2.2.13 Describe the following suspect identification methods: line-up, photo line-up, and field identification.
2.2.14 Describe proceedings before a trial including the roles of the law enforcement, the defense attorney and prosecutors.
2.2.15 Summarize the rights and processes related to a fair and speedy trial and the right to a jury trial.
2.2.16 Explain the general provisions for sentencing in the Minnesota Criminal Code and the Minnesota Sentencing Guidelines.
2.2.17 Describe crime classifications misdemeanor through felony.
2.2.18 Discuss enhancements that may be applied to repeat offenders, patterned offenders, and career offenders.
2.2.19 Explain the following terms: concurrent and consecutive sentences, imposition and execution of sentence, determinate and indeterminate sentencing.
2.2.20 List the five constitutional amendments involving equality and rights.
2.2.21 Explain the impact of the Fourteenth Amendment as it relates to due process and equal protection under the law including: the difference between the Fifth and Fourteenth amendments in terms of due process the differences between substantive and procedural due process, and how Fourteenth Amendment rights constrain law enforcement authority in interrogations.
2.2.22 Discuss limits placed on interrogation procedures in order to ensure protection of rights for U.S. citizens and

non-citizens.
2.2.23 Identify the criminal and civil consequences an officer may face by violating a citizen's constitutional right.
2.2.24 Compare and contrast characteristics of the civil and criminal justice systems.
2.3.1 Define the following terms: search warrant, arrest warrant, subpoena, order for protection (OFP), ex-parte order for protection, qualified domestic violence-related order (QDVRO), Harassment Restraining Order (HRO), no-contact orders, night-capped warrant, no-knock warrant, and curtilage.
2.3.2 Explain and demonstrate search warrant preparation including establishing a factual basis for probable cause and identifying items to be searched for and seized.
2.3.3 Identify the legal requirements governing preparation and execution of the search warrant of a suspect's home or dwelling, vehicle, or person.
2.3.4 Explain the scope and limitation of a lawful warrant-less seizure during a consent search of persons.
2.3.5 Explain the scope and limitation of a lawful warrantless search of a premise and warrantless search of a vehicle.
2.3.6 Explain the scope and limitation of a lawful warrant-less search during a search based on exigent circumstances.
2.3.7 Explain the scope of a lawful warrant-less search during a plain view search.
2.3.8 Discuss how telephonic search warrants and search warrant templates can speed up the search warrant application process.
2.3.9. Explaining each of the following types of orders: Domestic Violence Protective Orders, Order of No Contact, and Orders to Pick Up Children.
2.4.1 Explain what constitutes an arrest and the differences between a contact, a detention and an arrest.
2.4.2 State the requirements of the Fourth Amendment on the law of arrest.
2.4.3 Discuss protocols and terms associated with arrest including "reasonable suspicion" and "probable cause".
2.4.4 Describe the stop and frisk standard as found in "Terry vs. Ohio" and subsequent cases.
2.4.5 Explain the legal requirements of, the exceptions to, and the need for an arrest warrant and how one is obtained.
2.4.6 Describe when and how a citizen can make an arrest.
2.4.7 Explain the requirements for private citizens to assist law enforcement officials in preventing escape or effecting arrest.
2.6.1 Explain the Supreme Court decision Miranda vs. Arizona and the four components of the Miranda warning.
2.6.2 Explain a criminal defendant's Sixth Amendment right to an attorney in all criminal prosecutions including interviews and interrogations.
2.6.3 Describe legal interviewing and interrogation techniques peace officers may use and the difference between a voluntary and a coerced statement.
2.6.4 Explain the difference between custodial and noncustodial interview or interrogation.
2.6.5 Describe considerations for videotaping and recording interviews and interrogations and explain when interrogations must be recorded (State v. Scales, 518 N.W.2d 587 (Minn.1994).
2.6.6 Explain when admissions and confessions are legally admissible in court.
2.6.7 Explain the purpose of an interrogation and how results of interrogation can be used in trials.
2.6.8 Explain the conditions under which confessions may or may not be used in court.
2.8.1 Explain Minnesota statutes and relevant case law related to the application of force by peace officers.
2.8.2 Explain the following terms: objectively reasonable, totality of circumstances, situational factors, pre-assaultive indicators, and, escalation and de-escalation as related to peace officer use of force.
2.8.3 Discuss the term reasonable as it related to use of force.
2.8.4 State how department policies regarding use of force including deadly force may and may not vary.
2.8.5 Given scenarios, recognize when force is or is not authorized and give and defend reasonable choices for the application of various types of force depending on the circumstances of the scenario.
2.8.6 Give Supreme Court case examples authorizing the use of deadly force.
2.8.7 Analyze a variety of situations where force may or may not be authorized and demonstrate an understanding of the concept of reasonable use of force.
2.8.8 Explain the Minnesota Statute that requires officers be trained in the use of those weapons and equipment the officer is issued or authorized to carry (Minn. Stat. 626.8452).
2.8.9 Explain when force may be used to make an arrest.
2.8.10 Discuss liabilities associated with the application of force by peace officers.
2.9.1 Discuss peace officer rights, obligations and liabilities under state and federal law including requirements placed on law enforcement agencies to defend and indemnify peace officers for good faith action in the course and scope of employment.
2.9.2 Explain the role of internal affairs.
2.13.1 Define the term predatory offender and describe Minnesota's predatory offender registration system including risk levels that may be assigned to offenders.
2.13.2 Describe when law enforcement agencies are required to provide community notifications regarding predatory offenders and who to contact for assistance with community notifications.

2.13.3 Explain roles peace officers may take in helping predatory offenders understand and complete the Bureau of Criminal Apprehension's predatory offender registration form and in conducting compliance checks on registered predatory offenders.
2.14.2 Discuss the extent, causes and impact of crimes of violence including physical and sexual abuse, physical violence, harassment and stalking, and neglect. (Minn. Stat. 626.8451., Subd. 1a.)
2.23.1. Identify and discuss crimes commonly described as cybercrime or internet crime.
3.2.6 Explain and participate in evidence-based procedures for identifying suspects, i.e., lineup, photo lineup, and field identification, including blind/blinded administration of the lineup, instructions to the eye witness that the perpetrator may or may not be present, use of non-suspect "fillers" that match the eyewitness's description of the perpetrator and do not make the suspect noticeably stand out and asking a witness to state his or her level of certainty, in his or her own words, as soon as an identification is made.
3.3.1 Describe the relationship between good report writing and testimony.
3.13.1. Discuss officer safety issues relevant to serving warrants and special procedures to follow when serving potentially high risk warrants.
3.14.4 Explain law enforcement procedures for response to child and vulnerable adult abuse and neglect situations including: identifying behaviors, signs or symptoms indicative of physical, sexual, and psychological abuse, maltreatment and neglect, completing mandatory reporting requirements, contacting appropriate social service agencies, explaining Munchausen by proxy and shaken baby syndromes, and explaining what sudden infant death syndrome is and how it is not a crime.
3.14.5 Identify mandatory reporters of suspected abuse and discuss where to report, what must be reported, the confidentiality of reports, and the legal ramifications for not reporting.
3.14.6 Discuss the collaborative child abuse team approach in investigating child abuse.
3.14.7 Discuss special interview consideration when dealing with children including the terms suggestibility and child centered interviewing.
3.14.8 Explain child welfare holds that allow officers to remove children from at-risk situations.
3.14.11 Explain officer duties in death notification/body identification situations.
3.14.12 Discuss investigation and evidence collection techniques specifically related to homicide, suicide, accidental and natural death scenes.
3.14.13 Discuss the role of peace officers in a variety of disaster and large scale emergencies including: the importance of initial on-scene assessment for immediate action and resources needed and for on- going threats and safety concerns, i.e., gas leaks, downed power lines, looters, fires, etc., the importance of interagency communications and cooperative interaction between law enforcement agencies, utility companies, and other resources, and large scale traffic and crowd management.
3.14.14 Given a scenario, explain or demonstrate an initial scene assessment.
3.14.15 Summarize the elements of the Incident Command System (ICS) including: the overall objectives and primary functions of ICS, the typical agencies that are involved in the ICS, the roles of emergency/first responder in preparedness and response systems during and after disaster situations, the typical hierarchical chain of command structure, and the role of the FBI if the disaster is related to foreign or domestic terrorism.
3.14.16 Summarize characteristics of systems involved in preparing for and managing large scale disasters including: the elements of the national preparedness system and the national response plan, and the purposes, key concepts and principles of the National Incident Management System (NIMS).
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.19 Explain when an arrest is warranted, when an arrest is mandatory and the time period in which an arrest can be made in domestic violence related situations.
3.14.48 Explain or demonstrate law enforcement procedures for responding to situations and crime scenes involving juveniles as victims and/or offenders including: enforcing status offense laws, apply laws applicable to interviewing a juvenile, explaining the 72 hour hold rule governing shelter placements, the 36 hour hold rule governing detention hold, parent or guardian notification requirements regarding placements and detentions, and custody and liability issues, applying appropriate data practices rules governing incidents involving juveniles including who may request and receive juvenile data, and explaining to whom a juvenile may be released.
3.14.58 Manage a sexual assault situation including: identifying the victim and if the victim is a child, vulnerable adult or adult, and adjusting communication and procedures appropriately, establishing rapport with victims i.e., making victims feel safe, letting them know the assault was not their fault, informing victims of the importance of their cooperation in gathering forensic evidence and pressing charges while ensuring victims understand that the choice is up to them, advising victims of their rights and providing them with a victims rights card, assisting immediate medical needs of victims, communicating with the medical staff treating the victim regarding the need for a forensic evaluation/use of a sexual assault kit to collect evidence, and identifying, protecting, collecting and preserving evidence including photographs, clothing, seminal fluid, saliva, hairs, blood, bedding, fibers, etc.
3.14.59 Define the terms white collar crime and identity theft and describe the importance of evidence protection in

investigation of financial fraud, white collar crime and identify theft.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

LAWE 2231 - MN Criminal and Traffic Codes (3)

This course is an overview of the Minnesota Criminal Code and Minnesota Traffic Laws. Emphasis is on coverage of statutes emphasized in Minnesota Peace Officer Standards and Training (POST) learning objectives. The course combines characteristics of two POST secondary learning attitudes; academic education and vocational-oriented training. The course will enhance both knowledge of criminal and traffic laws the student will use as an officer and understanding of how our laws are affected by case law.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply knowledge of criminal and traffic codes in the daily functions of a police officer
Demonstrate knowledge of MN criminal codes and traffic laws
Examine key terms defined in criminal and traffic laws of Minnesota
Justify the appropriate use of discretion by an officer
Differentiate between the penalty classifications from petty misdemeanors to felonies
Identify the difference between state statutes and city ordinances and their interrelationship
Select appropriate multiple counts for criminal acts and enhancements for repeat offenders
Apply MN Peace Officer mandated duties associated with specific state statutes
Identify MN statutes that apply to bias-motivated hate crimes
Differentiate between the elements of domestic abuse, assault, harassment and stalking
Distinguish between domestic-related court orders
Explain mandated reporting of suspected abuse to children and vulnerable adults
Discuss criminal liability for police officers
Interpret probable cause, criminal statutes and traffic laws
Analyze how traffic laws apply to driving conduct in traffic and impaired driving situations
Distinguish between types and classes of driver's license, endorsements, permits and exemptions
Summarize the different types of vehicle registration and insurance requirements
Apply appropriate MN traffic laws to traffic accident investigations

Minnesota POST Board Learning Objectives:
1.6.4 Discuss how recognizing and valuing diversity, cultural differences and varied perspectives, promotes community unity, facilitates information gathering and contributes to officer safety.
1.6.6 Discuss how family dynamics and communication methods, both verbal and non-verbal, vary between cultures and how recognition of these variances can benefit officers and communities.
1.6.7 Discuss culturally responsive approaches to dealing with victims and perpetrators of violence. (Minn. Stat. 626.8451., Subp. 1.a. (4))
1.7.3 Identify the value of cooperation and collaboration in solving problems.
1.8.1 Discuss the importance of a survival mindset for officers including: physical and psychological preparation

for force encounters, risks associated with complacency, and wearing body armor and other safety equipment.
1.8.3 Explain some of the stressors encountered by peace officers and their effect on officers and their families including: duty related stressors, i.e. frequent encounters with illegal or unethical behaviors, emotionally charged scenes, people in distress, trauma and tragedy, stressors related to fatigue and shiftwork, and stress and long term effects associated with hypervigilance.
2.1.1 Discuss the historic need for rules to control human conduct, enforce societal directives and empower authoritative enforcement of those rules.
2.1.2 Incorporate an understanding of the history of criminal justice and the contemporary system of criminal justice in the U.S. into a perspective about current peace officer duties, responsibilities, and actions.
2.1.3 Describe the history behind the ratification of the U.S. Constitution.
2.1.4 Explain the need for a balance between public safety and personal rights in a free society.
2.1.5 Identify and discuss the significance of historic and contemporary events, customs, and social mores that have influenced the current system of justice in the U.S.
2.1.6 Describe the history and impact of including women and diverse community representation in law enforcement.
2.1.7 Explain the roles of law enforcement, the courts and corrections.
2.1.8 Explain the functions and jurisdictions of law enforcement agencies including federal, state, county, municipal, tribal, and international.
2.1.9 Explain the broad functions of the correctional system including imprisonment, parole and probation.
2.1.10 Identify the meaning of criminal justice system terms, e.g.: custody, arraignment, circumstantial evidence, double jeopardy, entrapment, exigent circumstances, conviction, bodily harm, substantial bodily harm, great bodily harm, assault, probation, qualified domestic violence related offense (Minn. Stat. 609.02), forfeiture, "good faith" exception, exclusionary rule, indictment, inevitable discovery, probable cause, Miranda warning, reasonable suspicion, warrant, probation, and parole.
2.1.11 Describe the function and responsibility of each of the key participants involved in a typical courtroom hearing or trial including judges, jury members, prosecuting and defense attorneys and witnesses.
2.2.1 Describe the sources of laws in the U.S. including federal law, state law, case law, and administrative regulatory law and the process by which laws, statutes and ordinances are enacted.
2.2.2 Explain provisions of the Constitution and Bill of Rights that impact or restrict law enforcement including the First, Second, Fourth, Fifth, Sixth, Eight and Fourteenth Amendments.
2.2.3 Explain how the Separation of Powers Doctrine works.
2.2.4 Distinguish between criminal law and criminal procedure and explain the difference between substantive and procedural law.
2.2.5 Summarize the forms of individual protection related to search and seizure granted by the US Constitution.
2.2.6 Explain the meaning of the good faith doctrine, the fruit of the poisonous tree doctrine and the inevitable discovery doctrine as they pertain to Fourth Amendment rights.
2.2.7 State the requirements of the Fourth Amendment on the law of arrest.
2.2.8 Explain how constitutional rights in the Fifth, Sixth, and Fourteenth Amendments affect police interrogations.
2.2.9 Summarize the rights of individuals being interrogated under the Fifth and Sixth Amendments and the importance of adhering to procedures that protect those rights including: the prohibition against forced or coerced self-incrimination, the Sixth Amendment right to counsel and correlating Minnesota Statute (Minn. Stat. 481.10).
2.2.10 Evaluate mock crime situations and determine if evidence is admissible under the Fourth Amendment.
2.2.11 Explain types of evidence and the differences between them, i.e., direct and circumstantial evidence.
2.2.12 Describe the exclusionary rule and risks associated with contaminated evidence and loss of chain of custody of evidence.
2.2.13 Describe the following suspect identification methods: line-up, photo line-up, and field identification.
2.2.14 Describe proceedings before a trial including the roles of the law enforcement, the defense attorney and prosecutors.
2.2.15 Summarize the rights and processes related to a fair and speedy trial and the right to a jury trial.
2.2.16 Explain the general provisions for sentencing in the Minnesota Criminal Code and the Minnesota Sentencing Guidelines.
2.2.17 Describe crime classifications misdemeanor through felony.
2.2.18 Discuss enhancements that may be applied to repeat offenders, patterned offenders, and career offenders.
2.2.19 Explain the following terms: concurrent and consecutive sentences, imposition and execution of sentence, determinate and indeterminate sentencing.
2.2.20 List the five constitutional amendments involving equality and rights.
2.2.21 Explain the impact of the Fourteenth Amendment as it relates to due process and equal protection under the law including: the difference between the Fifth and Fourteenth amendments in terms of due process the differences between substantive and procedural due process, and how Fourteenth Amendment rights constrain law enforcement authority in interrogations.
2.2.22 Discuss limits placed on interrogation procedures in order to ensure protection of rights for U.S. citizens and non-citizens.

2.2.23 Identify the criminal and civil consequences an officer may face by violating a citizen's constitutional right.
2.2.24 Compare and contrast characteristics of the civil and criminal justice systems.
2.3.1 Define the following terms: search warrant, arrest warrant, subpoena, order for protection (OFP), ex-parte order for protection, qualified domestic violence-related order (QDVRO), Harassment Restraining Order (HRO), no-contact orders, night-capped warrant, no-knock warrant, and curtilage.
2.3.2 Explain and demonstrate search warrant preparation including establishing a factual basis for probable cause and identifying items to be searched for and seized.
2.3.3 Identify the legal requirements governing preparation and execution of the search warrant of a suspect's home or dwelling, vehicle, or person.
2.3.4 Explain the scope and limitation of a lawful warrant-less seizure during a consent search of persons.
2.3.5 Explain the scope and limitation of a lawful warrantless search of a premise and warrantless search of a vehicle.
2.3.6 Explain the scope and limitation of a lawful warrant-less search during a search based on exigent circumstances.
2.3.7 Explain the scope of a lawful warrant-less search during a plain view search.
2.3.8 Discuss how telephonic search warrants and search warrant templates can speed up the search warrant application process.
2.3.9. Explaining each of the following types of orders: Domestic Violence Protective Orders, Order of No Contact, and Orders to Pick Up Children.
2.4.1 Explain what constitutes an arrest and the differences between a contact, a detention and an arrest.
2.4.2 State the requirements of the Fourth Amendment on the law of arrest.
2.4.3 Discuss protocols and terms associated with arrest including "reasonable suspicion" and "probable cause".
2.4.4 Describe the stop and frisk standard as found in "Terry vs. Ohio" and subsequent cases.
2.4.5 Explain the legal requirements of, the exceptions to, and the need for an arrest warrant and how one is obtained.
2.4.6 Describe when and how a citizen can make an arrest.
2.4.7 Explain the requirements for private citizens to assist law enforcement officials in preventing escape or effecting arrest.
2.5.1 Describe the basic organization, purpose, and definitions and principles of the Minnesota Criminal Code.
2.5.2 Explain the classifications of crimes including felony, misdemeanor, gross misdemeanor and the meaning of the term petty misdemeanor.
2.5.3 Explain what is meant by elements of a crime and describe the connection between criminal conduct and criminal intent (mens rea).
2.5.4 Explain why it is important for officers to be able to identify and document elements of crimes when responding to and investigating crime scenes.
2.5.5 Given a variety of scenarios, identify indications a particular crime has been committed and identify the elements of that crime.
2.5.6 Identify and explain Minnesota Statutes relating to weapons, chemical agents, electronic control weapons and interference with public property.
2.5.7 Explain special Minnesota peace officer duties associated with specific statutes including: Informing crime victims of their rights and assisting victims of violent crime including domestic assault, restraining orders and orders for protection, data collection on battered women cases, interviewing child abuse victims, officer responsibilities regarding missing children, and mandated reporter for child abuse and vulnerable adults.
2.6.1 Explain the Supreme Court decision Miranda vs. Arizona and the four components of the Miranda warning.
2.6.2 Explain a criminal defendant's Sixth Amendment right to an attorney in all criminal prosecutions including interviews and interrogations.
2.6.3 Describe legal interviewing and interrogation techniques peace officers may use and the difference between a voluntary and a coerced statement.
2.6.4 Explain the difference between custodial and noncustodial interview or interrogation.
2.6.5 Describe considerations for videotaping and recording interviews and interrogations and explain when interrogations must be recorded (State v. Scales, 518 N.W.2d 587 (Minn.1994).
2.6.6 Explain when admissions and confessions are legally admissible in court.
2.6.7 Explain the purpose of an interrogation and how results of interrogation can be used in trials.
2.6.8 Explain the conditions under which confessions may or may not be used in court.
2.7.2 Define status offense, give examples of status offenses that can only be committed by a juvenile and discuss the limits of peace officer authority in relationship to status offenses.
2.8.1 Explain Minnesota statutes and relevant case law related to the application of force by peace officers.
2.8.2 Explain the following terms: objectively reasonable, totality of circumstances, situational factors, pre-assaultive indicators, and, escalation and de-escalation as related to peace officer use of force.
2.8.3 Discuss the term reasonable as it related to use of force.
2.8.4 State how department policies regarding use of force including deadly force may and may not vary.
2.8.5 Given scenarios, recognize when force is or is not authorized and give and defend reasonable choices for

the application of various types of force depending on the circumstances of the scenario.
2.8.6 Give Supreme Court case examples authorizing the use of deadly force.
2.8.7 Analyze a variety of situations where force may or may not be authorized and demonstrate an understanding of the concept of reasonable use of force.
2.8.8 Explain the Minnesota Statute that requires officers be trained in the use of those weapons and equipment the officer is issued or authorized to carry (Minn. Stat. 626.8452).
2.8.9 Explain when force may be used to make an arrest.
2.8.10 Discuss liabilities associated with the application of force by peace officers.
2.9.1 Discuss peace officer rights, obligations and liabilities under state and federal law including requirements placed on law enforcement agencies to defend and indemnify peace officers for good faith action in the course and scope of employment.
2.9.2 Explain the role of internal affairs.
2.10.1 Describe the basic organization, purpose and principles of the Minnesota Criminal Code and its implications for law enforcement including (list is not comprehensive): understanding key traffic related terms (Minn. Stat. 169.011) as well as the terms reckless or careless driving, describing violations of driving rules, parking and stopping violations, and vehicle equipment violations, how and when traffic laws apply to authorized emergency vehicles, and laws regarding driving while impaired.
2.10.2 Discuss non-enforcement deterrents to traffic violations, i.e., police presence/visibility, speed bumps.
2.10.3 Explain vehicle registration and insurance requirements in Minnesota.
2.10.4 Distinguish between different classes and type of licenses, endorsements and permits and explain the circumstances under which an individual is exempt from licensing requirements.
2.12.1 Explain the concept of racially based profiling (Minn. Stat. 262.8471) and other profiling that is based on false assumptions about groups of people and discuss: the impact of the Whren v. United States decision the importance of impartial policing, the difference between the terms pretextual stop and racial profiling and the problems associated with racial profiling by law enforcement, how racial profiling impacts law enforcement credibility and community trust, how to handle the perception of unfair or biased treatment of members of the public by law enforcement, and the importance of an officer's ability to articulate valid reasons for vehicle stops.
2.12.2 Define and explain the impact of hate crimes including: the motivations behind hate crimes, the impact of hate crimes on victims and on communities, the special needs of hate crime victims, and crime characteristics which may indicate a crime was motivated by the victim's race, national origin, sex, age, disability, or sexual orientation (Minn. Stat. 626.8451, Subd. 1).
2.12.3 Explain special reporting requirements related to bias motivated/hate crimes as required by Minn. Stat. 626.5531. (Officers must report to their agencies, agencies to the BCA.)
2.13.1 Define the term predatory offender and describe Minnesota's predatory offender registration system including risk levels that may be assigned to offenders.
2.13.2 Describe when law enforcement agencies are required to provide community notifications regarding predatory offenders and who to contact for assistance with community notifications.
2.13.3 Explain roles peace officers may take in helping predatory offenders understand and complete the Bureau of Criminal Apprehension's predatory offender registration form and in conducting compliance checks on registered predatory offenders.
2.14.1 Define the terms crime and crimes of violence as found in Minnesota Statute.
2.14.2 Discuss the extent, causes and impact of crimes of violence including physical and sexual abuse, physical violence, harassment and stalking, and neglect. (Minn. Stat. 626.8451., Subd. 1a.)
2.14.3 Discuss how anger, intimidation, isolation, restriction of freedom, economic abuse, emotional abuse, threats and psychological abuse, physical abuse and sexual abuse are methods of exerting power and control.
2.14.4 Describe stalking and how it has changed with technological advances.
2.15.1 Explain the legal definitions and significant aspects of Minnesota statutes related to child and vulnerable adult assault, abuse and neglect.
2.15.7 Explain officer reporting requirements relative to incidents of maltreatment neglect, or physical or sexual abuse of minors and vulnerable adults and prenatal exposure to controlled substances (Minn. Stat. 626.556, Subd. 3. and Minn. Stat. 626.557).
2.15.8 Describe who is mandated to report suspected child and vulnerable adult abuse and the ramifications of not reporting.
2.15.11 Explain the term "Drug Endangered Children", the immediate and future risks related to children living in drug related environments and the impact of rescuing drug endangered children may have on breaking the cycle of drug abuse and crime prevention.
2.16.1 Explain what legally constitutes domestic abuse and assault.
2.16.5 Define the following terms outlined in Minnesota Statute: domestic abuse, family or household member, qualified domestic violence-related offense (QDRO), order for protection, exparte order, domestic abuse no contact order, harassment restraining order, harassment, and stalking.
2.16.6 Identify significant aspects of Minn. Stat. related to domestic abuse (Minn. Stat. 629.341 and 518.B01, 609.749, 609.2242) including what legally constitutes domestic assault, elements of various levels of domestic

assault, and enhancement for prior domestic violence related offense convictions.
2.16.9 Explain the peace officer's role in providing victim's rights information to victims of domestic assault.
2.16.11 Discuss when warrantless arrests may be made and when enhancements for previous assaults may be considered.
2.17.1 Define sexual assault as described in Minn. Stat. 611A.211 which includes criminal sexual conduct in the first, second, third, fourth or fifth degree or criminal sexual predatory conduct.
2.17.2 Explain the following terms: date rape, sex trafficking, sexual harassment, and female genital mutilation.
2.18.2 Describe the current state of victim's rights in the criminal justice system. (Minn. Stat. 611A)
2.18.3 Explain the peace officer's role in advising victims regarding shelter and assistance and the importance of demonstrating compassion and concern for victims.
2.18.4 Discuss the importance of confidentiality of a victim's address/location, and connecting victims with victim crisis services.
2.18.5 Discuss culturally responsive approaches to dealing with victims of violent crimes.
2.18.6 Explain the use of the crime victim notification form.
2.18.7 Explain peace officer duties relative to obtaining assistance with non-English speaking victims or victims with communications disabilities.
2.19.4 Identify special communications issues peace officers may encounter and discuss reasonable and appropriate actions officers may take to improve communication with individuals: coping with communication disorders including hearing impairment, whose mobility impairment restricts communication, and coping with autism spectrum disorders, dementia, Alzheimer's disease or intellectual disabilities.
2.26.1 Explain what a criminal gang is as it is defined in Minnesota Statute 609.229 and the penalties for crimes committed for the benefit of a gang.
2.26.2 Discuss the appeal of gang membership, how gangs recruit members, and prevention and intervention methods.
2.26.3 Explain the terms organized crime and racketeering and discuss how organized crime affects Minnesota law enforcement.
2.26.4 Recognize the term RICO Act as meaning the Racketeer Influenced and Corrupt Organizations Act and be able to describe the overall intent of the Act.
2.26.5 Define the term vice crime and describe the attributes of various vice crimes including illegal gambling, prostitution, solicitation and pornography.
3.2.1 Discuss interview techniques used to: build rapport, encourage full meaningful answers and discourage suggestibility, clarify and corroborate statements, enhance memory, detect deception, and obtain information from a reluctant witness.
3.2.2 Discuss interview considerations and techniques for interviewing children, vulnerable adults and traumatized victims.
3.2.6 Explain and participate in evidence-based procedures for identifying suspects, i.e., lineup, photo lineup, and field identification, including blind/blinded administration of the lineup, instructions to the eye witness that the perpetrator may or may not be present, use of non-suspect "fillers" that match the eyewitness's description of the perpetrator and do not make the suspect noticeably stand out and asking a witness to state his or her level of certainty, in his or her own words, as soon as an identification is made.
3.3.1 Describe the relationship between good report writing and testimony.
3.12.2 Identify the following elements of driving conduct as they relate to Minnesota Motor Vehicle and Traffic Laws: speed, local authority, right of way, traffic crashes, railroad crossings, school buses, stopping, standing and parking, reckless and careless driving, open bottle, criminal vehicular operation and fleeing a peace officer, signs and signals, and turning.
3.12.3 Identify the equipment necessary to operate a vehicle in proper working condition including: lighting, brakes, seat belts and child restraints, mufflers, windshields, bumpers; and, identify the exemption from equipment restrictions.
3.12.4 Discuss how traffic law applies to bicycles and pedestrians.
3.14.8 Explain child welfare holds that allow officers to remove children from at-risk situations.
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.19 Explain when an arrest is warranted, when an arrest is mandatory and the time period in which an arrest can be made in domestic violence related situations.
3.14.29 Describe the terms Driving While Impaired (DWI) and Driving Under the Influence (DUI).
3.14.48 Explain or demonstrate law enforcement procedures for responding to situations and crime scenes involving juveniles as victims and/or offenders including: enforcing status offense laws, apply laws applicable to interviewing a juvenile, explaining the 72 hour hold rule governing shelter placements, the 36 hour hold rule governing detention hold, parent or guardian notification requirements regarding placements and detentions, and custody and liability issues, applying appropriate data practices rules governing incidents involving juveniles including who may request

and receive juvenile data, and explaining to whom a juvenile may be released.
3.14.49 Demonstrate familiarity with Minnesota's missing persons related laws (Minn. Stat. 626.8454, Minn. Stat. 299C.51-299C.5655, 390.25) and the definitions included therein.
3.14.56 Given situations involving individuals demonstrating signs and/or characteristics of mental illness, behavioral disorder or suicidal intentions requiring intervention, demonstrate appropriate intervention techniques that are likely to be beneficial in managing the situations (Minn. Stat. 626.8455) including: modeling behavior that shows the importance of putting safety first, staying alert and the danger of complacency or taking anything for granted when dealing with an individual experiencing a mental health crisis, unless situation appears immediately dangerous/critical, avoiding challenging or violating personal space, trying to eliminate noise and distractions, having one officer take lead and open communication from a safe distance, using communication techniques designed to de-escalate volatile situations including: being patient, calm, honest and compassionate, using active listening skills while not encouraging or agreeing with delusions, using a calming voice, and avoiding challenging questions and allowing for venting.
3.14.58 Manage a sexual assault situation including: identifying the victim and if the victim is a child, vulnerable adult or adult, and adjusting communication and procedures appropriately, establishing rapport with victims i.e., making victims feel safe, letting them know the assault was not their fault, informing victims of the importance of their cooperation in gathering forensic evidence and pressing charges while ensuring victims understand that the choice is up to them, advising victims of their rights and providing them with a victims rights card, assisting victims in contacting an advocate when appropriate, determining and responding to the immediate medical needs of victims, communicating with the medical staff treating the victim regarding the need for a forensic evaluation/use of a sexual assault kit to collect evidence, and identifying, protecting, collecting and preserving evidence including photographs, clothing, seminal fluid, saliva, hairs, blood, bedding, fibers, etc.
3.14.59 Define the terms white collar crime and identity theft and describe the importance of evidence protection in investigation of financial fraud, white collar crime and identify theft.
4.4.7 Discuss how pursuit policy issues affect the conduct of pursuits by peace officers and pursuit related mandatory reporting.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

LAWE 2235 - Police Report Writing/Interview (2)

This course establishes the learner's ability to write police reports in a detailed, chronological order using proper format. Emphasis is placed on spelling, grammar, punctuation, and the ability to get clear and concise meaning throughout the report. Additionally, students will learn the proper techniques in interviewing.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the differences between factual and opinion type writing
Provide examples of both narrative and bullet point style of writing
Define the elements needed to elicit a legal confession during an interview
Identify the proper techniques needed for a successful interrogation

Identify elements of an effective interview
Write a police report in chronological order utilizing proper grammar, spelling, and punctuation
Define the differences between an interview and an interrogation

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.1.3 Use and interpret verbal and non-verbal cues to enhance interpersonal communications.
1.1.4 Describe and demonstrate active listening skills including paraphrasing, reflecting meaning, and summarizing understanding to obtain and clarify information.
1.1.5 Demonstrate reading comprehension skills necessary in law enforcement including: the ability to differentiate between facts, opinions and propaganda, understanding sequencing of events, and recognizing cause and effect.
1.1.6 Compose documents that demonstrate competent writing skills, including: writing from the first person viewpoint, differentiating between facts, inferences and opinions, correctly structuring sentences and paragraphs, and using correct grammar, spelling, punctuation and capitalization.
1.2.1 Discuss the inter-relationship between core beliefs, integrity and ethical reasoning.
1.2.2 Identify ethical issues in a variety of law enforcement related situations and apply ethical reasoning to decision making processes.
1.2.3 Evaluate and apply strategies for responding to unethical or illegal actions that may arise within law enforcement and public safety.
1.2.4 Model behaviors that demonstrate commitment to ethical and professional behavior.
1.2.7 Discuss ethical and responsible use of computers and databases by law enforcement.
1.3.3 Applying reason and evidence to formulate logical inferences and draw logical conclusions.
1.3.4 Analyze and evaluate ideas, proposals, and solutions to problems using basic forms of logic and techniques designed to encourage sound reasoning.
1.4.1 Describe decision-making processes and models.
1.6.5 Discuss ways officers can promote positive relationships with community members of varying races, ethnicities, national origins, immigration statuses, genders, ages, economic classes, disabilities and/or sexual orientations. (Minn. Stat. 626.8455)
2.4.2 State the requirements of the Fourth Amendment on the law of arrest.
2.5.4 Explain why it is important for officers to be able to identify and document elements of crimes when responding to and investigating crime scenes.
2.5.5 Given a variety of scenarios, identify indications a particular crime has been committed and identify the elements of that crime.
2.6.3 Describe legal interviewing and interrogation techniques peace officers may use and the difference between a voluntary and a coerced statement.
2.6.4 Explain the difference between custodial and noncustodial interview or interrogation.
2.6.5 Describe considerations for videotaping and recording interviews and interrogations and explain when interrogations must be recorded (State v. Scales, 518 N.W.2d 587 (Minn.1994).
2.6.6 Explain when admissions and confessions are legally admissible in court.
2.6.7 Explain the purpose of an interrogation and how results of interrogation can be used in trials.
2.6.8 Explain the conditions under which confessions may or may not be used in court.
2.21.4 Distinguish between characteristics of passive, aggressive, and assertive behavior.
2.21.5 Discuss body language behaviors that signal potential conflict escalation.
2.22.1 Explain the Data Practices Act as it pertains to the gathering and release of information by law enforcement.
3.1.1 Demonstrate effective and legible field-note taking including collecting crime scene intelligence from witnesses, victims and suspects.
3.1.2 Given crime scene scenarios, solicit information and gather and organize facts needed for a police report.
3.1.3 Given a variety of law enforcement scenarios prepare reports that: are written from the first person viewpoint, differentiate between facts, inferences and opinions, demonstrate correct use of grammar, spelling, punctuation, capitalization, sentence and paragraph structure, are clear, complete, concise and accurate, and include all relevant details.
3.1.4 Prepare documentation for arrest warrants and for search warrants based on probable cause.
3.2.1 Discuss interview techniques used to: build rapport, encourage full meaningful answers and discourage suggestibility, clarify and corroborate statements, enhance memory, detect deception, and obtain information from a reluctant witness.
3.2.2 Discuss interview considerations and techniques for interviewing children, vulnerable adults and traumatized victims.
3.2.3 Discuss how and why interviewing techniques must vary depending on the interviewee and the circumstances, i.e., when interviewing children, traumatized victims.
3.2.4 Conduct interviews using procedures that: are appropriate to the situation, ensure the protection of individual

rights, effectively gather information, encourage cooperation, and enhance memory.
3.2.5 Conduct interrogations of suspects using appropriate techniques to gather information, detect deception, and gain an admission or confession depending on the circumstances.
3.2.6 Explain and participate in evidence-based procedures for identifying suspects, i.e., lineup, photo lineup, and field identification, including blind/blinded administration of the lineup, instructions to the eye witness that the perpetrator may or may not be present, use of non-suspect "fillers" that match the eyewitness's description of the perpetrator and do not make the suspect noticeably stand out and asking a witness to state his or her level of certainty, in his or her own words, as soon as an identification is made.
3.14.58 Manage a sexual assault situation including: identifying the victim and if the victim is a child, vulnerable adult or adult, and adjusting communication and procedures appropriately, establishing rapport with victims i.e., making victims feel safe, letting them know the assault was not their fault, informing victims of the importance of their cooperation in gathering forensic evidence and pressing charges while ensuring victims understand that the choice is up to them, advising victims of their rights and providing them with a victims rights card, assisting victims in contacting an advocate when appropriate, determining and responding to the immediate medical needs of victims, communicating with the medical staff treating the victim regarding the need for a forensic evaluation/use of a sexual assault kit to collect evidence, and identifying, protecting, collecting and preserving evidence including photographs, clothing, seminal fluid, saliva, hairs, blood, bedding, fibers, etc.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

LAWE 2241 - Police Response and Human Behavior (3)

This course is designed to integrate the academic and applied aspects of the basic patrol function for a police patrol officer. Included in this class is the in-depth examination of a patrol officer's duties, functions, and responsibilities, as well as a variety of other practical aspects. These include, but are not limited to, vehicle stops, traffic enforcement, domestics, officer stress, pedestrian contacts, officer safety issues, and other duties as they relate to the basic patrol function.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the impact of human behavior on the interactions between police and communities they serve
Explain law enforcement response strategies to mental health issues, persons in crisis, and critical incident events
Describe the role of law enforcement as it relates, but not limited to, victimization, stalking, predatory offenders, domestic abuse, sexual assault, hate/biased motivated crimes
Explain the role of law enforcement when addressing issues of gangs, drugs, terrorism, and homeland security
Explain basic duties of a first responder to critical incidents involving the use of safety for themselves and others including backup, crime scene management, traffic and crowd control, and post critical incident debriefings
Identify knowledge of police radio techniques and procedures
Explain primary duties and functions of a police officer
Define identified legal terms regarding stop and frisk
Explain the use of police technology
Define command presence

Define different discretions used by a police officer
Describe how a police officer investigates domestic abuse and vulnerable adults

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.1.3 Use and interpret verbal and non-verbal cues to enhance interpersonal communications.
1.2.1 Discuss the inter-relationship between core beliefs, integrity and ethical reasoning.
1.2.2 Identify ethical issues in a variety of law enforcement related situations and apply ethical reasoning to decision making processes.
1.2.3 Evaluate and apply strategies for responding to unethical or illegal actions that may arise within law enforcement and public safety.
1.2.4 Model behaviors that demonstrate commitment to ethical and professional behavior.
1.2.5 Discuss discretion and how it differs from selective enforcement.
1.2.6 Identify some of the causes and ramifications of public distrust of law enforcement and strategies to enhance the public trust.
1.2.7 Discuss ethical and responsible use of computers and databases by law enforcement.
1.3.1 Define and describe models of the conscious processes of critical thinking, logical reasoning and problem solving.
1.3.2 Use structured problem-solving methods to develop creative and innovative solutions to a variety of problems.
1.3.3 Applying reason and evidence to formulate logical inferences and draw logical conclusions.
1.3.4 Analyze and evaluate ideas, proposals, and solutions to problems using basic forms of logic and techniques designed to encourage sound reasoning.
1.3.5 Use critical thinking, logical reasoning and problem solving strategies to formulate ideas, make proposals and suggest solutions a variety of law enforcement related problems or concerns (Minn. Stat. 626.8455).
1.3.6 Apply critical thinking strategies during team discussions.
1.4.1 Describe decision-making processes and models.
1.4.2 Define the term discretion and discuss when and why peace officers use their best judgment in the administration of justice and when discretion is not allowed.
1.4.3 Discuss factors that influence police officer use of discretion.
1.4.4 Based on written scenarios involving law enforcement: describe decisions officers must make, suggest appropriate actions, and defend those decisions and actions.
1.5.1 Discuss how and why the police function is much broader than law enforcement and why reliance on criminal law enforcement to solve problems is not always the best course of action.
1.5.8 Explain how law enforcement management of status offenses and local ordinance violations can positively impact a community.
1.5.9 Describe and give examples of proactive policing versus responsive policing.
1.5.10 Describe problem oriented or problem targeting policing strategies.
1.6.3 Discuss how recognizing and valuing diversity, cultural differences and varied perspectives, promotes community unity, facilitates information gathering, and contributes to officer safety.
1.6.4 Discuss how recognizing and valuing diversity, cultural differences and varied perspectives, promotes community unity, facilitates information gathering and contributes to officer safety.
1.6.5 Discuss ways officers can promote positive relationships with community members of varying races, ethnicities, national origins, immigration statuses, genders, ages, economic classes, disabilities and/or sexual orientations. (Minn. Stat. 626.8455)
1.6.6 Discuss how family dynamics and communication methods, both verbal and non-verbal, vary between cultures and how recognition of these variances can benefit officers and communities.
1.6.7 Discuss culturally responsive approaches to dealing with victims and perpetrators of violence. (Minn. Stat. 626.8451., Subp. 1.a. (4))
1.6.8 Research and discuss the relationship between crime and being underprivileged.
1.6.9 Discuss the diverse groups that make-up Minnesota's communities and some of the traits unique to communities that could impact law enforcement response.
1.7.1 Describe characteristics of professional behavior and the Minnesota Standards of Conduct for licensing Minnesota peace officers.
1.7.2 Describe the repercussions for a finding of a violation of the State's peace officer standards of conduct.
1.7.4 Demonstrate behaviors associated with effectively working as part of a team to solve law enforcement related problems and issues.
1.7.6 Demonstrate skills which promote consensus building, show respect for the opinions of others, and encourage cooperation, adaptability, and conflict resolution.
1.8.1 Discuss the importance of a survival mindset for officers including: physical and psychological preparation for force encounters, risks associated with complacency, and wearing body armor and other safety equipment.

1.8.2 Identify the physiological, psychological and emotional effects of stress.
1.8.3 Explain some of the stressors encountered by peace officers and their effect on officers and their families including: duty related stressors, i.e. frequent encounters with illegal or unethical behaviors, emotionally charged scenes, people in distress, trauma and tragedy, stressors related to fatigue and shiftwork, and stress and long term effects associated with hypervigilance.
1.8.4 Discuss physical and psychological effects of stress before, during and after a high risk or traumatic incident including: the effects of high risk stress on the body including the brain, vision, hearing, muscles and respiratory system, and the nervous and cardiovascular systems, and how knowledge of the effects of stress in high risk or life threatening situations can help officers perform under stress.
1.8.5 Discuss critical incident debriefing and identify support services and resources for peace officers.
1.8.6 Discuss Post Traumatic Stress Disorder (PTSD) and acute stress disorders and their symptoms.
1.8.7 Describe officer survival/safety issues relative to a variety of peace officer duties, including traffic enforcement, arrest, vehicle stops, felony stops, pursuits, and plain clothes and undercover work.
1.8.8 Explain the importance of balancing peace officer roles and responsibilities and other life roles, interests and responsibilities.
1.8.9 Explain why physical fitness attributes including cardiovascular fitness, flexibility, agility, strength, speed, and endurance are important to peace officer health, well-being and competence.
2.2.7 State the requirements of the Fourth Amendment on the law of arrest.
2.2.8 Explain how constitutional rights in the Fifth, Sixth, and Fourteenth Amendments affect police interrogations.
2.2.20 List the five constitutional amendments involving equality and rights.
2.2.21 Explain the impact of the Fourteenth Amendment as it relates to due process and equal protection under the law including: the difference between the Fifth and Fourteenth amendments in terms of due process the differences between substantive and procedural due process, and how Fourteenth Amendment rights constrain law enforcement authority in interrogations.
2.2.23 Identify the criminal and civil consequences an officer may face by violating a citizen’s constitutional right.
2.3.1 Define the following terms: search warrant, arrest warrant, subpoena, order for protection (OFP), ex-parte order for protection, qualified domestic violence-related order (QDVRO), Harassment Restraining Order (HRO), no-contact orders, night-capped warrant, no-knock warrant, and curtilage.
2.4.1 Explain what constitutes an arrest and the differences between a contact, a detention and an arrest.
2.4.2 State the requirements of the Fourth Amendment on the law of arrest.
2.4.3 Discuss protocols and terms associated with arrest including "reasonable suspicion" and "probable cause".
2.4.4 Describe the stop and frisk standard as found in "Terry vs. Ohio" and subsequent cases.
2.4.5 Explain the legal requirements of, the exceptions to, and the need for an arrest warrant and how one is obtained.

2.5.7 Explain special Minnesota peace officer duties associated with specific statutes including: informing crime victims of their rights and assisting victims of violent crime including domestic assault, restraining orders and orders for protection, data collection on battered women cases, interviewing child abuse victims, officer responsibilities regarding missing children, and mandated reporter for child abuse and vulnerable adults.

2.7.1 Explain the history of and philosophy behind an independent juvenile justice system.

2.7.3 Explain the key elements of the juvenile justice system including: the levels of juvenile offenses, criminal conviction versus adjudicated delinquent, and adult versus juvenile offense charges, the juvenile court system and dispositions available to youthful offenders, and the impact of juvenile case law on peace officers including: In Re Gault, In Re Winship, McKiever vs. Pennsylvania, Fare vs. Michael C., and New Jersey vs. T.L.O.

2.7.4 Discuss the law enforcement officer’s responsibility for working as a team member with juvenile protective-services professionals.
2.7.5 Identify and discuss actions that are required when processing juveniles including: when photos may be taken, when they are required and when they must be forwarded to the Minnesota Bureau of Criminal Apprehension, when juveniles can and cannot be used in a photo line- up, the services provided by the intake officer/counselor, the laws that apply to legally interviewing a juvenile, parental notification requirements,
the setting and procedures for holding conferences with juveniles and their parents, the criteria needed for obtaining secure and non-secure custody orders, factor as to consider when making emergency placement of children, and legal detentions of juveniles.

2.7.6 Discuss the problem of sexual exploitation of your including: the cycle of recruitment, the meaning of sex trafficking and its impact on sex trafficking victims, the makeup of users of sexually exploited youth, how sexually exploited youth are marketed resources for victims of sex trafficking and barriers to getting help, and the consequences of the sexual exploitation of youth and the significance of intervention of victims and society.

2.15.2 Identify physical and behavioral indicators that aid officers in determining the likelihood of physical, psychological, emotional or sexual abuse, or neglect of a child or vulnerable adult has occurred.

2.15.3 Research the personal and situational characteristics of parents who abuse their children in order to gain insight into the individual and family dynamics that produce abusive behavior.
2.15.9 Discuss resources law enforcement may partner with to assess and investigate incidents of maltreatment or to provide services to child or vulnerable adult victims.
2.15.10 Compare and contrast familial, acquaintance and stranger types of child abductions.
2.15.11 Explain the term “Drug Endangered Children”, the immediate and future risks related to children living in drug related environments and the impact of rescuing drug endangered children may have on breaking the cycle of drug abuse and crime prevention.
2.17.6 Discuss myths about sexual violence and the impact they may have on reporting by victims and on how peace officers respond to incidents involving sexual violence.
2.19.1 Explain the intent of the Americans with Disabilities Act.
2.19.2 Discuss the rights of people who have disabilities to the same service law enforcement provides to anyone else and stereotypes and biases some people may have toward people with disabilities.
2.19.3 Describe major areas of physical and mental disabilities requiring public section accommodations.
2.19.4 Identify special communications issues peace officers may encounter and discuss reasonable and appropriate actions officers may take to improve communication with individuals: coping with communication disorders including hearing impairment, whose mobility impairment restricts communication, and coping with autism spectrum disorders, dementia, Alzheimer's disease or intellectual disabilities.
2.19.5 Discuss methods for communicating with, assisting, or intervening in circumstances involving individuals who demonstrate indications of a variety of physical disabilities or mental impairments. (Minn. Stat. 626.8455)
2.19.6 Discuss emergency and non-emergency law enforcement situations involving people who have mobility disabilities, mental illnesses, intellectual disabilities, epilepsy or seizure disorders, speech disabilities, deafness or hard of hearing, and blindness or low vision and appropriate law enforcement response to those situations including making modifications or providing accommodations when appropriate.
2.20.1 Describe the major and severe forms of mental illness.
2.20.2 Describe the symptoms of major mental illnesses and how they manifest in adults and children, i.e., those associated with antisocial personality disorders, autism spectrum disorders, bipolar disorder and manic behavior disorders, depression, dis-associative disorders, post-traumatic stress disorder (PTSD), schizoaffective disorder, schizophrenia, and Tourette’s syndrome.
2.20.3 Identify signs and characteristics that may be indicative of suicidal individuals.
2.20.4 Discuss signs and symptoms of excited delirium and its relationship to mental illness, drugs and sudden death.
2.20.5 Discuss bias that comes from the stigma of mental illness and the rights of individuals dealing with mental illness to the same fair treatment and police protection as anyone else.
2.20.6 Discuss the Minnesota Crisis Intervention Team (MNCIT) model.
2.20.7 Discuss how substance abuse can mimic or contribute to mental illness.
2.20.8 Explain how medications may influence behaviors of individuals dealing with mental illness and why people don’t always take their medications.
2.20.9 Discuss problems military veterans may have reintegrating into society, how these problems may involve law enforcement and special considerations for dealing with veteran in crisis.
2.21.1 Discuss the role of peace officers in managing and de-escalating hostile situations including how the attitude and expectations of an officer influences responses in crisis situations.
2.21.2 Describe anger/conflict management strategies useful to officers in resolving problems that arise in law enforcement settings.
2.21.3 Identify strategies and de-escalation techniques officers may use to manage conflict, reduce anger, and improve communication and cooperation and de-escalate volatile or hostile situations.
2.21.4 Distinguish between characteristics of passive, aggressive, and assertive behavior.
2.21.5 Discuss body language behaviors that signal potential conflict escalation.
2.21.6 Explain the principles of crisis intervention/negotiations.
2.21.8 Explain various communications techniques that may be effective in a crisis situation and how techniques may vary depending on whether the situation involves mental illness, substance induced behavior, or other causes.
2.22.1 Explain the Data Practices Act as it pertains to the gathering and release of information by law enforcement.
2.22.2 Discuss balancing the public’s right to know with public safety needs and privacy issues with regard to data accessed by peace officers including: - what and when information can be shared with the media or the public and by whom, and - the repercussions of violating data practices.
2.22.3 Discuss the need for protection of data related to on-going investigations, crime victims, and juveniles.
2.22.4 Discuss ethical and responsible use of computers and databases by peace officers and the ramifications of misuse or unethical release of data.
2.23.1. Identify and discuss crimes commonly described as cybercrime or internet crime.
2.24.1 Describe intelligence-led policing and how it differs from response and investigation-led policing and from community policing.
2.24.2 Explain how data driven, intelligence-led policing can influence the duties of peace officers even at the entry

level.
2.25.1 Define terms terrorism (domestic and foreign), critical infrastructure, homeland security and militia movement.
2.25.2 Discuss the challenges in balancing national security concerns and civil rights including the impact of the USA Patriot Act.
2.25.3 Identify risks that may be associated with violent, anti-government extremist groups.
2.25.4 Discuss types of terrorism, weapons of terrorism, counterterrorism, basic interdiction strategies, terrorism target awareness and the role of law enforcement related to terrorism.
2.26.1 Explain what a criminal gang is as it is defined in Minnesota Statute 609.229 and the penalties for crimes committed for the benefit of a gang.
2.26.2 Discuss the appeal of gang membership, how gangs recruit members, and prevention and intervention methods.
2.26.3 Explain the terms organized crime and racketeering and discuss how organized crime affects Minnesota law enforcement.
2.26.4 Recognize the term RICO Act as meaning the Racketeer Influenced and Corrupt Organizations Act and be able to describe the overall intent of the Act.
2.26.5 Define the term vice crime and describe the attributes of various vice crimes including illegal gambling, prostitution, solicitation and pornography.
2.26.6 Discuss officer safety concerns and ethical decision-making matters related to vice crime investigations including risks associated with working undercover and ethics related to working with confidential informants.
3.2.1 Discuss interview techniques used to: build rapport, encourage full meaningful answers and discourage suggestibility, clarify and corroborate statements, enhance memory, detect deception, and obtain information from a reluctant witness.
3.2.2 Discuss interview considerations and techniques for interviewing children, vulnerable adults and traumatized victims.
3.3.1 Describe the relationship between good report writing and testimony.
3.4.1 Discuss how conflict management strategies depend on the situation and various strategies that may be useful in resolving situations involving individuals dealing with mental illness, substance use, or developmental disabilities such as autism.
3.4.2 Model reasonable and effective conflict management strategies and skills intended to de-escalate volatile situations including:
3.4.3 Model reasonable and effective dispute mediation strategies and techniques.
3.5.2 Identify various types of evidence, i.e., blood and biological, weapons, explosives and arson related evidence, hair and fiber, impressions, fingerprints, documents, clothing.
3.12.13 Identify and discuss officer survival/safety issues related to stopping and approaching vehicles.
3.12.14 Review scenarios of peace officer traffic stops and identify: what circumstances impact officer conduct including best practices and high risk mistakes, and reasonable use of discretion in deciding what enforcement action to take or not take.
3.12.15 Discuss how secondary offenses may be discovered during traffic enforcement and the importance of being observant for contraband and suspicious behavior during traffic stops.
3.14.11 Explain officer duties in death notification/body identification situations.
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.19 Explain when an arrest is warranted, when an arrest is mandatory and the time period in which an arrest can be made in domestic violence related situations.
3.14.29 Describe the terms Driving While Impaired (DWI) and Driving Under the Influence (DUI).
3.14.40 Explain the basic principles of hazardous materials as defined by Occupational Safety a and Health Administration (OSHA) and the Emergency Response Guide Book published by the U.S. Department of Transportation.
3.14.41 Identify some resources for responding to hazardous materials incidents, i.e., fire department, Minnesota Pollution Control Agency, Minnesota Department of Homeland Security and Emergency Management (HSEM), and the Bureau of Criminal Apprehension's (BCA's) Emergency Communications Center for State level assistance and notification.
3.14.42 Explain the purpose of hazardous materials placards and the significance of their shapes, color, symbols and texts.
3.14.43 Identify some common hazardous materials placards and where they are commonly located.
3.14.44 Given scenarios involving hazardous materials describe and/or demonstrate basic incident management skills including: recognizing and identifying common hazardous materials or hazardous materials placards, and taking situationally appropriate safety precautions and reasonable actions including maintaining a safe distance, clearing the area and making referrals and notifications.

3.14.55 Discuss what an officer should know, behaviors an officer should demonstrate, and communication tactics officers may find useful when interacting with a person struggling with a mental illness to maximize safety and more effectively approach a crisis situation including: why it is important to gather as much information as possible before arriving at a situation involving a mental health crisis, why it is important to respond in pairs and when to involve a mental health crisis response team if possible, why, unless the situation is immediately dangerous/critical, officers should not challenge or violate personal space and try to eliminate noise and distractions, the advantage of having one officer take lead in communicating, and the importance of having patience, building rapport and demonstrating compassion.
3.14.56 Given situations involving individuals demonstrating signs and/or characteristics of mental illness, behavioral disorder or suicidal intentions requiring intervention, demonstrate appropriate intervention techniques that are likely to be beneficial in managing the situations (Minn. Stat. 626.8455) including: modeling behavior that shows the importance of putting safety first, staying alert and the danger of complacency or taking anything for granted when dealing with an individual experiencing a mental health crisis, unless situation appears immediately dangerous/critical, avoiding challenging or violating personal space, trying to eliminate noise and distractions, having one officer take lead and open communication from a safe distance, using communication techniques designed to de-escalate volatile situations including: being patient, calm, honest and compassionate, using active listening skills while not encouraging or agreeing with delusions, using a calming voice, and avoiding challenging questions and allowing for venting.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty-two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

LAWE 2261 - In Progress Response (2)

This course will include instruction in the areas of Crimes In-Progress.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the proper and safest methods to approach and apprehend high risk suspects
Assess dangers responding to crimes in progress
Identify tactics appropriate to the en-route phase of a crime response
Demonstrate tactics appropriate to approach and search of a building
Practice procedures for confronting suspects and placing him/her under control or arrest
Assess proper procedures for handling barricaded suspects and hostage situations
Demonstrate proper tactics in dealing with suspects possessing weapons
Demonstrate knowledge of the 4th amendment search and seizure techniques
Discuss how peace officers deal with different types of animal complaints
Demonstrate responses to domestic disturbances and sexual assault reports
Demonstrate de-escalation tactics when dealing with persons in crisis and those who are mentally impaired
Demonstrate tactics in how to respond to civil matters
Identify definitions and familiarity with missing person related laws
Demonstrate how to work as a team in active shooter situations
Identify how critical incidents are handled

Explain procedures for responding to juveniles involved in crime scenes as victims or offenders

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.1.3 Use and interpret verbal and non-verbal cues to enhance interpersonal communications.
1.1.4 Describe and demonstrate active listening skills including paraphrasing, reflecting meaning, and summarizing understanding to obtain and clarify information.
1.1.5 Demonstrate reading comprehension skills necessary in law enforcement including: the ability to differentiate between facts, opinions and propaganda, understanding sequencing of events, and recognizing cause and effect.
1.1.6 Compose documents that demonstrate competent writing skills, including: writing from the first person viewpoint, differentiating between facts, inferences and opinions, correctly structuring sentences and paragraphs, and using correct grammar, spelling, punctuation and capitalization.
1.2.1 Discuss the inter-relationship between core beliefs, integrity and ethical reasoning.
1.2.2 Identify ethical issues in a variety of law enforcement related situations and apply ethical reasoning to decision making processes.
1.2.3 Evaluate and apply strategies for responding to unethical or illegal actions that may arise within law enforcement and public safety.
1.2.4 Model behaviors that demonstrate commitment to ethical and professional behavior.
1.2.5 Discuss discretion and how it differs from selective enforcement.
1.2.6 Identify some of the causes and ramifications of public distrust of law enforcement and strategies to enhance the public trust.
1.2.7 Discuss ethical and responsible use of computers and databases by law enforcement.
1.3.1 Define and describe models of the conscious processes of critical thinking, logical reasoning and problem solving.
1.3.2 Use structured problem-solving methods to develop creative and innovative solutions to a variety of problems.
1.3.3 Applying reason and evidence to formulate logical inferences and draw logical conclusions.
1.3.4 Analyze and evaluate ideas, proposals, and solutions to problems using basic forms of logic and techniques designed to encourage sound reasoning.
1.3.5 Use critical thinking, logical reasoning and problem solving strategies to formulate ideas, make proposals and suggest solutions a variety of law enforcement related problems or concerns (Minn. Stat. 626.8455).
1.3.6 Apply critical thinking strategies during team discussions.
1.4.1 Describe decision-making processes and models.
1.4.2 Define the term discretion and discuss when and why peace officers use their best judgment in the administration of justice and when discretion is not allowed.
1.4.3 Discuss factors that influence police officer use of discretion.
1.4.5 Based on scenarios of peace officer situations, practice making decisions in real time.
1.5.1 Discuss how and why the police function is much broader than law enforcement and why reliance on criminal law enforcement to solve problems is not always the best course of action.
1.5.2 Explain philosophies and concepts of community policing.
1.5.3 Discuss how community partnerships with law enforcement foster unity and cooperation and how community alienation may lead to higher risk to officers.
1.5.4 Identify community policing strategies that build rapport, reduce fear and foster community trust in law enforcement
1.5.5 Identify techniques for: organizing community members so that they are involved and trained in community policing activities, relating to diverse communities, and relating to individuals with physical or mental limitations (Minn. Stat. 626.8455, Subd. 1, 2-4).
1.5.6 Identify methods and strategies used by law enforcement to promote crime reduction and loss prevention in a community.
1.5.7 Explain how collaboration with each of the following groups may reduce crime: local citizens, community businesses, and service agencies, i.e. crisis intervention teams, social services, school personnel, and community youth groups.
1.5.8 Explain how law enforcement management of status offenses and local ordinance violations can positively impact a community.
1.5.9 Describe and give examples of proactive policing versus responsive policing.
1.5.10 Describe problem oriented or problem targeting policing strategies.
1.5.11 Explain how various patrol strategies impact crime, community security and community perceptions of law enforcement.
1.6.1 Explain how conscious and implicit bias impact human behavior.
1.6.2 Discuss how bias, prejudice, stereotyping, intolerance, insensitivity, partiality, and marginalizing can affect

just application of the law and influence officer and community safety.
1.6.3 Explain the concept of procedural justice as it relates to law enforcement including how fair processes, impartial decision making, providing respectful opportunity for a voice, and transparency in actions, bolsters positive community relations and enhances officer and community safety.
1.7.1 Describe characteristics of professional behavior and the Minnesota Standards of Conduct for licensing Minnesota peace officers.
1.7.5 Employ teamwork skills to foster positive working relationships, accomplish team goals and effectively utilize team member talents.
1.7.7 Describe traits of and skills for effective leadership including compassion, courage, service, listening, coaching, mission focus, and team development.
1.7.8 Demonstrate ethical leadership in the accomplishment of goals and objectives.
1.8.1 Discuss the importance of a survival mindset for officers including: physical and psychological preparation for force encounters, risks associated with complacency, and wearing body armor and other safety equipment.
1.8.2 Identify the physiological, psychological and emotional effects of stress.
1.8.3 Explain some of the stressors encountered by peace officers and their effect on officers and their families including: duty related stressors, i.e. frequent encounters with illegal or unethical behaviors, emotionally charged scenes, people in distress, trauma and tragedy, stressors related to fatigue and shiftwork, and stress and long term effects associated with hypervigilance.
1.8.4 Discuss physical and psychological effects of stress before, during and after a high risk or traumatic incident including: the effects of high risk stress on the body including the brain, vision, hearing, muscles and respiratory system, and the nervous and cardiovascular systems, and how knowledge of the effects of stress in high risk or life threatening situations can help officers perform under stress.
1.8.5 Discuss critical incident debriefing and identify support services and resources for peace officers.
1.8.6 Discuss Post Traumatic Stress Disorder (PTSD) and acute stress disorders and their symptoms.
1.8.7 Describe officer survival/safety issues relative to a variety of peace officer duties, including traffic enforcement, arrest, vehicle stops, felony stops, pursuits, and plain clothes and undercover work.
1.8.8 Explain the importance of balancing peace officer roles and responsibilities and other life roles, interests and responsibilities.
2.3.1 Define the following terms: search warrant, arrest warrant, subpoena, order for protection (OFP), ex-parte order for protection, qualified domestic violence-related order (QDVRO), Harassment Restraining Order (HRO), no-contact orders, night-capped warrant, no-knock warrant, and curtilage.
2.3.4 Explain the scope and limitation of a lawful warrant-less seizure during a consent search of persons.
2.3.5 Explain the scope and limitation of a lawful warrantless search of a premise and warrantless search of a vehicle.
2.3.6 Explain the scope and limitation of a lawful warrant-less search during a search based on exigent circumstances.
2.3.7 Explain the scope of a lawful warrant-less search during a plain view search.
2.5.1 Describe the basic organization, purpose, and definitions and principles of the Minnesota Criminal Code.
2.5.2 Explain the classifications of crimes including felony, misdemeanor, gross misdemeanor and the meaning of the term petty misdemeanor.
2.5.3 Explain what is meant by elements of a crime and describe the connection between criminal conduct and criminal intent (mens rea).
2.5.4 Explain why it is important for officers to be able to identify and document elements of crimes when responding to and investigating crime scenes.
2.5.5 Given a variety of scenarios, identify indications a particular crime has been committed and identify the elements of that crime.
2.5.6 Identify and explain Minnesota Statutes relating to weapons, chemical agents, electronic control weapons and interference with public property.
2.5.7 Explain special Minnesota peace officer duties associated with specific statutes including: informing crime victims of their rights and assisting victims of violent crime including domestic assault, restraining orders and orders for protection, data collection on battered women cases, interviewing child abuse victims, officer responsibilities regarding missing children, and mandated reporter for child abuse and vulnerable adults.
2.6.1 Explain the Supreme Court decision Miranda vs. Arizona and the four components of the Miranda warning.
2.8.1 Explain Minnesota statutes and relevant case law related to the application of force by peace officers.
2.8.2 Explain the following terms: objectively reasonable, totality of circumstances, situational factors, pre-assaultive indicators, and, escalation and de-escalation as related to peace officer use of force.
2.8.3 Discuss the term reasonable as it related to use of force.
2.8.4 State how department policies regarding use of force including deadly force may and may not vary.
2.8.5 Given scenarios, recognize when force is or is not authorized and give and defend reasonable choices for the application of various types of force depending on the circumstances of the scenario.
2.8.6 Give Supreme Court case examples authorizing the use of deadly force.
2.8.7 Analyze a variety of situations where force may or may not be authorized and demonstrate an

understanding of the concept of reasonable use of force.
2.8.8 Explain the Minnesota Statute that requires officers be trained in the use of those weapons and equipment the officer is issued or authorized to carry (Minn. Stat. 626.8452).
2.8.9 Explain when force may be used to make an arrest.
2.8.10 Discuss liabilities associated with the application of force by peace officers.
2.12.1 Explain the concept of racially based profiling (Minn. Stat. 262.8471) and other profiling that is based on false assumptions about groups of people and discuss: the impact of the Whren v. United States decision the importance of impartial policing, the difference between the terms pretextual stop and racial profiling and the problems associated with racial profiling by law enforcement, how racial profiling impacts law enforcement credibility and community trust, how to handle the perception of unfair or biased treatment of members of the public by law enforcement, and the importance of an officer's ability to articulate valid reasons for vehicle stops.
2.19.1 Explain the intent of the Americans with Disabilities Act.
2.19.2 Discuss the rights of people who have disabilities to the same service law enforcement provides to anyone else and stereotypes and biases some people may have toward people with disabilities.
2.19.3 Describe major areas of physical and mental disabilities requiring public section accommodations.
2.19.4 Identify special communications issues peace officers may encounter and discuss reasonable and appropriate actions officers may take to improve communication with individuals: coping with communication disorders including hearing impairment, whose mobility impairment restricts communication, and coping with autism spectrum disorders, dementia, Alzheimer's disease or intellectual disabilities.
2.19.5 Discuss methods for communicating with, assisting, or intervening in circumstances involving individuals who demonstrate indications of a variety of physical disabilities or mental impairments. (Minn. Stat. 626.8455)
2.19.6 Discuss emergency and non-emergency law enforcement situations involving people who have mobility disabilities, mental illnesses, intellectual disabilities, epilepsy or seizure disorders, speech disabilities, deafness or hard of hearing, and blindness or low vision and appropriate law enforcement response to those situations including making modifications or providing accommodations when appropriate.
2.19.7 Given scenarios that involve people with a variety of physical or mental conditions that limits their movement, senses, or activities, in roles of crime suspects, victims or witnesses, discuss what appropriate and reasonable actions peace officers may need to take depending on the circumstances and abilities of the individuals involved.
2.19.8 Discuss how peace officers may provide respectful, appropriate and reasonable assistance when it is needed to people with physical or mental conditions that limit their movement, senses or activities.
2.20.1 Describe the major and severe forms of mental illness.
2.20.2 Describe the symptoms of major mental illnesses and how they manifest in adults and children, i.e., those associated with antisocial personality disorders, autism spectrum disorders, bipolar disorder and manic behavior disorders, depression, dis-associative disorders, post-traumatic stress disorder (PTSD), schizoaffective disorder, schizophrenia, and Tourette's syndrome.
2.20.3 Identify signs and characteristics that may be indicative of suicidal individuals.
2.20.4 Discuss signs and symptoms of excited delirium and its relationship to mental illness, drugs and sudden death.
2.20.5 Discuss bias that comes from the stigma of mental illness and the rights of individuals dealing with mental illness to the same fair treatment and police protection as anyone else.
2.20.6 Discuss the Minnesota Crisis Intervention Team (MNCIT) model.
2.20.7 Discuss how substance abuse can mimic or contribute to mental illness.
2.20.8 Explain how medications may influence behaviors of individuals dealing with mental illness and why people don't always take their medications.
2.20.9 Discuss problems military veterans may have reintegrating into society, how these problems may involve law enforcement and special considerations for dealing with veteran in crisis.
2.21.1 Discuss the role of peace officers in managing and de-escalating hostile situations including how the attitude and expectations of an officer influences responses in crisis situations.
2.21.2 Describe anger/conflict management strategies useful to officers in resolving problems that arise in law enforcement settings.
2.21.3 Identify strategies and de-escalation techniques officers may use to manage conflict, reduce anger, and improve communication and cooperation and de-escalate volatile or hostile situations.
2.21.4 Distinguish between characteristics of passive, aggressive, and assertive behavior.
2.21.5 Discuss body language behaviors that signal potential conflict escalation.
2.21.6 Explain the principles of crisis intervention/negotiations.
2.21.7 Demonstrate basic knowledge of abnormal psychology.
2.21.8 Explain various communications techniques that may be effective in a crisis situation and how techniques may vary depending on whether the situation involves mental illness, substance induced behavior, or other causes.
2.21.9 Explain when to yield crisis management to other authorities.
2.21.10 Explain strategies that may be employed when hostages are involved in a crisis situation.
2.22.1 Explain the Data Practices Act as it pertains to the gathering and release of information by law enforcement.

2.22.2 Discuss balancing the public's right to know with public safety needs and privacy issues with regard to data accessed by peace officers including: - what and when information can be shared with the media or the public and by whom, and - the repercussions of violating data practices.
2.22.4 Discuss ethical and responsible use of computers and databases by peace officers and the ramifications of misuse or unethical release of data.
3.1.1 Demonstrate effective and legible field-note taking including collecting crime scene intelligence from witnesses, victims and suspects.
3.1.2 Given crime scene scenarios, solicit information and gather and organize facts needed for a police report.
3.1.3 Given a variety of law enforcement scenarios prepare reports that: are written from the first person viewpoint, differentiate between facts, inferences and opinions, demonstrate correct use of grammar, spelling, punctuation, capitalization, sentence and paragraph structure, are clear, complete, concise and accurate, and include all relevant details.
3.2.1 Discuss interview techniques used to: build rapport, encourage full meaningful answers and discourage suggestibility, clarify and corroborate statements, enhance memory, detect deception, and obtain information from a reluctant witness.
3.2.2 Discuss interview considerations and techniques for interviewing children, vulnerable adults and traumatized victims.
3.2.3 Discuss how and why interviewing techniques must vary depending on the interviewee and the circumstances, i.e., when interviewing children, traumatized victims.
3.2.4 Conduct interviews using procedures that: are appropriate to the situation, ensure the protection of individual rights, effectively gather information, encourage cooperation, and enhance memory.
3.2.5 Conduct interrogations of suspects using appropriate techniques to gather information, detect deception, and gain an admission or confession depending on the circumstances.
3.2.6 Explain and participate in evidence-based procedures for identifying suspects, i.e., lineup, photo lineup, and field identification, including blind/blinded administration of the lineup, instructions to the eye witness that the perpetrator may or may not be present, use of non-suspect "fillers" that match the eyewitness's description of the perpetrator and do not make the suspect noticeably stand out and asking a witness to state his or her level of certainty, in his or her own words, as soon as an identification is made.
3.2.7. Describe how eyewitness memory works and how it can be impacted by estimator variables (e.g., lighting at the crime scene, distance from the crime, presence of a weapon, cross-racial factors) and system variable (e.g., lineup procedures).
3.3.1 Describe the relationship between good report writing and testimony.
3.3.2 Demonstrate proper courtroom dress and decorum.
3.3.3 Practice preparing for and presenting true and factual testimony in legal proceedings in accordance with courtroom procedure.
3.3.4 Practice managing cross examination and attempts to discredit.
3.4.1 Discuss how conflict management strategies depend on the situation and various strategies that may be useful in resolving situations involving individuals dealing with mental illness, substance use, or developmental disabilities such as autism.
3.4.2 Model reasonable and effective conflict management strategies and skills intended to de-escalate volatile situations including:
3.4.3 Model reasonable and effective dispute mediation strategies and techniques.
3.7.1 Describe and demonstrate how to make contacts, detentions and arrests including: reading Miranda rights and verifying understanding, selecting, applying and removing types of restraints, i.e. handcuffs, flex-cuffs, leg restraints, conducting a search incident to arrest, and describing procedures for conducting a strip search.
3.7.2 Demonstrate strategies and techniques for safely taking a person into custody in a variety of locations when: the subject is non-compliant or combative, there are multiple subjects to be arrested, and the subject(s) are larger and stronger than the officer.
3.7.3 Describe and demonstrate protocols and procedures designed to safely transport a person in custody.
3.7.4 Define the term positional asphyxia and describe its relationship to custody.
3.7.5 Define the terms booking, arraignment, bail and personal recognizance.
3.8.1 Identify officer survival/safety issues related to searches of a person, a vehicle, and a building.
3.8.2 Conduct searches and seizures in accordance with State statutes and criminal code and demonstrate conscious application of the concepts of reasonable suspicion and probable cause including: a legal, consensual search of a person, a custodial search, a searching and inventorying of a vehicle including explaining when a vehicle may be impounded, and a building search.
3.14.1 Discuss the peace officer's role in active shooter situations.
3.14.2 Explain and/or demonstrate techniques and protocols for effectively and safely responding to crimes in progress.
3.14.3 Discuss peace officer response to various incidents involving animals, i.e., pet and pet owner issues, wildlife concerns, abused or neglected animals, loose or sick farm animals, euthanasia by officers and animal resources.
3.14.4 Explain law enforcement procedures for response to child and vulnerable adult abuse and neglect situations

including: identifying behaviors, signs or symptoms indicative of physical, sexual, and psychological abuse, maltreatment and neglect, completing mandatory reporting requirements, contacting appropriate social service agencies, explaining Munchausen by proxy and shaken baby syndromes, and explaining what sudden infant death syndrome is and how it is not a crime.
3.14.5 Identify mandatory reporters of suspected abuse and discuss where to report, what must be reported, the confidentiality of reports, and the legal ramifications for not reporting.
3.14.6 Discuss the collaborative child abuse team approach in investigating child abuse.
3.14.7 Discuss special interview consideration when dealing with children including the terms suggestibility and child centered interviewing.
3.14.8 Explain child welfare holds that allow officers to remove children from at-risk situations. 3.14.11 Explain officer duties in death notification/body identification situations.
3.14.13 Discuss the role of peace officers in a variety of disaster and large scale emergencies including: the importance of initial on-scene assessment for immediate action and resources needed and for on-going threats and safety concerns, i.e., gas leaks, downed power lines, looters, fires, etc., the importance of interagency communications and cooperative interaction between law enforcement agencies, utility companies, and other resources, and large scale traffic and crowd management.
3.14.14 Given a scenario, explain or demonstrate an initial scene assessment.
3.14.15 Summarize the elements of the Incident Command System (ICS) including: the overall objectives and primary functions of ICS, the typical agencies that are involved in the ICS, the roles of emergency/first responder in preparedness and response systems during and after disaster situations, the typical hierarchical chain of command structure, and the role of the FBI if the disaster is related to foreign or domestic terrorism.
3.14.16 Summarize characteristics of systems involved in preparing for and managing large scale disasters including: the elements of the national preparedness system and the national response plan, and the purposes, key concepts and principles of the National Incident Management System (NIMS).
3.14.17 Explain law enforcement functions aimed at protecting critical infrastructure and potential targets from terrorism and/or natural disasters.
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.19 Explain when an arrest is warranted, when an arrest is mandatory and the time period in which an arrest can be made in domestic violence related situations.
3.14.20 Manage a domestic violence scenario including: - performing an initial assessment of the scene for relevant cues, - calling for back up, medical assistance, child services, or other service as needed - Taking reasonable actions to stop any on-going abuse including asking to see the alleged victim or subject of the call alone, requesting entry to residence if necessary to talk to victim and getting a warrant when needed, - employing communication techniques as appropriate to de-escalate volatile situations including separating involved parties, explaining rights to victims and providing victim services information, providing officer contact information to victim, and making arrest decisions based on probable cause, determination of predominant aggressor, violation of court orders, and other factors.
3.14.21 Discuss service of protective orders and discuss related risks.
3.14.22 Describe dangers associated with handling drugs and with drug production laboratories and related precautionary measures.
3.14.23 Describe behavioral symptoms that may be associated with drug use and abuse including the characteristics and physical effects of psychoactive drugs like methamphetamine.
3.14.24 Describe methods of transportation and concealment of controlled substances/illicit drugs.
3.14.1 Discuss the peace officer’s role in active shooter situations.
3.14.2 Explain and/or demonstrate techniques and protocols for effectively and safely responding to crimes in progress.
3.14.13 Discuss the role of peace officers in a variety of disaster and large scale emergencies including: the importance of initial on-scene assessment for immediate action and resources needed and for on-going threats and safety concerns, i.e., gas leaks, downed power lines, looters, fires, etc., the importance of interagency communications and cooperative interaction between law enforcement agencies, utility companies, and other resources, and large scale traffic and crowd management.
3.14.14 Given a scenario, explain or demonstrate an initial scene assessment.
3.14.15 Summarize the elements of the Incident Command System (ICS) including: the overall objectives and primary functions of ICS, the typical agencies that are involved in the ICS, the roles of emergency/first responder in preparedness and response systems during and after disaster situations, the typical hierarchical chain of command structure, and the role of the FBI if the disaster is related to foreign or domestic terrorism.
3.14.16 Summarize characteristics of systems involved in preparing for alarge scale disasters including: the elements of the national preparedness system and the national response plan, and the purposes, key concepts and principles of the National Incident Management System (NIMS).
3.14.17 Explain law enforcement functions aimed at protecting critical infrastructure and potential targets from

terrorism and/or natural disasters.
3.14.18 Discuss risks associated with domestic violence situations and safe approach techniques including: why it is best not to respond alone, the importance of gathering as much information as possible prior to response, the importance of initial scene assessment, and why it is important not to reveal the name of the person who requested police response.
3.14.19 Explain when an arrest is warranted, when an arrest is mandatory and the time period in which an arrest can be made in domestic violence related situations.
3.14.20 Manage a domestic violence scenario including: - performing an initial assessment of the scene for relevant cues, - calling for back up, medical assistance, child services, or other service as needed - Taking reasonable actions to stop any on-going abuse including asking to see the alleged victim or subject of the call alone, requesting entry to residence if necessary to talk to victim and getting a warrant when needed, - employing communication techniques as appropriate to de-escalate volatile situations including separating involved parties, explaining rights to victims and providing victim services information, providing officer contact information to victim, and making arrest decisions based on probable cause, determination of predominant aggressor, violation of court orders, and other factors.
3.14.21 Discuss service of protective orders and discuss related risks.
3.14.22 Describe dangers associated with handling drugs and with drug production laboratories and related precautionary measures.
3.14.23 Describe behavioral symptoms that may be associated with drug use and abuse including the characteristics and physical effects of psychoactive drugs like methamphetamine.
3.14.24 Describe methods of transportation and concealment of controlled substances/illicit drugs.
3.14.48 Explain or demonstrate law enforcement procedures for responding to s

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty-two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 2

LAWE 2275 - Traffic (1)

This course will include instruction in the areas of Low Risk Traffic Stops, High Risk/Felony Stops, DWI enforcement, Crash Scene Management.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to write factual, concise and complete reports
Employ the pre-stop preparations in traffic stops
Execute positioning of a squad car during traffic stops
Use verbal commands for high risk felony stops
Demonstrate the methods to approach and apprehend high risk suspects
Demonstrate guidelines for violator contacts
Demonstrate ability to perform traffic stop techniques
Express awareness of driver's license and vehicle registration issues
Demonstrate proper completion of a MN state traffic citation
Demonstrate the ability to deal with reactions of violators

Employ tactics in dealing with suspects possessing weapons
Demonstrate techniques in dealing with those individuals who have emotional/physical disabilities or conditions

Minnesota POST Board Learning Objectives:
1.1.1 Describe how perception, sympathy, empathy, compassion and respect affect peace officer communication.
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.1.3 Use and interpret verbal and non-verbal cues to enhance interpersonal communications.
1.1.4 Describe and demonstrate active listening skills including paraphrasing, reflecting meaning, and summarizing understanding to obtain and clarify information.
1.1.5 Demonstrate reading comprehension skills necessary in law enforcement including: the ability to differentiate between facts, opinions and propaganda, understanding sequencing of events, and recognizing cause and effect.
1.1.6 Compose documents that demonstrate competent writing skills, including: writing from the first person viewpoint, differentiating between facts, inferences and opinions, correctly structuring sentences and paragraphs, and using correct grammar, spelling, punctuation and capitalization.
1.2.5 Discuss discretion and how it differs from selective enforcement.
2.10.1 Describe the basic organization, purpose and principles of the Minnesota Criminal Code and its implications for law enforcement including (list is not comprehensive): understanding key traffic related terms (Minn. Stat. 169.011) as well as the terms reckless or careless driving, describing violations of driving rules, parking and stopping violations, and vehicle equipment violations, how and when traffic laws apply to authorized emergency vehicles, and laws regarding driving while impaired.
2.10.2 Discuss non-enforcement deterrents to traffic violations, i.e., police presence/visibility, speed bumps.
2.10.3 Explain vehicle registration and insurance requirements in Minnesota.
2.10.4 Distinguish between different classes and type of licenses, endorsements and permits and explain the circumstances under which an individual is exempt from licensing requirements.
3.1.1+B321:C346 Demonstrate effective and legible field-note taking including collecting crime scene intelligence from witnesses, victims and suspects.
3.1.2 Given crime scene scenarios, solicit information and gather and organize facts needed for a police report.
3.1.3 Given a variety of law enforcement scenarios prepare reports that: are written from the first person viewpoint, differentiate between facts, inferences and opinions, demonstrate correct use of grammar, spelling, punctuation, capitalization, sentence and paragraph structure, are clear, complete, concise and accurate, and include all relevant details.
3.1.4 Prepare documentation for arrest warrants and for search warrants based on probable cause.
3.2.1 Discuss interview techniques used to: build rapport, encourage full meaningful answers and discourage suggestibility, clarify and corroborate statements, enhance memory, detect deception, and obtain information from a reluctant witness.
3.2.2 Discuss interview considerations and techniques for interviewing children, vulnerable adults and traumatized victims.
3.2.3 Discuss how and why interviewing techniques must vary depending on the interviewee and the circumstances, i.e., when interviewing children, traumatized victims.
3.2.4 Conduct interviews using procedures that: are appropriate to the situation, ensure the protection of individual rights, effectively gather information, encourage cooperation, and enhance memory.
3.2.5 Conduct interrogations of suspects using appropriate techniques to gather information, detect deception, and gain an admission or confession depending on the circumstances.
3.2.6 Explain and participate in evidence-based procedures for identifying suspects, i.e., lineup, photo lineup, and field identification, including blind/blinded administration of the lineup, instructions to the eye witness that the perpetrator may or may not be present, use of non-suspect "fillers" that match the eyewitness's description of the perpetrator and do not make the suspect noticeably stand out and asking a witness to state his or her level of certainty, in his or her own words, as soon as an identification is made.
3.4.1 Discuss how conflict management strategies depend on the situation and various strategies that may be useful in resolving situations involving individuals dealing with mental illness, substance use, or developmental disabilities such as autism.
3.4.2 Model reasonable and effective conflict management strategies and skills intended to de-escalate volatile situations including: assessing and interpreting body language that is indicative of escalation or de-escalation of volatile situations, and using of situationally appropriate communication strategies.
3.5.5 Demonstrate proper evidence documenting techniques, i.e. note taking, field sketching and/or photographing/videoing.
3.7.1 Describe and demonstrate how to make contacts, detentions and arrests including: reading Miranda rights and verifying understanding, selecting, applying and removing types of restraints, i.e. handcuffs, flex-cuffs, leg restraints, conducting a search incident to arrest, and describing procedures for conducting a strip search.
3.7.2 Demonstrate strategies and techniques for safely taking a person into custody in a variety of locations when: the subject is non-compliant or combative, there are multiple subjects to be arrested, and the subject(s) are larger

and stronger than the officer.
3.7.3 Describe and demonstrate protocols and procedures designed to safely transport a person in custody.
3.7.4 Define the term positional asphyxia and describe its relationship to custody.
3.10.4 Demonstrate awareness of Minn. Stat. 169.752 & 753 Medical Equipment which states: "Every patrol motor vehicle shall be equipped with and carry first aid equipment" and "Law enforcement officers operating patrol motor vehicles shall be trained in the use and application of first aid equipment."
3.12.1 Explain the purpose of proactive traffic enforcement and vehicle equipment checks/stops.
3.12.2 Identify the following elements of driving conduct as they relate to Minnesota Motor Vehicle and Traffic Laws: speed, local authority, right of way, traffic crashes, railroad crossings, school buses, stopping, standing and parking, reckless and careless driving, open bottle, criminal vehicular operation and fleeing a peace officer, signs and signals, and turning.
3.12.3 Identify the equipment necessary to operate a vehicle in proper working condition including: lighting, brakes, seat belts and child restraints, mufflers, windshields, bumpers; and, identify the exemption from equipment restrictions.
3.12.4 Discuss how traffic law applies to bicycles and pedestrians.
3.12.5 Given a variety of scenarios practice enforcing traffic law including issuing traffic citations and documenting a vehicle stop.
3.12.6 Identify a variety of driver's licenses including international driver's license and out of state licenses, various types of Minnesota drivers licenses, and various license statuses including current, expired, canceled, CONAX, suspended, and revoked.
3.12.7 Explain how diplomatic immunity may impact issuance of a traffic citation.
3.12.8 Discuss balancing respectful, rapport building communication with enforcing traffic law and maintaining safety.
3.12.9 Explain how traffic citations are processed for juvenile offenders.
3.12.10 Discuss the use and application of speed estimates including: the radar standards implications of the 1971 case of Minnesota vs. Gerdes, and Minnesota Statute standards for running RADAR (Minn. Stat. 169.14, Subp. 9 and 10).
3.12.11 Summarize the features and applications of various models of RADAR/ speed-measuring equipment.
3.12.12 Demonstrate how to use a RADAR/speed measuring equipment.
3.12.13 Identify and discuss officer survival/safety issues related to stopping and approaching vehicles.
3.12.14 Review scenarios of peace officer traffic stops and identify: what circumstances impact officer conduct including best practices and high risk mistakes, and reasonable use of discretion in deciding what enforcement action to take or not take.
3.12.15 Discuss how secondary offenses may be discovered during traffic enforcement and the importance of being observant for contraband and suspicious behavior during traffic stops.
3.12.16 Conduct a motor vehicle traffic stop in accordance with procedures and laws including: observing traffic and identifying traffic violations, notifying dispatch of location of the stop, vehicle information and the number of occupants, Initiating the traffic stop by activating lights and/or siren, selecting a safe location for a traffic stop and safe vehicle positioning, taking appropriate precautions exiting a squad and approaching a vehicle, observing vehicle occupant(s) behavior and vehicle contents for risk factors, collecting driver license and proof of insurance, recording vehicle information, communicating with the driver about the cause of the stop, determining if a citation or warning should be issued, and whether a search, arrest, or drug or alcohol test should be made depending on circumstances, preparing and presenting citations or warnings and explaining how to pay the fine or arrange a court date, and the consequences of failing to act on the ticket, and taking steps to safely terminate the stop and return to squad.
3.12.17 Conduct a mock high risk/felony stop including: relaying information to dispatch and requesting back-up, selecting safe and tactically appropriate location for the stop and squad position, communicating with other officers on scene to coordinate the stop, conduct the stop using strategies, tactics and communication methods appropriate to the circumstances and observed behaviors, i.e., confrontational behavior, weapons on scene, objects thrown from the car, occupants approach officer or flee the scene.
3.14.2 Explain and/or demonstrate techniques and protocols for effectively and safely responding to crimes in progress.
3.14.25 Identify observable cues indicative of a driver who is impaired by drugs and apply proper procedures to apprehend a drug impaired driver including: applying Minnesota Statutes relevant to controlled substances and other substances that impair driving, explaining when calling for a Drug Recognition Expert is reasonable.
3.14.26 Manage a situation involving illicit drugs including: recognizing drug paraphernalia and tools for weighing and measuring controlled substances, and demonstrating procedures for handling dangerous, sometimes lethal and unpredictable drugs such as methamphetamine.
3.14.27 Describe investigative procedures used in drug interdiction including: the importance of intelligence gathering, methods used for field testing and who should do it, and the use of surveillance and counter surveillance.
3.14.28 Explain why law enforcement enforces alcohol and beverage control laws and laws related to driving under the influence including; the effects of alcohol on the body and driving, and the relationship between DWI violations and crashes.

3.14.29 Describe the terms Driving While Impaired (DWI) and Driving Under the Influence (DUI).
3.14.30 Explain what the National Highway Traffic Safety Administration (NHTSA) does and its suggested drunk driving prevention techniques.
3.14.31 Describe methods to detect individuals who are under the influence of alcohol including: the role of psychological and physical testing and the preliminary breath test as impaired driver screening tools, and the concepts of divided attention and nystagmus, and the advantages and limitations of preliminary breath testing.
3.14.32 Demonstrate how to process an impaired driver, including: identifying driving behaviors and violations indicative of impaired driving administering impaired driver screening tests including the standardized field sobriety test (SFST) battery and horizontal gaze nystagmus.demonstrating knowledge of the precautions for use of the PBT as addressed in the Implied Consent Form, interpreting and documenting test results, and apprehending violators of DWI/DUI laws.
3.14.33 Explain the proper use of the State of Minnesota BCA Blood and Urine Collection Kit.
3.14.34 Describe evidence and reports required to give testimony in court related to DWI/DUI cases.
3.14.35 Explain the purpose and process for conducting saturation patrols to target, detect and apprehend impaired drivers.
3.14.55 Discuss what an officer should know, behaviors an officer should demonstrate, and communication tactics officers may find useful when interacting with a person struggling with a mental illness to maximize safety and more effectively approach a crisis situation including: why it is important to gather as much information as possible before arriving at a situation involving a mental health crisis, why it is important to respond in pairs and when to involve a mental health crisis response team if possible, why, unless the situation is immediately dangerous/critical, officers should not challenge or violate personal space and try to eliminate noise and distractions, the advantage of having one officer take lead in communicating, and the importance of having patience, building rapport and demonstrating compassion.
3.14.60 Demonstrate appropriate response tactics when called to a situation involving a motor vehicle crash including: talking to and being aware of other responders on the road, demonstrating approach tactics appropriate to situation and weather related conditions and to block and protect the crash scene, demonstrating appropriate actions to safely and effectively manage the crash scene, preserving and processing crash-scene evidence, explaining the additional steps to be taken when responding to a "hit and run" accident, distinguishing between a required reportable accident and an accident not required to be reported, safely re-opening traffic lanes following crash response, interviewing drivers and witnesses and obtaining the required information to file the accident report form, assisting people who need medical help and/or transportation, explaining traffic crash reporting requirements and completing the State of Minnesota-Dept. of Public Safety Accident Report Form, explaining the use of the Fatality Report (PS-07093), organizing collected evidence for the case file, employing traffic direction techniques, and arranging for crash to be removed from the roadway.
4.1.1 Describe and demonstrate command presence and tactically safe approach techniques in a variety of law enforcement situations.
4.1.2 Demonstrate "soft" empty hand control tactics that may be used on passive resistive subjects and resistive subjects and explain why the use of a particular control technique is reasonable given the circumstances known including: distraction techniques, joint manipulations, pressure points, escapes from holds and grasps and come-along from escort techniques.
4.1.3 Demonstrate "hard" empty hand control techniques that may be used on aggressive, resistive subjects and explain why the use of a particular technique is reasonable give the facts and circumstances known including: blocks with hands, arms and legs, countermeasure striking techniques using hands, arms, elbows, legs, knees and/or feet, counter striking techniques use in ground fighting situations, appropriate verbal commands coinciding with use of force decisions and proper application of neck restraint.
4.1.4 Explain when to handcuff and risks related to improper handcuffing and failing to handcuff.
4.3.1 Evaluate situations that may require the use of force, determine when force is authorized and necessary, and discuss options for the reasonable use of reasonable force.
4.3.2 Assess, articulate and report reasons for use of force including pre-assaultive indicators and situational factors.
4.3.3 Participate in and evaluate others real time practical situations that require the use of force.
4.3.4 In real-time scenario exercises, make decisions about reasonable use of force.
4.4.1 Possess a valid driver’s license.
4.4.6 Discuss the physical, psychological and emotional affects officers often encounter immediately following a pursuit.
4.4.7 Discuss how pursuit policy issues affect the conduct of pursuits by peace officers and pursuit related mandatory reporting.
4.5.1 Demonstrate the ability to properly operate law enforcement radios and communications equipment in live training scenarios.
4.5.2 Discuss and/or demonstrate operation of equipment commonly provided in patrol vehicles, i.e., camera, dash cam, mobile computer, emergency lights, sirens, etc.
4.5.4 Identify federal, state and local criminal justice databases and other data sources and websites frequently

used by peace officers.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

LAWE 2280 - Defensive Tactics (2)

This course will include instruction in the areas of Defensive Tactics and Active Shooter Response.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply escalation and de-escalation tactics and procedures in the use of force continuum
Describe use of elements of deadly force by peace officers
Demonstrate the ability to write factual, concise reports
Show proper three point search position
Practice procedures for confronting suspects and placing him/her under control or arrest
Demonstrate proper verbal articulations in a variety of control based scenarios
Demonstrate the ability to deal with various reactions of violators
Employ proper tactics in dealing with suspects possessing weapons
Demonstrate weapon retention techniques
Demonstrate weapon disarming techniques
Demonstrate the ability to prioritize missions during active shooter situations
Demonstrate tactics necessary for active shooter situations

Minnesota POST Board Learning Objectives:
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.2.5 Discuss discretion and how it differs from selective enforcement.
1.4.1 Describe decision-making processes and models.
1.4.2 Define the term discretion and discuss when and why peace officers use their best judgment in the administration of justice and when discretion is not allowed.
1.4.3 Discuss factors that influence police officer use of discretion.
1.4.4 Based on written scenarios involving law enforcement: describe decisions officers must make, suggest appropriate actions, and defend those decisions and actions.
1.4.5 Based on scenarios of peace officer situations, practice making decisions in real time.
1.8.9 Explain why physical fitness attributes including cardiovascular fitness, flexibility, agility, strength, speed, and endurance are important to peace officer health, well-being and competence.
1.8.10 Explain the importance of and strategies for physical conditioning, good nutrition and healthy eating habits for peace officers.
3.9.1 Perform stretching, aerobics and conditioning exercises at the direction of an instructor as part of an overall fitness program to enhance strength, agility, flexibility, speed, and cardiovascular endurance.
3.9.2 Pass a physical fitness test with an overall accumulative passing score.
3.9.3 Perform peace officer duties requiring physical fitness.

3.14.9 Explain characteristics of a civil disturbance/disobedience and how it varies from criminal activity.
3.14.10 Explain tactics and formations for managing a civil disturbance.
4.1.1 Describe and demonstrate command presence and tactically safe approach techniques in a variety of law enforcement situations.
4.1.2 Demonstrate "soft" empty hand control tactics that may be used on passive resistive subjects and resistive subjects and explain why the use of a particular control technique is reasonable given the circumstances known including: distraction techniques, joint manipulations, pressure points, escapes from holds and grasps and come-along from escort techniques.
4.1.3 Demonstrate "hard" empty hand control techniques that may be used on aggressive, resistive subjects and explain why the use of a particular technique is reasonable give the facts and circumstances known including: blocks with hands, arms and legs, countermeasure striking techniques using hands, arms, elbows, legs, knees and/or feet, counter striking techniques use in ground fighting situations, appropriate verbal commands coinciding with use of force decisions and proper application of neck restraint.
4.1.4 Explain when to handcuff and risks related to improper handcuffing and failing to handcuff.
4.1.5 Demonstrate proper handcuffing techniques from several positions and under a variety of circumstances including: proper use of clear and concise verbal commands, techniques for use with cooperative and uncooperative subjects, team handcuffing techniques; both standing & prone, tactical positioning and subject control during handcuffing and searching, proper application of handcuffs (placement, tightness) and double locking, and proper positioning and transporting of handcuffed subject.
4.1.6 Explain the risk factors for sudden in-custody death including symptoms of respiratory and cardiac distress and diabetic shock and explain the implications of excited delirium.
4.1.7 Demonstrate ground fighting tactics including defenses and escapes from positions on the ground or floor including: escapes from the top superior position and the bottom superior (supine) position, escapes from headlocks and chokeholds, defending from four barriers: feet, knees, hands and elbows, and practice in multiple subject and multiple officer scenarios.
4.1.8 Explain and demonstrate basic techniques for use of the baton and impact weapons including: draws and grips with batons, stances and carrying techniques with batons, uses of the baton for physical control techniques, uses of the baton as a blocking instrument, uses of the baton for striking, identification of body target areas for striking, and baton retention techniques.
4.1.9 Explain the make-up and characteristics of chemical agents, electronic control weapons used by peace officers.
4.1.10 Demonstrate basic techniques for the reasonable use of an electronic control weapon (ECW) (demonstrations may or may not include actual discharge of the device) including: deployment methods, firing vs. drive stun, proper aftercare and probe removal, carry location and retention of E.C.W., and safety guidelines on duration and number of cycles applied.
4.1.11 Demonstrate basic techniques for the reasonable use of chemical agents (demonstrations may or may not include actual discharge of the chemical agent) including: delivery systems and methods for chemical agents, dissemination methods of chemical agents, factors to be considered before deploying chemical agents, familiarization with the effects of chemical agents on a subject, actual or simulated exposure to chemical agents in simulated law enforcement scenarios, and after-care considerations and decontamination procedures.
4.1.12 Demonstrate operation of and proficiency with weapons used by peace officers including impact weapons, electronic control devices, and chemical agents.
4.2.1 Explain and demonstrate weapon retention and disarming techniques including: - tactical positioning for gun retention defense, - retention of holstered weapons, - drawn handgun retention techniques, - disarming techniques, and - long gun retention techniques.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 2

LAWE 2285 - Crime Scene and Evidence (1)

This course will include instruction in the areas of Search and Seizure, Booking and Fingerprinting, Crime Scene Investigations, Latent Prints, Courtroom Testimony, Evidence Collection and Preservation.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to write factual, concise and complete reports
Explain overall importance of police reports and their use in the criminal justice system
Demonstrate the procedures in courtroom testimony
Demonstrate techniques used in the management of a crash scene
Demonstrate the ability to process a crime scene
Demonstrate the ability to collect latent prints
Demonstrate interview techniques for crime victims and witnesses
Explain the importance of when to obtain a warrant at crime scenes
Demonstrate procedures for collecting and preserve different types of evidence

Minnesota POST Board Learning Objectives:
3.3.1 Describe the relationship between good report writing and testimony.
3.3.2 Demonstrate proper courtroom dress and decorum.
3.3.3 Practice preparing for and presenting true and factual testimony in legal proceedings in accordance with courtroom procedure.
3.3.4 Practice managing cross examination and attempts to discredit.
3.5.1 Describe appropriate protective gear that may be needed when collecting and processing evidence.
3.5.2 Identify various types of evidence, i.e., blood and biological, weapons, explosives and arson related evidence, hair and fiber, impressions, fingerprints, documents, clothing.
3.5.3 Describe risks associated with contamination of evidence.
3.5.4 Demonstrate proper preservation, collection, processing, storage, and chain of custody procedures for a variety of types of evidence, i.e., fingerprints, DNA, shoe/tire impressions, blood spatter.
3.5.5 Demonstrate proper evidence documenting techniques, i.e. note taking, field sketching and/or photographing/videoing.
3.5.6 Discuss the impact of new or emerging technologies on crime scene evidence collection and investigation.
3.5.7 Recognize, secure and protect technical evidence at a crime scene, i.e. computers, phones, cameras, surveillance equipment.
3.5.8 Explain the impact of the Electronic Communication Privacy Act and other pertinent case law on the collection of technological evidence.
3.5.9 Discuss the importance of information obtained from electronic devices in crimes including: pornography, economic fraud, e-mail threats, extortion, gambling, identity theft, narcotics, prostitution, software piracy, and telecommunications fraud.
3.6.1 Practice responding to a variety of requests for service including: receiving and comprehending information to and from dispatcher, demonstrating safe vehicle positioning where applicable based on type of call and information available, observing and conducting initial assessment upon arrival at the scene for safety concerns and useful information, using active listening and clear oral communication skills, identifying victims, witnesses and suspects, taking statements and conducting initial interviews, making reasonable decisions based on a reasonable interpretation of observations and circumstances, and determining what additional services might be called in, e.g., EMS, Social Services.
3.6.2 Demonstrate how to safely and properly secure and protect a crime scene.
3.6.3 Given a crime scene, determine if there is enough evidence to provide probable cause for a search or arrest warrant and fill out the appropriate form(s) to obtain the warrant.
3.6.4 Request search or arrest warrants where appropriate. Explain the risks to peace officers related to exposure to blood and airborne pathogens, and the proper use of preventive equipment and procedures to reduce risks. Explain the Occupational Safety and Health Administration (OSHA) required methods of control and the protective equipment available to reduce the risk of exposure of blood and airborne pathogens. Explain and/or demonstrate post-exposure procedures and treatment

practices. Explain post-exposure reporting requirements.
3.14.12 Discuss investigation and evidence collection techniques specifically related to homicide, suicide, accidental and natural death scenes.
3.14.36 Explain the terms flashover and backdraft and the risks associated with flames, heat, smoke, toxic gasses and explosions at fire scenes.
3.14.37 Describe the crime of arson, the common evidence used in differentiating between arson caused fire and other causes, and the importance of securing and protecting evidence at fire scenes.
3.14.38 Discuss responsibilities and safety concerns relative to peace officer response to fire scenes and the different roles and responsibilities of officers, fire fighters and representatives of the fire marshal's office.
3.14.39 Explain how to use a fire extinguisher on various types of fires.
3.14.40 Explain the basic principles of hazardous materials as defined by Occupational Safety and Health Administration (OSHA) and the Emergency Response Guide Book published by the U.S. Department of Transportation.
3.14.41 Identify some resources for responding to hazardous materials incidents, i.e., fire department, Minnesota Pollution Control Agency, Minnesota Department of Homeland Security and Emergency Management (HSEM), and the Bureau of Criminal Apprehension's (BCA's) Emergency Communications Center for State level assistance and notification.
3.14.42 Explain the purpose of hazardous materials placards and the significance of their shapes, color, symbols and texts.
3.14.43 Identify some common hazardous materials placards and where they are commonly located.
3.14.44 Given scenarios involving hazardous materials describe and/or demonstrate basic incident management skills including: recognizing and identifying common hazardous materials or hazardous materials placards, and taking situationally appropriate safety precautions and reasonable actions including maintaining a safe distance, clearing the area and making referrals and notifications.
3.14.45 Identify the appearance of some explosives and incendiary devices, i.e., commercial explosives, military ordinances, improvised explosive devices (IED's), fireworks, and lack powder explosives.
3.14.46 Explain the function of the bomb squad.
3.14.47 Explain and/or demonstrate safety precautions and situationally reasonable actions in response to reports of bomb threats and suspicious objects including: when to clear an area and call in the bomb squad, procedures to be followed when searching buildings and property to locate explosive devices and materials, and risks associated with secondary devices and booby traps.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Hennepin Technical College offers reasonable accommodations to qualified students with disabilities. If you have a documented disability that may require accommodations, contact the college's Disability Services Director: Sara Laviolette at Brooklyn Park (763-488-2477) or Jean Kreutter at Eden Prairie (952-995-1544).

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 1

LAWE 2290 - Firearms (2)

This course will include instruction in the areas of Use of Deadly Force, Simunitions, Firearms and Judgmental Shootings.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Fire ammunition using semiautomatic pistols, rifles and shotguns with accuracy and safe handling
Demonstrate proper use of cover and concealment

Perform shooting exercises under a variety of light levels
Demonstrate proper cleaning techniques for handguns
Apply escalation and de-escalation tactics and procedures in the use of force continuum
Describe deadly force utilization according to MN State Statute(s) and MN case law
Demonstrate the ability to write factual, concise, and complete reports
Demonstrate the most proper and safest methods to approach and apprehend high risk suspects
Demonstrate procedures for confronting suspects and placing him/her under control or arrest
Demonstrate the verbal skills needed to control and de-escalate situations in various scenarios
Demonstrate the ability to make appropriate force decisions under stress
Employ proper tactics in dealing with suspects possessing weapons
Identify appropriate weapon based on assessment of situation

Minnesota POST Board Learning Objectives:
1.1.2 Discuss barriers to clear communication, e.g. language, stress, bias, lack of common cultural understanding.
1.8.1 Discuss the importance of a survival mindset for officers including: physical and psychological preparation for force encounters, risks associated with complacency, and wearing body armor and other safety equipment.
1.8.2 Identify the physiological, psychological and emotional effects of stress.
1.8.3 Explain some of the stressors encountered by peace officers and their effect on officers and their families including: duty related stressors, i.e. frequent encounters with illegal or unethical behaviors, emotionally charged scenes, people in distress, trauma and tragedy, stressors related to fatigue and shiftwork, and stress and long term effects associated with hypervigilance.
1.8.4 Discuss physical and psychological effects of stress before, during and after a high risk or traumatic incident including: the effects of high risk stress on the body including the brain, vision, hearing, muscles and respiratory system, and the nervous and cardiovascular systems, and how knowledge of the effects of stress in high risk or life threatening situations can help officers perform under stress.
1.8.5 Discuss critical incident debriefing and identify support services and resources for peace officers.
1.8.6 Discuss Post Traumatic Stress Disorder (PTSD) and acute stress disorders and their symptoms.
1.8.7 Describe officer survival/safety issues relative to a variety of peace officer duties, including traffic enforcement, arrest, vehicle stops, felony stops, pursuits, and plain clothes and undercover work.
1.8.8 Explain the importance of balancing peace officer roles and responsibilities and other life roles, interests and responsibilities.
2.8.1 Explain Minnesota statutes and relevant case law related to the application of force by peace officers.
2.8.2 Explain the following terms: objectively reasonable, totality of circumstances, situational factors, pre-assaultive indicators, and, escalation and de-escalation as related to peace officer use of force.
2.8.3 Discuss the term reasonable as it related to use of force.
2.8.4 State how department policies regarding use of force including deadly force may and may not vary.
2.8.5 Given scenarios, recognize when force is or is not authorized and give and defend reasonable choices for the application of various types of force depending on the circumstances of the scenario.
2.8.6 Give Supreme Court case examples authorizing the use of deadly force.
2.8.7 Analyze a variety of situations where force may or may not be authorized and demonstrate an understanding of the concept of reasonable use of force.
2.8.8 Explain the Minnesota Statute that requires officers be trained in the use of those weapons and equipment the officer is issued or authorized to carry (Minn. Stat. 626.8452).
2.8.9 Explain when force may be used to make an arrest.
2.8.10 Discuss liabilities associated with the application of force by peace officers.
2.21.1 Discuss the role of peace officers in managing and de-escalating hostile situations including how the attitude and expectations of an officer influences responses in crisis situations.
2.21.2 Describe anger/conflict management strategies useful to officers in resolving problems that arise in law enforcement settings.
2.21.3 Identify strategies and de-escalation techniques officers may use to manage conflict, reduce anger, and improve communication and cooperation and de-escalate volatile or hostile situations.
3.4.1 Discuss how conflict management strategies depend on the situation and various strategies that may be useful in resolving situations involving individuals dealing with mental illness, substance use, or developmental disabilities such as autism.
3.10.3 Discuss tactical emergency medical care considerations in on-going emergency situations.
3.14.56 Given situations involving individuals demonstrating signs and/or characteristics of mental illness, behavioral disorder or suicidal intentions requiring intervention, demonstrate appropriate intervention techniques that are likely to be beneficial in managing the situations (Minn. Stat. 626.8455) including: modeling behavior that shows the importance of putting safety first, staying alert and the danger of complacency or taking anything for granted when dealing with an individual experiencing a mental health crisis, unless situation appears immediately dangerous/critical, avoiding challenging or violating personal space, trying to eliminate noise and distractions, having one officer take lead and open communication from a safe distance, using communication techniques designed to

de-escalate volatile situations including: being patient, calm, honest and compassionate, using active listening skills while not encouraging or agreeing with delusions, using a calming voice, and avoiding challenging questions and allowing for venting.
4.2.2 Demonstrate basic principles of safe handling, operating, and shooting handguns and long guns including stance, grip, trigger pressure, sight alignment, and sight picture in standing, kneeling and roll over prone shooting positions.
4.2.3 Demonstrate proficiency (minimum score of 70% at each required distance) with shooting handguns including: close quarter shooting skills with a handgun including ability to rapidly fire multiple rounds from close quarters (no more than 2 yards from target) position, medium range shooting skills with a handgun including the ability to shoot with dominant and with non-dominant hand in both supported and unsupported shooting positions in a medium range (no closer than 5 yards and no further than 7 yards) position, and longer distance shooting skills with a handgun including the ability to draw and fire at a target that is (15 to 25 yards) away.
4.2.4 Demonstrate weapon handling including close quarter unsupported, weapon hand supported and unsupported, reaction hand supported and unsupported, and proficiency with a handgun from standing, kneeling or prone position.
4.2.5 Participate in practical handgun shooting exercises.
4.2.6 Participate in exercises and live fire or simulation drills involving: - shooting from a down position, - non-dominant hand drawing and shooting, - use of non-traditional sight picture for aiming at close range (3 to 5 yards).
4.2.7 Participate in malfunction drills using dummy rounds that include: open and closed chamber malfunction drills with handgun, weapons transition drills, and one-handed malfunction drills with both dominant and non-dominant hand.
4.2.8 Define the terms cover and concealment as they pertain to peace officer firearms drills.
4.2.9 Demonstrate shooting from behind cover and on the move.
4.2.10 Practice decision making skills while participating in firearms simulation scenarios including: multiple opponents (live fire on multiple targets), targets that fail to stop, low light/night shooting techniques including use of flashlight techniques in live-fire drills in low light/night conditions, and reloading under fire including pistol, rifle, and shotgun.
4.2.11 Demonstrate basic long gun shooting skills.
4.3.1 Evaluate situations that may require the use of force, determine when force is authorized and necessary, and discuss options for the reasonable use of reasonable force.
4.3.2 Assess, articulate and report reasons for use of force including pre-assaultive indicators and situational factors.
4.3.3 Participate in and evaluate others real time practical situations that require the use of force.
4.3.4 In real-time scenario exercises, make decisions about reasonable use of force.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 0 lab: 2

LAWE 2300 - Tactical Driving for Law Enforcement Students (0)

This course will introduce Law Enforcement students to basic defensive and emergency driving techniques. The student will be able to demonstrate techniques of operating a Law Enforcement vehicle in both emergency and non-emergency modes while avoiding accidents despite the actions of others. This class will be presented in both lecture and demonstration of skills. Students will demonstrate backing in cornering situations, long distance higher speed backing techniques and tight maneuvering exercises. There will be exercises that show basic evasive and collision avoidance driving techniques. The skid control portion is designed to show the student how to steer out of a skid. It will also emphasize proper recovery techniques with the use of accelerator, steering inputs and use of brakes. This

class is taught at a location to be determined; it is a two day, 16 hour program and is graded pass/fail.

Prerequisite: Admission into the Law Enforcement Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

LNDC - Landscape and Horticulture Careers

LNDC 1110 - Introduction to Landscape/Horticulture Careers (1)

This course is designed to introduce the student to the many and varied areas of the landscape industry, the employment opportunities and educational requirements. This course will help students understand the landscape industry and formulate career education goals.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Prepare a resume
Examine HTC Policies and Procedures
Develop a personal goal plan
Conduct an Industry Interview
Identify professional organizations in the landscape horticulture industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

LNDC 1120 - Woody Plants I - Trees (4)

This course is designed to give the student a comprehensive understanding of shade, ornamental and native deciduous trees and coniferous evergreen trees. Emphasis will be given to identifying characteristics, nomenclature and their use in the landscape.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify deciduous shade trees
Identify evergreen trees
Identify native trees
Identify ornamental trees
Access plant photos
Determine use of deciduous shade trees
Determine use of evergreen trees
Determine use of ornamental trees
Determine use of native trees
Determine use of evergreen trees
Determine use of deciduous shade trees
Complete a tree reference book

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 4

LNDC 1131 - Arboriculture I (3)

This course is designed to give students a fundamental knowledge of the care of woody plants in the landscape. Topics covered include: values and benefits of trees; proper planting techniques; extensive study and lab work on formative, corrective, and renewal pruning techniques; site and soil problems; serious insect and diseases that affect landscape trees; woody invasive species management; construction damage prevention; and information resources via the web, professional organizations, and state agencies.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 1141 - Nursery Propagation and Production (3)

This course is designed to give the student a fundamental understanding of the production process of the nursery industry. Labs will involve sexual and asexual propagation, which include commercially accepted methods of seed propagation; division, cuttings, layering, grafting and tissue culture.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate sexual propagation techniques
Demonstrate propagation of perennials
Demonstrate propagation of bulbs
Demonstrate cutting techniques
Demonstrate grafting/budding techniques
Demonstrate layering techniques
Describe the tissue culture process
Present an oral presentation on two propagation projects
Record accumulated scientific data from lab experiments

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 1145 - Tree Climbing Operations (3)

This course is a continuation of Arboriculture I with emphasis on tree care via rope, saddle climbing, and ground worker operations. Specialized topics and practices to include: climbing safety, climbing equipment, familiarity with ropes and knots, throw line, foot locking, mechanics of climbing and moving through trees via rope and saddle. The student will also learn how to provide support to climbers aloft through roping and rigging skills, material handling, equipment operation, chainsaw safety and customer service relations. Along with Tree Climbing Operations, Arboriculture and Advanced Arboriculture students can prepare for the International Society of Arboriculture (ISA) Tree Worker Certification, administered by the MN Society of Arboriculture (MSA).

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of practical knot tying
Identify tree climbing equipment
Maintain climbing equipment
Conduct different techniques for entering a tree canopy
Demonstrate knowledge of tree safety equipment
Perform tree safety inspections
Demonstrate knowledge of basic ground tools and equipment
Perform basic equipment maintenance tasks
Demonstrate safe cutting skills
Identify site hazards
Provide communication and support to climbers aloft
Demonstrate rigging/roping knots/hitches
Demonstrate running a lowering line according to conditions
Demonstrate a dropzone

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 1151 - Insects and Diseases of Landscape Plants (3)

This course is designed to give the student a fundamental understanding of insects and diseases of woody plants. Students will examine ways to manage pests by chemical means and/or natural methods.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the life cycles of diseases
Identify the life cycles of insects

Identify the life cycle of arachnids
Diagnose non-infectious disorders
Diagnose infectious diseases
Diagnose insect problems
Recommend control measures for non-infectious disorders
Recommend control measures for infectious diseases
Recommend control measures for insect problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 1160 - Greenhouse Infrastructure Technology (2)

This course is designed to give the student an understanding of the greenhouse infrastructure used in the production of ornamental crops and food systems. Technology taught will include greenhouse structures, controlled environments, application of specialized equipment, and alternative growing systems such as High Tunnels.

Prerequisite: None

Course Requirements and Evaluation: Referto Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of greenhouse heating systems
Demonstrate greenhouse structure knowledge
Demonstrate knowledge of cooling systems
Demonstrate knowledge of greenhouse equipment
Identify watering systems
Demonstrate knowledge of fertilization systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

LNDC 1166 - Sustainable Food and Plant Production - Fall (3)

This course is designed to give the student an understanding of commercial edible and nonedible sustainable crop production practices based on the fall season. Ornamental crops to be grown are chrysanthemums, poinsettias, and other minor crops. Special emphasis will be given to herb and vegetable hydroculture.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform crop production using hydroculture
Produce potted crops for seasonal holiday sales
Create a production schedule
Manipulate growth parameters
Identify greenhouse pests
Provide control measures for insects and diseases
Maintain a crop journal
Market crops

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

LNDC 1176 - Sustainable Food and Plant Production - Winter (3)

This course is designed to give the student an understanding of the production, culture and marketing of winter floriculture crops and sustainable food crops. Special emphasis will be given to the production of Easter lilies, geraniums, and other minor potted crops grown in the spring.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce crops
Manipulate growth parameters
Create production schedule
Identify greenhouse insects
Diagnose crops diseases
Provide insect and disease control measures
Maintain a crop journal
Market crops

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

LNDC 1187 - Sustainable Food and Plant Production - Summer (2)

This course is designed to give the student an understanding of the production, culture and marketing of summer floriculture crops as well as the production, harvest and marketing of food crops using sustainable practices. Special emphasis will be given to fall mum production, organic cropping, community supported agriculture, vermiculture practices, mushroom cultivation, permaculture systems, aquaponics, vegetable gardening, strawbale production, microgreen production, outdoor cutflower production and high tunnel food production.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform crop production with hydroponics
Create a production schedule for each crop grown
Manipulate growth parameters
Manipulate photoperiods
Determine crop fertilizer programs
Execute crop harvesting procedures
Apply postproduction techniques
Identify crop insects
Diagnose crop diseases
Document crop information in journal

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

LNDC 1190 - Woody Plants II - Shrubs (4)

This course is designed to give the student a comprehensive understanding of deciduous and evergreen shrubs. Emphasis will be given to identifying characteristics, nomenclature and uses in the landscape.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify deciduous shrubs
Identify evergreen shrubs
Identify vines
Identify shrub roses
Access plant info from internet sites
Recommend uses of deciduous shrubs
Recommend uses of evergreen shrubs
Recommend uses of vines
Recommend uses of shrub roses
Construct a shrubs scrapbook
Identify proper planting techniques
Describe flower types and colors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 4

LNDC 1202 - Herbaceous Plant Materials (4)

This course is designed to give the student a understanding of herbaceous plants. Areas of study include cultural needs of plants, pest problems, bloom period, and design qualities of plants in the landscape. Included in the plant study are annuals, perennials, ferns, and groundcovers.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributedthe first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define basic horticultural terminology
Demonstrate use of botanical names
Demonstrate use of common names
Identify annual plants
Identify perennial plants
Identify ground covers
Access plant information from internet sites
Describe the maintenance of each plant

Identify insects
Identify plant disease
Identify plants through PowerPoint presentations
Describe the role of the plants in a landscape setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 4

LNDC 1220 - Integrated Pest Management (2)

This course is a study of the pest problems that affect greenhouse crops, nursery crops and woody plants in the landscape. Along with learning insect life cycles, students will participate in releasing live biological insects in the greenhouses. Special emphasis will be given to understanding how to manage environments using a combination of practices such as cultural, biological and chemical controls. This is a preparatory study for taking the Minnesota Department of Agriculture Pesticide applicators license test for categories A/E.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine pest thresholds in HTC greenhouses
Identify greenhouse insects and their life cycles
Determine biocontrol agents for insect populations in greenhouses
Demonstrate the use of application equipment
Read a pesticide label
Demonstrate theproper use of personal protective equipment
Demonstrate the ability of keeping proper pesticide records
Demonstrate knowledge of the A/E Pesticide applicator manuals by successfully passing state examination

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

LNDC 1231 - Nursery Operations (2)

This course explores the aspects of how a production nursery operates including growing, cultural practices, harvesting, and shipping. Field tries will allow the student opportunities to implement lecture information.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of the history of the nursery business in the United States/Minnesota
Demonstrate knowledge of field grown plant systems
Demonstrate knowledge of container grown plant systems
Demonstrate knowledge of machine harvesting nursery plants
Demonstrate knowledge of care and handling methods of nursery stock
Identify grading and sizing standards for United States nursery crops

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

LNDC 1235 - Landscape Operations (2)

This course will explore the process of how greenscape and hardscape ideas become completed field projects. Sources of materials, handling, installation procedures, project coordination and problem solving will be covered. Labs will be an important part of students gaining field experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe landscape Installation process
Identify landscape installation products
Demonstrate use of landscape tools
Complete site preparation procedures
Demonstrate knowledge of site organization and staging
Explain drainage solutions
Explain the history of the landscape industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

LNDC 1242 - Plant Biology (4)

This course is designed as an overview of the taxonomic and structural characteristics of higher plants. An understanding of plant anatomy, function and growth will be discussed. A lab will be held once a week to give hands on activities with regards to plant structure.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify chemical structure of plants
Identify plant cell structure
Identify plant tissue
Identify root structures
Identify stem structures
Identify leaf structures
Identify floral structures
Identify fruit/seed structures
Identify dicotyledon plants
Identify monocotyledon plants
Describe the photosynthetic process
Describe the respiration process
Describe transpiration

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

LNDC 1250 - Bedding Plant Production (3)

This course is designed to introduce the student to cultural schedules, growing techniques, and profitable markets for herbaceous plants. Emphasis will be placed on spring bedding plants. The student will grow bedding plants and market them to the public.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate seeding techniques
Implement a growing schedule
Demonstrate transplanting skills
Determine container systems
Identify bedding crop pests
Implement cultural requirements
Develop a marketing plan
Explore advanced technology for the bedding plant industry

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

LNDC 1271 - Soil Science (3)

This course will help the student recognize the various types of soils and how plants respond to various soils and soil fertility.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of the history of soil science
Demonstrate knowledge of soil formation
Demonstrate knowledge of soil classification
Demonstrate knowledge of soil texture
Demonstrate knowledge of soil water
Demonstrate knowledge of soil pH
Demonstrate knowledge of organic matter
Demonstrate knowledge of soil fertility
Demonstrate knowledge of fertilizers
Demonstrate knowledge of soil tests

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 1300 - Minnesota Invasive Terrestrial Plants (2)

This course is designed to give the student a working knowledge of invasive plants in Minnesota and surrounding regions by studying local eco-regions and designing a management plan to control invasives on that site. The plant list will cover non-native, invasive woody and herbaceous plants that are currently endangering native habitats. Annual, perennial, and biennial types will be covered. Students will learn the common and botanical names as well as the habitats these plants are most successful in.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify invasive plants by photos
List plant features that aid in species identification/control
List threats of invasive plants to native habitats
Predict environmental consequences of certain control methods
Demonstrate manual control methods
List chemical control methods

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

LNDC 1315 - Minnesota Native Plants and Communities (4)

This course is designed to introduce the student to Minnesota's natural resources, and the plants that live there natively. Emphasis will be given to identifying characteristics, nomenclature and functions of native plants in

Minnesota's six ecosystems. The student will participate in weekly plant hikes to aid in the identification of plants weather permitting. The student will come away with knowledge of the impact humans have on those plants and their ecosystems.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop sound principles of Minnesota ecology
Develop sound principles of Minnesota's climate
Examine human impacts on the Eastern broadland forest ecosystems in Minnesota
Examine human impacts on the Laurentian mix forest ecosystems in Minnesota
Examine human impacts on the tall grass and aspen parkland ecosystems in Minnesota
Examine human impacts on the prairie parkland ecosystems in Minnesota
Examine ecological complexities of old growth forests
Examine the significance of old growth forests
Identify proper conservation measures
Identify native plant materials in the natural habitats
Study native plant habitats through field sessions
Develop principles of geologic history in Minnesota

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

LNDC 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently.
Organize work schedule.
Follow prescribed procedures.
Demonstrate safety.
Demonstrate initiative.
Integrate previously acquired skills.
Integrate previously acquired knowledge.

Display good judgment.
Demonstrate dependability.
Exhibit professionalism.
Organize work area.
Demonstrate cooperation.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

LNDC 2110 - Introduction to Landscape Construction (2)

This course is designed to give the student a basic understanding of essential skills necessary in the landscape construction industry. Included are blue print reading, landscape surveying, grading and drainage and basic carpentry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify hand tools
Identify landscape construction materials
Identify power tools
Measure landscape plans
Read blueprints
Use surveying equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

LNDC 2120 - Landscape Construction I (4)

This course is designed to prepare the student for professional competency in the area of landscape construction. Emphasis will be given to plan reading, plan take offs and extensive field lab projects. The focus of this course will be on different types of retaining walls, pavers, concrete, ponds and stonework.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete landscape construction drawings
Define installations specifications
Construct concrete retaining walls
Construct water features
Construct of paver projects
Describe landscape construction processes
Estimate construction drawings
Coordinate site staging
Demonstrate skill for the construction of outdoor lighting
Acquire catalogs from suppliers
Design an outdoor lighting system
Design an irrigation system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

LNDC 2131 - Landscape Construction II (3)

This course is designed to prepare the student for professional competency in the area of landscape construction. Emphasis will be given to plan reading, plan take offs and extensive field lab projects. The focus of this course will be on deck and fence construction.

Prerequisite: LNDC2110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Draw fence plans
Draw arbor plans
Draw deck plans
Explain specifications for deck construction
Perform estimating for deck materials
Construct a deck project
Demonstrate leveling procedure for footings

Analyze types of building materials
List tools needed for deck construction
Operate power tools
Construct a fence section
Identify wood suppliers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2155 - Advanced Tree Climbing Operations (2)

This course is a continuation of Tree Climbing Operations with emphasis on tree care via rope and saddle climbing. Specialized topics and practices to include: An overview of basic tree climbing, advanced hitches and knots, progressive equipment and techniques, line placement and tree entry, limb walking, pruning techniques, aerial rescue, electrical hazard awareness, and basic rigging.

Prerequisite: LNDC1131 and LNDC2150

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of advanced knot tying
Demonstrate knowledge of cutting and pruning a tree canopy
Identify tree climbing equipment
Demonstrate care of equipment
Practice techniques for entering a tree canopy
Develop trust in safety equipment
Perform tree safety inspection

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

LNDC 2160 - Sustainable Landscape Design I (4)

This course is designed to give the student a fundamental knowledge of landscape design principles and an opportunity to develop skills in designing and drafting landscape plans. Leadership in Energy and Environmental Design (LEED) will be covered for landscape projects.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Scale measure landscape plans
Letter drawings
Select plant symbols
Apply drafting tools
Recognize standard landscape drafting symbolization
Apply landscape drafting techniques
Understand plan, elevation, section and detail drawing
Produce a graphic drawing
Measure a residential property
Interviewing a client
Identify design principles
Prepare residential master plan
Prepare plan cost estimates

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

LNDC 2165 - Advanced Arboriculture (3)

This course is a continuation of Arboriculture I and is designed to give students a advanced knowledge of the care and recognition of problems facing woody plants in the landscape. Topics covered include: advanced tree pruning, storms and damage, hazard trees, soil remediation, plant appraisal and valuation, trees and the law, commercial use of pesticide injections, and air spade work. The class will discuss the ANSI and MnDOT industry standards for woody plant material and describe the Tree Inspector Certification process through the MN Dept. of Agriculture. Students will also study the defects within trees in which structural integrity may be compromised, as well as recognizing and identifying potentially hazardous trees and defects within trees. Emphasis will be on trees within the urban setting where typical surroundings and conditions will influence best management practices.

Prerequisite: LNDC1131

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Access ANSI and MnDOT standards for small woody plant material
Perform pruning of trees under 12 feet tall
Recommend soil remediation measures for trees and shrubs
Demonstrate tree hazards through site inspections
Identify symptoms of invasive pests in the landscape
Recommend IPM measures to control invasive pest problems in the landscape
Perform tree value appraisals in the landscape
Demonstrate knowledge of the MDA Tree Inspector Certification process
Demonstrate knowledge of CODIT
Demonstrate knowledge of species roles in compartmentalization
Recognize structural issues versus health issues
Communicate various aspects of risk management/avoidance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2171 - Sustainable Landscape Design II (3)

This course is a continuation of Landscape Design I. Advanced design concepts, problem solving and sustainable landscape solutions will be covered. Students will take projects through the complete design process from site analysis to concept and working drawings.

Prerequisite: LNDC2160

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Draw deck railing detail
Draw bench detail
Draw a patio plan
Draw perspective drawing
Render perspective drawing
Draft a full lot master plan
Write a paper
Examine types of landscape styles
Perform sales presentation
Estimate full lot master plan
Research theme garden
Render theme garden plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2210 - Tropical Plants and Their Uses (2)

This course is designed to give students an understanding of the Interior Plantscaping industry. Emphasis will be placed on tropical plant identification, interior plant design, selection, installation, management and maintenance within buildings. The effects of interior plants on people and the environment will also be emphasized.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify species and cultivars best adapted to commercial interiorscapes
Demonstrate knowledge of the common and scientific names for different species and cultivars
Assess the impact of plants in the interiorscape on the quality of life for humans
Explain the environmental requirements of common interior plants
Evaluate biotic and abiotic problems of interior plants following diagnostic protocol
Evaluate indoor environmental conditions
Determine indoor environmental modification that will enhance plant growth
Demonstrate knowledge of appropriate plant materials and accessories for interior landscaping

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

LNDC 2220 - Turf Culture and Management (3)

This course is designed to give the student a comprehensive knowledge of the many kinds of turf grasses used in the upper Midwest for residential, commercial and athletic areas. Emphasis will also be given to their cultural requirements and specialized turf maintenance equipment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
List career opportunities in turfgrass management
Identify various turf specie that can successfully be used in this area
List strengths and weaknesses of turf types
List turf maintenance requirements
Combine grasses according to site conditions
Draw a plan for locations of turf types for a site
Explain how and why budgets, quality expectations and intended use impact the selection of which grasses to plant in both an initial establishment and a renovation situation
Explain why renovation is necessary
List what nutrients are needed for both establishment and maintenance of various turf areas
List the cost/benefit factors when making purchasing decisions
Discuss why soil texture and structure are critical to turf maintenance and how to factor these in to a maintenance program
Demonstrate a basic understanding of soil science and how it impacts fertilization programs
List the major pests that impact turf in this area
Describe the major pesticides that may be needed for successful turf growth
Discuss the importance of water management, drainage and irrigation
List specialized equipment needed for turf establishment
Identify unique turf problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

LNDC 2241 - Landscape Equipment Operation (3)

This course is designed to give students hands-on experience with various types of equipment used in the Landscape/Horticulture industry. Focus will be given to safety, maintenance and the proper operation of equipment such as: skid steer loaders, 1 ton truck and trailer, backhoe, tree spade, workman, chainsaws, wood chipper, lawn mowers and various other types of equipment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Operate skid steer loader
Load/unload 1 ton truck and trailer
Operate backhoe
Operate tree spade
Check oil on equipment
Cut timbers with chainsaw
List safety equipment needed to operate small equipment
List safety equipment needed to operate large equipment
Operate auger

Operate lawn mowers
Attach various apparatus to skid steer loader

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2261 - Professional Gardening (3)

This course is designed to prepare the student to professionally design, install and maintain various garden types and containers in the community and private/commercial sectors. Some of the hands-on skills taught include site preparation, plant selection, pest/weed identification, pruning, tool identification, and pollinator activity in the garden.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate knowledge of garden types
Demonstrate garden maintenance
Demonstrate knowledge of garden soil
Identify garden tools
Demonstrate knowledge of herbaceous perennials
Demonstrate garden propagation
Demonstrate use of garden design
Identify garden pests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2271 - Landscape Computer Design and Applications I (3)

This course is designed to introduce the student to application of the computer in landscape drafting and plan development. The latest Dynascapes CAD software is used. Students create designs and produce completed drawings.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the CLI/Prompt line
List the various pull down menus
Discuss the Undo/Redo commands
Open a drawing
Describe the difference between the various zoom commands
Describe the difference between the Delete vs. Undo commands
Perform Save/Save As commands
Perform Cut/Copy/Paste commands
List the Dynascape Prototypes and their functions in the software
Draft a building foot print
Draft a landscape plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2280 - Landscape Computer Design and Applications II (3)

This course is a continuation of Landscape Computer Design and Applications I. The students will prepare complete landscape plans and working drawings. The latest Dynascapes CAD software is used. Students will produce material lists, quantity takeoffs and estimates using various computer programs.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Print a drawing
Create a landscape plan
Create a 3D drawing
Create a quote
Insert dimensioning
Print drawings as TIF, JPEG and PRN types
Insert raster images
Combine 2D and 3D drawings

Color a landscape plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

LNDC 2290 - Dynascapes Training for the Green Industry (2)

This course is designed for the industry experienced designer. The course will give the student the required skills to become comfortable and proficient with software. Basic computer knowledge is required.

Prerequisite: Previous windows based computer knowledge required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Draft a building foot print
Draft a landscape plan
Color a landscape plan
Investigate the use of Dynascape software
Use tools in the Draw Tool Box
Use tools in the Edit Tool Box
Demonstrate Dynascape Design software program

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

LNDC 2330 - Landscape Construction Internship Certificate (4)

This is a cooperative training program between Hennepin Technical College and a landscape occupation facility

which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 4

LNDC 2335 - Landscape Construction Internship (1 - 4)

This is a cooperative training program between Hennepin Technical College and a landscape occupation facility which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

LNDC 2341 - Arboriculture Internship Certificate (3)

This is a cooperative training program between Hennepin Technical College and a landscape occupation facility which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 3

LNDC 2345 - Arboriculture Internship (1 - 4)

This is a cooperative training program between Hennepin Technical College and a landscape occupation facility which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

LNDC 2350 - Grounds Maintenance Internship (1 - 4)

This is a cooperative training program between Hennepin Technical College and a grounds maintenance occupation facility which allows the student to apply competencies learned in the program to an employment/work experience.

Prerequisite: Completion of courses for a certificate or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

LNDC 2360 - Horticulture Internship (1 - 4)

This is a cooperative training program between Hennepin Technical College and a landscape occupation facility which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

MACH - Machine Tool Technology

MACH 1056 - Blueprint Reading I (3)

This course is designed for people who are currently working on, or training to be employed in technical positions that require the use of engineering drawings. Dimensions and notes, multi-view drawings, tolerancing and shop sketching will be given consideration. This course will focus on the latest drafting conventions including ANSI standards. Students will use textbooks and handouts that guide them through how blueprints are developed and how to interpret

them.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain title block entries
Identify line types
Evaluate pictorial drawings
Evaluate projection drawings
Interpret dimensioning systems
Interpret tolerancing systems
Explain geometric dimensioning and tolerancing
Interpret sectional views
Identify working drawings
Draw alpha numeric characters
Sketch projection views
Sketch pictorial views

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MACH 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MACH 1100 - Introduction to Machining Technology (3)

This course will give the student an overview of machining technology as it is used in the manufacturing industry today. The course also covers shop safety, use of hand tools, use of precision measuring tools and the operation of the pedestal grinder. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify safe shop procedures
Measure parts using precision instruments
Identify mechanical hardware
Identify hand tools
Produce square parts using files
Produce hand sawn parts
Produce threaded parts using taps and dies
Identify layout instruments
Lay out parts
Produce general purpose tool bit
Sharpen twist drill

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 1105 - Drilling and Sawing Processes (2)

This course will introduce the student to the horizontal cutoff saw, the vertical bandsaw and operation of the drill press. Hands on use of these machine tools will be emphasized through a lab experience. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Recommended: MACH1100 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Produce abrasive saw parts
Produce horizontal cut-off saw parts
Produce vertical band saw parts
Calculate speeds and feeds for drill press tooling
Produce drilled and reamed holes
Produce countersinks and counterbores
Produce tapped holes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 2

MACH 1110 - Turning Technology I (3)

This course is designed to introduce the student to the function and application of the engine lathe. Basic turning operations will be performed. Threading with taps and dies, boring and grooving operations will also be covered. Students will produce parts in the shop environment. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH1105 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Identify engine lathe nomenclature
Calculate speeds and feeds for turning operations
Produce faced parts
Produce turned diameters
Produce drilled and reamed parts
Produce countersinks and counterbores
Produce threaded parts
Produce bored parts
Produce cutoff parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 1120 - Turning Technology II (3)

This course is a continuation of Turning Technology I covering the operations of single point thread cutting, knurling, form tools and cutting tapers. Special emphasis will be placed on turning with carbide insert tooling. Students will produce parts in the shop environment. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH1110 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Identify thread nomenclature
Make thread calculations
Produce threaded parts
Produce knurled parts
Produce form tool parts
Make taper calculations
Produce taper parts
Calculate carbide speeds and feeds
Produce carbide turned parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 1125 - Milling Technology I (3)

This course will introduce the student to the operation of the vertical milling machine. Emphasis will be placed on machine setup and machining parts square and parallel. Drilling, reaming, tapping, boring and angle milling will also be covered. Students will produce parts in the shop environment.

Prerequisite: MACH1105 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Identify milling machine nomenclature
Adjust milling machine head and vise
Calculate milling machine speeds and feeds
Produce flat parts
Produce parallel and square parts
Produce slotted parts
Produce drilled and reamed parts
Produce threaded parts
Produce bored parts
Produce angle and beveled parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 1130 - Milling Technology II (3)

This course is a continuation of Milling Technology I and will cover the following vertical milling operations: pocket milling, form cutters, milling keyways, using a indexing head and rotary table. Students will produce parts in the shop environment. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH1125 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce pocket
Produce concave and convex radii
Produce internal and external dovetails
Identify key and key seat nomenclature
Perform keyway and keyseat calculations
Produce keyways and keyseats

Make indexing head calculations
Produce parts using indexing head
Make rotary table calculations
Produce parts using rotary table

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 1135 - Precision Grinding (2)

This course is designed to introduce the student to the surface grinder. Grinding flat surfaces, angles and form grinding will be covered. Students will produce parts in the shop environment.

Prerequisite: MACH1125 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Identify surface grinder nomenclature
Replace grinding wheel
Produce flat parts
Produce parallel and square parts
Produce angle parts
Produce vertical surfaces
Produce radius parts
Produce form parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 2

MACH 1140 - Introduction to CNC (3)

This course will introduce the students to the fundamentals of computer numerical control (CNC) milling and turning. Basic CNC operation and conversational programming will be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH1125 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe shop procedures
Identify CNC system components
Explain axis and coordinate systems
Identify RS274 words
Interpret Word Address Format programs
Identify conversational programs
Operate Bridgeport Easy Trac machine
Operate Haas Toolroom Mill
Operate Haas Toolroom Lathe
Produce parts using conversational programming
Produce parts using Word Address Format programming

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 1145 - Machinists Reference Materials (1)

This course will introduce the student to the use of reference books used by individuals in the machining industry. The use of Machinery`s Handbook and The Machinists Practical Guide will be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve general formula problems
Solve metallurgical problems
Solve screw/thread problems
Solve cutter problems

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1

MACH 1205 - Machine Tool Technology (3)

This course is designed for students who are working or majoring in engineering or mechanical fields. These fields include areas such as: Automation Robotics Engineering Technology, Engineering CAD, Fluid Power, Machine Tool, Manufacturing Engineering and Plastics. The theory and application of machine tools to these fields will be emphasized. The concepts of CNC, Tool and Die, and Moldmaking will also be explored. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Registration in METS Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify safe shop procedures
Measure parts using precision instruments
Identify mechanical hardware
Identify hand tools
Lay out parts
Produce square parts
Produce drilled parts
Identify milling operations
Identify turning operations
Identify grinding operations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop lab projects
Organize work schedule
Demonstrate ability to work independently
Demonstrate safety
Demonstrate initiative
Integrate previously acquired skills
Integrate previously acquired knowledge
Complete CNC machining centers setups
Simulate program on machine controllers
Produce machined parts
Complete inspection
Record documentation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

MACH 2400 - CNC Setup and Operation (3)

This course will familiarize students with CNC machines. The student will be trained in safety procedures, setup, and operation of various types of CNC machines. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: CNC Operators certificate, or equivalent industry experience with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate CNC machines
Explain CNC controls
Explain CNC programming language
Explain CNC language format
Complete CNC machining center setups

Demonstrate conversational machining center programming
Demonstrate conversational turning center programming
Explain manual programming applications
Simulate program on machine controllers
Demonstrate optical tool setter
Demonstrate CNC tuning center tool setting probe

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2406 - CNC Programming (3)

This course will introduce the student to computer numerical control machine tools. CNC programming, setup, and operation will be studied. Milling and turning programs will be developed and examined. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: CNC Operators Certificate, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain coordinate system/axis orientation
Utilize shop mathematics
Compare carbide tool holders/inserts
Explain CNC machining/turning center safety
Examine CNC mill tool length/radius compensation
Examine CNC machining center workholding devices
Examine CNC machining center tool holders/tools
Explain climb and conventional milling
Select CNC machining center speeds and feeds
Explain CNC turning center tool length/diameter compensation
Explain tool nose radius/direction compensation
Select CNC turning center speeds and feeds

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

MACH 2410 - CAD/CAM (3)

This course will introduce the student to computer-assisted design and computer-assisted machining. Machining processes and post-processor selection will also be covered.

Prerequisite: METS1000 or basic computer skills

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain CNC fundamentals
Explain CAD/CAM programming processes
Compare CAD/CAM cartesian coordinate system to machine tool coordinate system
Explain CAD/CAM techniques
Relate coordinate axis to CNC mills and lathes
Construct various geometry for CNC milling
Select modify functions
Construct CNC milling/turning toolpaths
Prepare process sheets
Construct various geometry for CNC turning
Select CNC turning modify functions
Utilize verify operation
Utilize post-processors
Explore creation of wire frame models

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2415 - CNC Milling (3)

This course will introduce the student to the fundamentals of computer numerical controlled milling. Programming, tooling requirements, machine setup, and machine operation will be emphasized.

Prerequisite: CNC Operators Certificate, or equivalent industry experience with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop milling process
Complete CNC milling text related work
Develop programs utilizing various methods
Measure X and Y part axis zero
Complete tooling setup
Complete tool carousel setup
Measure tool length offsets
Complete CNC program editing
Produce machined parts
Inspect machined parts
Complete documentation
Complete teardown of setup

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2420 - Blueprint Reading II for Machinists (2)

This course is a continuation of Blueprint Reading I. Enhancing machinists and inspectors blueprint reading skills will be emphasized. An introduction to Geometric Dimensioning and Tolerancing will be covered along with other advanced blueprint reading skills.

Prerequisite: MACH1056 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret orthographic drawings
Evaluate Geometric Dimensioning and Tolerancing call outs
Identify screw thread symbols
Identify steel coding system
Interpret casting drawings
Interpret welding drawings
Interpret working drawings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

MACH 2425 - Geometry/Trigonometry for Machinists (2)

This course covers the practical application of the basic principles of plane geometry and right angle trigonometry to solve machine shop related problems. Included will be right triangle functions and solutions along with the law of sines and the law of cosines. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MATH1500 or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify principles of planar geometry
Solve geometric problems using the principles of planar geometry
Identify principles of trigonometry
Solve problems using the Pythagorean Theorem
Solve problems using sine function
Solve problems using cosine function
Solve problems using tangent function
Solve problems involvingoblique triangles
Solve compound angle problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

MACH 2430 - CNC Machining Centers (3)

This course will allow the student to increase their skills in CNC milling applications. CNC machining centers will be utilized. Programming, tooling requirements, machine setup, and machine operation of CNC machining centers will be emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH2415

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Program projects using various methods
Measure and store X and Y part axis zero
Complete tooling setup
Complete tool carousal setup
Measure and store tool length offsets
Complete CNC program editing
Produce machined parts
Examine and inspect machined parts
Record documentation
Complete teardown of setup

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2435 - CNC Turning Centers (3)

This course will introduce the student to CNC turning centers. Programming, tooling, setup, and operation of CNC turning centers will be emphasized.

Prerequisite: CNC Operators Certificate, or equivalent industry experience with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop turning process
Complete CNC turning center text related work
Develop programs utilizing various methods
Measure X and Z part axis zero
Store tool nose radii and vector directions
Complete tooling setup
Complete tool turret setup
Produce machined part
Examine machined parts
Complete documentation
Complete teardown of setup

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2440 - Quality Assurance (2)

This course will expose the student to quality control concepts utilizing common manufacturing inspection methods. Inspection tools will include CMM machines, the digital height stand, profilometer, etc. SPC and the ISO 9000 series will also be discussed. The student will review and create inspection forms and charts.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify tenets of variation
Evaluate sample data using statistical analysis
Calculate Standard Deviation of a sample
Construct XR charts
Measure parts using digital height gauge
Measure parts using profilometer
Measure parts using toolmakers microscope
Measure parts using optical comparator
Measure parts using CMM

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MACH 2445 - Heat Treating and Metallurgy (2)

This course will introduce the student to the identification and characteristics of the common metals used in the machining industry. Emphasis will be placed on the composition of steel and the effects of its alloys. Heat treating and hardness testing of steel will also be examined. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH1125 or Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify properties of metals
Identify steel making process
Identify steel classification system
Identify nonferrous materials
Solve heat treating problems
Identify heat treating equipment
Produce hardened steel parts
Evaluate metal hardness

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

MACH 2450 - Fundamentals of EDM (2)

This course is designed to introduce the student to the fundamentals of electrical discharge machine (EDM) technology. The process covered will include the programming, tooling, setup, and operation of traveling wire and sinker EDM machines.

Prerequisite: CNC Operators Certificate, or equivalent industry experience with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate EDM safety precautions
Examine EDM machine controller system
Select EDM process and setup
Develop wire EDM program and wire paths
Validate wire EDM program
Complete EDM edits
Produce wire EDM projects
Complete inspection
Examine sinker EDM machine controller system
Create program EDM program and erode strategies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MACH 2455 - Die/Mold Design (3)

This course will introduce students to the concepts of Tool and Die/Mold design. Projects include researching and designing a basic die and mold. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: CNC Operators Certificate, or equivalent industry experience with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete tool and die text work
Select stamped part idea for die project
Develop die design
Select die set stock and component requirements
Complete die design
Complete moldmaking text work
Select molded part idea for injection mold project
Develop mold design
Select mold set stock and component requirements
Complete mold design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2460 - Die Construction (3)

This course applies the principle skills learned from Die/Mold Design to the construction of basic die components. The student will machine and construct a basic die. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH2455

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safety precautions
Select material and hardware for die
Complete machining of die plates
Complete grinding of die plates
Produce die opening
Produce punch
Complete hole operations
Assemble die components
Examine and inspect die

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2465 - Mold Construction (3)

This course applies the principal skills learned in Die/Mold Design to the construction of basic mold components. The student will machine and assemble a basic mold.

Prerequisite: MACH2455

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safety precautions
Select permanent mold base
Select materials and hardware for mold
Complete machining of force plate
Complete machining of cavity plate
Complete machining of ejector plate
Produce gates and runners
Complete hole operations
Produced polished cavity
Assemble mold assembly
Verify alignment
Inspect completed mold

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2470 - Advanced CNC Turning Centers (3)

This course is designed to allow the student to increase his/her skill level in CNC Turning Centers. Skills learned in the CNC Turning Centers course will be applied to programming and machining selected turned parts. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH2435

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop turning process
Complete tooling setup
Complete tool turret setup
Complete CNC program editing
Produce turned part
Inspect machined parts
Record documentation
Complete teardown of setup

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MACH 2475 - Gibbs CAD/CAM Milling (3)

This course will introduce the student to computer-assisted design and computer-assisted machining. Students will use the latest version of GibbsCAM software to simulate CNC milling and generate CNC code. Part design, machining processes, and post-processor selection will be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: METS1000 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain CNC milling concepts
Prepare new part file
Complete part setup on Gibbs
Prepare part geometry
Prepare cutting tools from library
Develop machining operations
Develop machining processes
Simulate cut part rendering
Develop post-processing file
Explain Geometry Expert function
Explain 2 1/2 Axis surfacing
Develop machining patterns
Produce text engraving files

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2480 - ESPRIT Programming (3)

This course will introduce the student to computer-assisted design and computer-assisted machining; CAD/CAM. Students will use ESPRIT CAD/CAM software to draw parts, create features on wire frame and solid models, create CNC milling and turning tool paths and generate code. Tool and fixture setup sheets will be produced as well as process sheets and time sheets.

Prerequisite: Prerequisite: MACH1140. Recommended: MACH2406

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain CAD/CAM fundamentals
Describe menus and menu setup and the user interface
Construct various geometry for CNC milling
Explore creation of wire frame geometry
Create solid models with extrusions and revolves from wire frame geometry
Select geometry modify functions, trim, mirror, rotate and copy
Install templates for fixtures and stock material for rendering
Perform layer creation and translation of geometry, models and toolpaths
Construct various geometry for CNC turning
Develop machining processes
Select entities to create features, chains and point to point selections
Create lead in and lead out lines and reversing toolpath directions
Utilize Knowledge Base operations for tools, and their speeds and feeds
Translate, move and copy toolpaths

Simulate machining processes through advanced simulation interface
Utilize post-processors for lathes and mills
Prepare process and tool sheets
Analyze cycle times through time study simulation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2495 - Machine Tool Technology Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Machine Tool Technology industry. The student is responsible for locating and arranging the internship site. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Instructor approval and completion of at least 50% of your degree or diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4

MACH 2500 - Introduction to Swiss-Style Machining (3)

This course will expose students to the basics of CNC Swiss Style Lathes. The student will be introduced to safety procedures and the nomenclature of CNC Swiss Style Lathes. Basic CNC turning, milling, and drilling procedures will be reviewed. Comparisons of CNC turning as opposed to CNC Swiss-Style training will be examined. Basic concepts of the setup and operation of CNC Swiss Style Lathes will be explored and common G&M codes will be identified. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Graduation from or concurrent enrollment in a 2 year Machine Tool Technology Program or a minimum of 2 years of related work experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine history of Swiss style turning
Examine Swiss style turning center capabilities
Examine Swiss style turning center safety
Identify CNC Swiss turning center components
Examine machine coordinate systems/axis orientation
Identify machine control and its functions
Identify work holding devices
Identify cutting tool holders
Identify cutting tools
Explain Swiss turning center programs
Explain automatic stock feeding
Examine tool offset methods
Complete basic machine setup to produce simple parts
Produced simple machined parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2505 - CNC Swiss-Style Lathe Setup and Operation (3)

This course will further expose students to the setup of CNC Swiss Style Lathes, tooling, and the bar feeder. The student will setup and operate CNC Swiss-Style Lathes. Parts will be machined from selected programs. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH2500 plus graduation from or concurrent enrollment in a 2 year Machine Tool Technology Program or a minimum of 2 years of related work experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine programming codes

Complete setup for main and sub-spindle collets
Complete setup for guide bushings
Complete setup for O.D. cutting tools
Complete setup for I.D. cutting tools
Complete setup for live tooling
Complete setup for bar feed
Complete setting tool offsets
Complete tapping operations
Complete cross drilling operations
Complete milling operations
Complete thread cutting operations
Complete setup teardown

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2510 - CNC Swiss-Style Lathe Programming (3)

This course will require students to write and produce programs for CNC Swiss Style Lathes. The student will also produce projects on the CNC Swiss Style Lathes using these programs. Setup and cycle reduction time will also be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MACH2505 plus graduation from or concurrent enrollment in a 2 year Machine Tool Technology Program or a minimum of 2 years of related work experience

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify G&M programming codes
Examine program format
Identify program creation format
Prepare simple/basic programs
Complete manual program input
Use program creation software
Prepare multiple axis programs
Complete loading programs into control
Setup machine to produce parts
Complete program edits
Verify programs
Identify alarm codes
Complete tool offsets operations
Complete parts to specifications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2520 - Mazak CNC Mazatrol Programming (3)

This course will familiarize students with the Mazak Mazatrol programming system. Electronic Industries Association (EIA) (G and M code) is the standard programming language for CNC (Computer Numeric Control) machine tools, whereas Mazatrol is a Mazak specific conversational language. Students will be trained to use Mazatrol to create programs for Mazak machining and turning centers. Mazatrol allows for machine readable code to be created quickly and efficiently.

Prerequisite: MACH1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare CAD/CAM EIA programming to Mazatrol programming processes
Compare CAD/CAM EIA formats to Mazatrol formats
Create Mazatrol machining center programs
Create Mazatrol turning center programs
Perform on the floor programming with Mazatrol
Simulate verification of program in Mazatrol
Adjust Mazatrol program parameters
Perform dry run on Mazatrol programs
Articulate safe and proper use of Mazak probing tools and parts
Create tool paths for different materials and hardnesses
Establish parameters for surface finishes on parts

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: Lecture: 2 Lab: 1

MACH 2525 - Mazak CNC Turning Center (3)

This course will allow students to increase their skills in Mazak CNC (Computer Numeric Control) Turning Center applications. Emphasis will be placed on programming, tooling requirements, machine setup, and machine operation and safety. Mazak processes will be taught using the Mazatrol programming language.

Prerequisite: MACH1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify EIA (G and M code) and Mazatrol differences
Perform on the floor programming with Mazatrol
Demonstrate proper use of Mazak turning center control panel technology
Simulate verification of program
Measure and store X and Z part axis zero
Demonstrate measuring tool lengths using probe system
Demonstrate measuring tool lengths and diameters manually
Complete tool turret setup with correct tool implementation
Facilitate tailstock and live center use
Facilitate chuck boundaries and safety parameters
Adjust Mazatrol program parameters through editing screens
Perform dry run on Mazatrol programs with the control
Produce machined parts while controlling offsets for size
Inspect machined parts
Document part measurements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: Lecture: 2 Lab: 1

MACH 2530 - Mazak CNC Machining Center (3)

This course will allow students to increase their skills in Mazak CNC (Computer Numeric Control) Machining Center. Emphasis will be placed on programming, tooling requirements, machine setup, and machine operation and safety. Mazak processes will be taught using Mazatrol and Electronic Industry Association (EIA) (G and M code) programming languages.

Prerequisite: MACH1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify EIA (G and M code) and Mazatrol differences

Perform on the floor programming with Mazatrol
Demonstrate proper use of Mazak mill control panel technology
Simulate verification of program
Measure and store X and Y part axis zero
Demonstrate measuring tool lengths using probe system and EZ set program
Demonstrate measuring tool lengths manually
Complete tool carousal setup with correct tool implementation
Adjust Mazatrol program parameters through editing screens
Adjust EIA (G and M Code) program parameters
Perform dry run on Mazatrol programs with the control
Perform dry run on EIA programs with the control
Produce machined parts while controlling offsets for size
Inspect machined parts
Record part measurement documentation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: Lecture: 2 Lab: 1

MACH 2600 - Introduction to Quality Assurance (3)

This course will introduce the student to the basics of metrology. The reading of blueprint specifications and tolerance requirements will be discussed. Students will learn proper measuring techniques using precision hand tools.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine metrological concepts
Measure parts using direct measurement hand tools
Measure parts using transfer measurement hand tools
Interpret title block information
Interpret blueprint lines based on the alphabet of lines
Interpret blueprint views
Analyze part shapes
Analyze blueprint dimensions
Analyze blueprint tolerances

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2610 - Inspection Processes (3)

This course will introduce the student to the concepts of statistical sampling and industry measuring methods. Students will examine setups and fixtures. Advanced measuring techniques will be introduced.

Prerequisite: MACH2440 or MACH2600 or METS1050 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze data sampling methods
Develop a data sample
Interpret blueprint dimensions
Interpret blueprint specifications
Demonstrate appropriate measuring tool selection
Apply fixturing and setup techniques
Utilize proper measuring technique
Report measurement findings per industry standards
Analyze reported measurements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2615 - Inspection Equipment and Techniques (3)

This course will introduce the student to the maintenance and operation of advanced measurement equipment such as the CMM (Coordinate Measuring Machine) optical comparator, and vision systems. Programming and reporting software for this equipment will also be studied.

Prerequisite: MACH2610 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify parts and controls of measuring equipment
Demonstrate proper maintenance of measuring equipment

Utilize optical comparator to manually inspect parts
Utilize CMM (Coordinate Measuring Machine) to manually inspect parts
Utilize vision system to inspect parts
Program optical comparator to inspect parts
Program CMM (Coordinate Measuring Machine) to inspect parts
Program vision system to inspect parts
Generate inspection reports according to industry standards

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2620 - Quality Systems (3)

This course will introduce the student to the Quality Control systems that are in use in today's modern manufacturing environment. Deming, Total Quality Management (TQM), Management By Objective (MB), Six Sigma, Lean, and International Organization for Standardization (ISO) will be covered.

Prerequisite: MACH2615 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the standards put forth by the Deming Principle
Identify the principles of Total Quality Management (TQM) systems
Identify the principles of Management By Objectives (MBO) systems
Indentify principles of Six Sigma systems
Generate Six Sigma reports
Identify principles of Lean Manufacturing systems
Generate Lean System reports
Identify principles of International Organization for Standardization (ISO) systems
Generate International Organization for Standardization (ISO) reports

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MACH 2625 - Computer Analysis of Manufacturing Data (2)

The student will be exposed to advanced measuring techniques for collecting data from manufacturing processes. Methods of documenting, analyzing and reporting data utilizing Microsoft Excel and MiniTab software will be practiced. Participants will also employ process capability studies, hypothesis testing, and design of experiment techniques to perform measurement system and data analysis.

Prerequisite: Recommended: MACH2440 or Instructor Approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate basic proficiency in Excel software operations
Demonstrate proper data collection techniques
Apply principles of descriptive statistics to collected data
Analyze Excel charts
Demonstrate basic proficiency in MiniTab software operations
Analyze MiniTab charts using collected data
Perform a process capability study
Demonstrate Hypothesis Testing techniques
Demonstrate proper Design of Experiment techniques
Perform measurement system analysis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MAST - Medical Assistant

MAST 1010 - Medical Terminology (2)

This course is designed to cover word analysis, spelling and usage of word roots, suffixes, prefixes and abbreviations common to the medical profession. Emphasis will be placed on spelling and constructing medical terms and pronunciation.

Prerequisite: Qualifying score on reading assessment test or ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Define basic medical word parts
Construct correct medical terms
Spell medical terms
Articulate medical terminology
Define medical terms for specific body systems
Define abbreviations common to the medical profession
Utilize reference materials
Manage time to meet deadlines

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

MAST 1015 - Medical Assistant Administrative I (3)

This course introduces the student to a wide variety of medical office duties that are commonly performed by the Medical Assistant. Students will be introduced to the electronic medical record, the role healthcare team, legal and ethical implications of the profession, computer, telecommunications, and documentation.

Prerequisite: Admission into the Medical Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify Medical Assistant Scope of Practice
Explore medical ethics as it relates to the Medical Assistant
Demonstrate communication skills needed in the ambulatory care setting
Utilize technology in the ambulatory care setting
Analyze the physical environment of the ambulatory care setting
Demonstrate the use of telecommunication equipment
Describe scheduling system utilization
Model professionalism in the ambulatory care setting
Discuss impact of Health Insurance Portability Accountability Act (HIPAA) regulations in the ambulatory care setting
Demonstrate proficiency in initial applications of Total Practice Management System
Identify legal aspects of documentation
Define items that must be documented
Implement methods of documentation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MAST 1020 - Lab I (4)

This course is designed to introduce the student to the clinical laboratory. Basic aspects of laboratory safety, use and maintenance of laboratory equipment, quality assurance, and controls will be taught. In a simulated lab students will perform urinalysis tests, urine, throat and wound cultures, wet prep, and gram staining.

Prerequisite: Admission into the Medical Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the role of the medical assistant in the lab
Identify the types of laboratories
Demonstrate safety in the lab
Explore the lab tests
Identify most common lab tests ordered
Demonstrate universal precautions
Determine the type of microbe that cause disease
Practice microbiological techniques
Demonstrate competency in lab procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

MAST 1030 - Clinical Procedures I (4)

This course is designed to teach the fundamentals of medical assisting in all types of ambulatory care settings. These fundamentals include: obtain and record a patient history, obtain vital signs, appropriate documentation, prepare for and assist with patient examinations, perform sterilization techniques and assist with procedures and minor office surgeries. The student will also follow medical and surgical asepsis and microbial control.

Prerequisite: Admission into the Medical Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Incorporate principles of aseptic technique
Prepare examination and treatment areas
Incorporate principles of infection control
Coordinate maintenance of the examination and treatment areas
Obtain a complete patient's medical history
Measure accurate vital signs, heights and weights on adults
Measure accurate length, heights, weights, head and chest circumference on children
Set up for physical examination procedures
Assist with the physical examination procedures
Identify instruments used in a general physical exam
Identify instruments used in a special treatment
Describe sensory system exam and procedures
Perform within scope of practice
Demonstrate accurate medical documentation
Explain methods of disease prevention
Explain methods of health promotion
Demonstrate therapeutic communication skills

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 3

MAST 1045 - Pharmacology (3)

This course provides the student with an introduction to basic pharmacology. Drugs are presented within the major drug classifications along with general drug actions, common adverse reactions, contraindication, precautions, and interactions related to each body system. Emphasis is placed on ways to promote an optimal response to therapy, how to monitor and manage adverse reactions, and important points to keep in mind when educating patients about the use of these drugs. Special consideration for pediatric, obstetric and geriatric patients will be emphasized. Students will understand patient rights, education and safety.

Prerequisite: Admission into the Medical Assistant Program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define pharmacology
Explore the history of pharmacological development
Determine different categories of medications
Identify drug classifications according to body systems
Identify medications according to the classifications in the body systems
Explore resources used in medication management
Discuss non-pharmacological aspects to drug therapy
Acquire knowledge in patient teaching

Examine patient safety considerations in medication management

Text and References: A list oftextbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MAST 1060 - Documentation for Health Care Professionals (2)

This course is designed to give students an overview of charting, guidelines, and tips on improving documentation skills for Health Care Professionals. Students will study basic grammar, sentence structure, and writing skills for documentation as well as professional and regulatory requirements, and confidentiality.

Prerequisite: Qualifying score on keyboarding assessment test OR CPLT1000 and ENGL2121

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify legal aspects of documentation
Identify professional and regulatory requirements
Practice methods of documentation
Identify items that must be documented
Define SOAP (Subjective, Objective, Assessment, and Plan) notes
Demonstrate techniques of condensing information

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

MAST 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the

expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

MAST 2000 - Fundamentals of Radiographic Imaging (2)

This course is designed to give students an overview of limited radiology technology and the importance it plays in the medical field. It will provide students with the necessary information to understand the following: medical terminology as related to the specialty of radiology, the design and proper use of x-ray equipment, the principles of radiation safety with protection for both the operator and the patient, and the importance of good, safe working habits. It will also prepare students for the ARRT (American Registry of Radiologic Technologists) Limited Scope Examination for x-ray operators. The lab is situated off-campus.

Prerequisite: BIOL2045 or BIOL2115 or HLTH1010

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define ionizing radiation
Describe the formation of the x-ray image
Describe the effects of radiation to the human body
Describe the ALARA (As Low As Reasonably Achievable) program
Position a human body part to produce an x-ray image of that part
Evaluate an x-ray image to ensure it is diagnostic

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1.5 lab: 0.5

MAST 2015 - Medical Assistant Administrative II (3)

This course strengthens the knowledge and skills covered in Medical Assistant Administrative I. Students are introduced to clinic billing, coding, clinic accounting, health insurance, and written communication.

Prerequisite: MAST1015

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Coordinate appointment scheduling
Illustrate the purpose of medical records
Compose types of written communication
Examine role of filing in the ambulatory care setting
Investigate medical insurance coding procedures
Investigate financial management of the ambulatory care setting
Model professionalism in the ambulatory care setting
Manage appointments
Process insurance claims
Perform bookkeeping procedures
Demonstrate proficiency in administrative functions of Total Practice Management System
Identify professional and regulatory requirements for documentation
Identify trend of computerized documentation
Practice methods of documentation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MAST 2021 - Lab II (2)

This course is designed to build upon the skills acquired in Lab I. Students will learn how to perform 12-lead Electrocardiogram (ECG). This course covers immunology, clinical chemistry, and microbiology. In alignment with American Association of Medical Assistants (AAMA) Safety and Scope of Practice are thoroughly discussed. The students will perform waived testing according to the Clinical Laboratories Improvements Amendment guidelines.

Prerequisite: MAST1020, concurrent enrollment in MAST2030 and must be taken semester before MAST2040, EMSV1155 or concurrent enrollment in EMSV1155

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the medical assistant's responsibility to the patient in terms of quality of care
Demonstrate competency in lab procedures
Exercise professionalism within the Scope of Practice of the Medical Assistant
Discover the theory of electrocardiography
Exercise the process of electrocardiography
Demonstrate competency in performing electrocardiogram
Convey safety in the lab setting
Apply Clinical Laboratories Improvements Amendment (CLIA) guidelines to practice in the lab setting
Utilize immunology in lab setting
Utilize hematology in the lab setting
Utilize clinical chemistry in the lab setting
Utilize microbiology in the lab setting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MAST 2035 - Clinical Procedures II (5)

This course builds on the skills attained in Clinical Procedures I. Critical thinking skills related to medication administration is a course focus. Safe and accurate drug administration utilizing parenteral and non-parental routes are taught as well as other special procedures. For example, successful course completion requires students to achieve 90% or higher on a dosage calculation exam. In addition, the course reviews stress management, pediatric care, geriatric care, rehabilitation, and therapeutic modalities. Emergency preparedness will be covered along with the fundamental of working within the electronic medical record. Service Learning is a part of this course.

Prerequisite: MAST1030

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Calculate dosage of medications with conversions of measurement
Demonstrate safety when calculating medications
Explore types of diagnostic testing
Demonstrate ability to communicate with patients
Explore methods of patient education
Discuss basic principles of respiratory testing
Explore responsibilities during medical office emergencies
Identify several approaches to managing stress in the ambulatory care setting
Discuss patient care relating to life threatening illnesses
Utilize emergency preparedness training in the ambulatory care setting
Demonstrate pediatric care in the ambulatory care setting
Identify expected physiologic changes that occur as part of the aging process

Describe prevention techniques for complications arising from age related disorders
Explain the importance of communication with older adults
Implement rehabilitation medicine in the ambulatory care setting
Explore Pharmacology
Demonstrate safe medication administration
Explore the Scope of Practice for the medical assistant related to drug administration
Manage preparations surrounding diagnostic testing
Perform routine maintenance of clinical equipment
Create an electronic medical record using training software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

MAST 2041 - Practicum (6)

The focus of this clinical experience is to apply Medical Assistant skills in the ambulatory care setting to patients across the lifespan. Students will work under the supervision of clinical personnel. The emphasis is on delivering safe, competent care. Students will observe and/or participate in clinical and laboratory procedures and treatments. Ethical and legal obligations of the Medical Assistant are integrated throughout the experience. This practicum is an unpaid experience in an ambulatory care setting. This experience facilitates performance within the Scope of Practice for the Medical Assistant student.

Prerequisite: MAST2020 and MAST2035.Cleared Criminal Background study. Negative Mantoux or negative chest x-ray within 30 days of start of course. Current CPR (Health Care Providers or Professional Rescuer). Completed Immunization form (Hepatitis B, Varicella, Tetanus, MMR)

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate rooming procedures
Obtain patient history
Obtain accurate vital signs
Prepare patient for procedures and treatments
Demonstrate respect for diversity in approaching patients and families
Instruct patients in health maintenance and disease prevention
Demonstrate knowledge of clinical skills related to Anatomy and Physiology
Apply mathematics
Practice Standard Precautions
Apply Infection Control in the ambulatory care setting
Demonstrate communication methods
Observe Clinical Laboratory Improvement Amendments waived testing
Execute data management
Demonstrate proficiency in Front Desk management
Observe business office functions
Utilize different types of insurance

Apply managed care policy and procedures
Perform within the Scope of Practice of the Medical Assistant
Ascertain the correct procedural code
Demonstrate Health Insurance Portability and Accountability Act (HIPAA) procedures
Distinguish legal aspects of practice
Implement a plan of professional ethics
Apply ethical behaviors
Evaluate safety in the working environment
Apply safety procedures
Acquire necessary resources to function as a Medical Assistant
Identify location of emergency equipment
Execute procedures in the lab

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 6

MATH - Math

MATH 0950 - Essential Skills for Math Pathways (2)

This course focuses on developing number sense and by-hand computational skills with whole numbers, fractions, decimals, and integers. These skills are a necessary foundation for employment, higher level mathematics courses, and everyday life. Students will also develop confidence in their mathematics skills through implementing a variety of strategies and study skills specific to mathematics.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop an improved number sense in regards to whole numbers, fractions, decimals, and integers
Utilize math specific strategies and techniques for homework, time-management, note-taking, and exam studying/taking
Demonstrate the importance of attendance and homework in a mathematics course Use appropriate resources including on-campus and/or online Represent whole numbers, fractions, decimals and integers in mathematical and real world situations
Interpret whole numbers, fractions, decimals and integers in mathematical and real world situations
Compare numerical values represented as whole numbers, fractions, decimals, mixed numbers, and integers
Convert between equivalent fractions, quotients, decimals, and mixed numbers
Round whole numbers, fractions, decimals, and mixed numbers
Estimate sums, differences, products, and quotients involving whole numbers, fractions, decimals, mixed numbers, and integers
Demonstrate usage of the four mathematical operations (add, subtract, multiply, divide) on whole numbers, fractions,

decimals, and integers
Simplify numeric expressions involving whole numbers, fractions, and decimals by applying order of operations
Solve introductory application problems involving whole numbers, fractions, decimals and/or integers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 0

MATH 1007 - Math for the Trades (2)

This course explores basic math skills in practical contexts required by students in the trade programs, including skills with integers, fractions, mixed numbers, and decimals. The course would emphasize doing rather than theory, application rather than memorization, self-confidence, building mathematical reasoning, and practical use of tools and formulas.

Prerequisite: Qualifying score on math assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform basic math operations with integers, fractions, mixed numbers and decimals
Convert numbers between fraction, mixed number and decimal form
Simplify complex fractions
Solve problems using estimation
Measure using hand tools
Solve problems using exponents and roots
Solve ratio, rate, proportion, and percentage problems
Interpret diagrams and technical specification sheets
Test solutions for reasonableness
Convert measurements between metric and US Customary Units
Solve basic application problems
Evaluate formulas and expressions
Solve problems involving geometric figures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

MATH 1020 - Geometry and Trigonometry (2)

This course includes practical applications of basic definitions and properties of plane geometry, trigonometric functions, the law of sines, the law of cosines and vectors.

Prerequisite: MATH1500

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve line, angle, and triangle problems
Solve Pythagorean theorem problems
Solve polygon perimeter and area problems
Solve circle, chord, circumference, sector, segment, and area problems
Solve line/circle intersection problems
Solve sine, cosine, and tangent problems
Solve right and oblique triangle application problems
Solve Law of Sines and Law of Cosines problems
Solve vector problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

MATH 1050 - Math Pathways Plus for College and Careers (4)

This course is designed for students to establish a foundation for problem solving and critical thinking used in college level mathematics and career applications. Topics include practical applications of real numbers, geometry, measurement, data analysis, and algebraic equations. This course is taken at a slower pace than MATH1060, so that strategies for learning mathematics and a review of basic skills can be integrated throughout.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 with a grade of "C" or better and Qualifying score on math assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Convert within and between metric and U.S. customary measures of length, mass, capacity, and temperature

Calculate measurements of plane and solid geometric figures
Apply appropriate units and scales for problem situations involving measurement
Apply properties of parallel, perpendicular, and intersecting lines, including properties of angles formed by these lines, to solve problems
Apply properties of angles, including corresponding, exterior, interior, vertical, complementary and supplementary angles, to solve problems
Apply properties of congruent and similar figures to solve problems
Apply properties of triangles to solve geometric problems
Solve real-world and mathematical geometric problems using algebra
Evaluate various data representations
Explain the uses of data and statistical thinking to draw inferences, make predictions and justify conclusions
Apply measures of central tendency and theoretical probability to a set of data
Apply ratios, rates, and proportions to model and solve real world situations
Solve problems using direct variation
Use algebraic equations to model and solve real world problems involving percents
Evaluate expressions and functions
Generate equivalent forms of algebraic expressions
Solve problems in various context using linear equations, inequalities and functions
Develop a deeper understanding of real number properties, and their use, so that they may be applied to solve mathematical and career oriented problems
Use inductive reasoning
Review basic operations with integers, fractions, and decimals
Estimate the expected outcome of problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

MATH 1060 - Math Pathways for College and Careers (3)

This course is designed for students to establish a foundation for problem solving and critical thinking used in college level mathematics and career applications. Topics include practical applications of real numbers, geometry, measurement, data analysis, and algebraic equations.

Prerequisite: Qualifying score on math assessment test and Qualifying score on reading assessment test

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Convert within and between metric and U.S. customary measures of length, mass, capacity, and temperature
Calculate measurements of plane and solid geometric figures
Apply appropriate units and scales for problem situations involving measurement
Apply properties of parallel, perpendicular, and intersecting lines, including properties of angles formed by these lines, to solve problems
Apply properties of angles, including corresponding, exterior, interior, vertical, complementary and supplementary angles, to solve problems
Apply properties of congruent and similar figures to solve problems

Apply properties of triangles to solve geometric problems
Solve real-world and mathematical geometric problems using algebra
Evaluate various data representations
Explain the uses of data and statistical thinking to draw inferences, make predictions and justify conclusions
Apply measures of central tendency and theoretical probability to a set of data
Apply ratios, rates, and proportions to model and solve real world situations
Solve problems using direct variation
Use algebraic equations to model and solve real world problems involving percents
Evaluate expressions and functions
Generate equivalent forms of algebraic expressions
Solve problems in various context using linear equations, inequalities and functions
Develop a deeper understanding of real number properties, and their use, so that they may be applied to solve mathematical and career oriented problems
Use inductive reasoning

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MATH 1500 - Beginning Algebra (3)

This course includes practical applications of basic algebra from signed numbers through solving and graphing equations plus solving systems of equations and formulas with applied problems.

Prerequisite: Qualifying score on math assessment test OR MATH1050 or MATH1060 with a grade of "C" or better.

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write and solve real-world problems using linear functions
Translate between graphs, tables, and symbolic representations
Add, subtract, and multiply polynomials
Factor polynomials
Simplify, add, subtract, multiply, and divide rational expressions
Simplify, add, subtract, multiply radical expressions
Evaluate polynomial, rational and radical expressions
Solve rational equations
Solve radical equations
Solve quadratic equations using factoring, square root property and quadratic formula
Use algebra to solve geometric problems of plane and solid geometric figures
Solve linear equations and inequalities
Solve systems of equations by the graphing, addition and substitution methods
Solve systems of linear inequalities by graphing
Calculate the slope and intercepts of a line
Graph linear functions and inequalities by plotting points and using slope-intercept form
Graph non-linear equations
Apply laws of exponents

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MATH 1650 - Mathematical Literacy (4)

In this course, students explore tools to decipher, solve, and explain mathematical problems encountered in college coursework and daily life. Key mathematical concepts of this course include numerical reasoning, proportional reasoning, algebraic reasoning, geometry, data representation and function analysis. Emphasis will be on modeling, interpretation, and problem solving in a variety of contexts. This course prepares students for MATH2050 Applications of Quantitative Reasoning or MATH2150 Introduction to Statistics.

Prerequisite: Qualifying score math assessment test OR MATH1050 OR MATH1060 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply concepts of numeracy in multiple contexts
Analyze ideas, patterns, and multistep problems
Utilize the connections between various types of problems
Develop strategies to find mathematical processes
Solve problems with proportional reasoning
Demonstrate flexibility with mathematics through various contexts and modes of technology
Demonstrate the ability to utilize various representations of information
Utilize formulas and algebra to investigate, represent, and solve problems
Develop mathematical rules using real-life situations
Demonstrate knowledge of the connections between numerical and algebraic methods
Construct equations to solve problems involving unknown or variable quantities
Demonstrate the use of technology in problem solving
Develop strategies to persevere until the desired result is achieved

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 0

MATH 1700 - Intermediate Algebra (3)

This course includes practical applications of advanced algebra topics: polynomials and factoring, quadratic equations, exponents and radicals, radicals equations and formulas, plus common and natural logarithms.

Prerequisite: Qualifying score on math assessment test OR MATH1500 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use set notation and interval notation
Determine the union and intersection of sets
Evaluate functions
Differentiate between relations and functions
Solve absolute value equations and inequalities
Determine the inverse and composition of functions
Perform operations using complex numbers
Solve systems of equations
Graph linear and quadratic functions
Simplify complex fractions
Solve quadratic equations by factoring and the square root method
Use the quadratic formula to solve equations
Simplify rational exponents and expressions
Divide polynomials
Rearrange literal equations
Solve systems of equations using Cramer's Rule and determinants
Solve radical, exponential, and logarithmic equations
Solve linear programming problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MATH 2050 - Applications of Quantitative Reasoning (3)

The focus of this course is on using quantitative information to think, reason and communicate more effectively. Students are presented with real world problems, and then asked to translate them into mathematics, and solve them. Topics include thinking critically, numbers in the real world, financial management, statistical reasoning, probability, and mathematical modeling. Examples and applications will be drawn from a wide range of disciplines and everyday situations including problems involving geometry, proportional reasoning, and percentages. This course will be a mix of lecture, individual work, and team-based problem solving. Student participation and active learning will be stressed. This course meets Minnesota Transfer Curriculum (MnTC) goal areas 2 and 4.

Prerequisite: Qualifying score on math assessment test OR MATH1650 OR MATH1700 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze real world data through descriptive statistics, correlations, and regression lines
Analyze misuses of statistics and data representation
Apply concepts of geometry to optimize solutions for real world situations
Apply concepts of personal finance to make informed decisions
Analyze uses and abuses of percentages, ratios, rates, and proportions
Apply inductive and deductive reasoning to solve problems
Apply function notation to model real world applications
Solve problems using a variety of problem solving strategies
Analyze ideas, patterns, and multi-step problems
Model the connections between various types of problems
Gather information from a variety of sources
Organize statistical information from a variety of sources
Analyze statistical information from a variety of sources to make informed decisions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MnTC Goal Areas: 2 & 4.

MATH 2150 - Introduction to Statistics (3)

This is an introductory course in descriptive statistics, probability, and inferential statistics topics include statistical theory and experimental design, data analysis, measures of central tendency, measures of dispersion, basic probability, binomial and normal distributions, regression analysis and correlation, inference, and sampling methods. Additional topics may include chi-squared tests and analysis of variance.

Prerequisite: Qualifying score on math assessment test OR MATH1650 or MATH1700 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use vocabulary and formulas integral to statistics
Organize data
Analyze data
Construct statistical functions and graphs
Interpret statistical functions and graphs
Identify misleading graphs
Calculate measures of central tendency and dispersion
Interpret measures of central tendency and dispersion
Utilize counting techniques and probability formulas
Calculate mean, variance, and standard deviation of a binomial distribution
Identify properties of normal distribution
Apply the Central Limit Theorem to statistical inference problems
Perform hypothesis testing
Use basic principles of linear regression and correlation

Determine appropriate statistical tests to apply

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 4.

MATH 2200 - College Algebra (4)

Topics covered in this course include: concepts of algebra-real numbers, exponents, polynomials, and rational expressions; equations and inequalities; functions and graphs; polynomial and rational functions; exponential and logarithmic functions; conic sections; systems of equations and inequalities; sequences and probability.

Prerequisite: Qualifying score on math assessment test OR MATH1700 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform operations with complex numbers
Determine the domain, range, and symmetries of a function
Graph functions using transformations
Perform operations with functions
Determine the inverse of a function
Graph polynomial and rational functions
Solve polynomial, exponential, and logarithmic equations
Solve systems of linear equations in two and three variables
Solve nonlinear systems of equations
Solve inequalities and systems of inequalities
Perform operations with matrices
Solve problems involving permutations, combinations, and probability
Determine the equation for various conic sections
Graph conic sections

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

MnTC Goal Areas: 4.

MATH 2250 - Precalculus with Trigonometry (5)

This course will provide the necessary foundation for a standard calculus course. Topics include functions and their equations, exponential and logarithmic functions and their applications, right triangle trigonometry, law of sines and law of cosines, trigonometric functions and their inverses, trigonometric identities and equations, difference quotients, vectors, polar coordinates, and parametric equations. Students will also utilize their graphing calculator in solving and graphing functions.

Prerequisite: Qualifying score on math assessment test OR MATH2200 with a grade of "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize a graphing calculator for various tasks
Graph advanced functions, vectors, polar coordinates, and parametric equations
Model a given data set or situation using the appropriate function
Compute trigonometric function values
Perform algebraic operations and compositions on functions
Apply function transformations
Apply fundamental theorems relating to polynomials
Solve higher degree polynomial equations and inequalities
Prove trigonometric identities
Convert between radian and degree measure
Determine the domain, range, and the inverse of trigonometric functions
Solve trigonometric equations
Interpret difference quotients
Analyze a vector's form, magnitude, and direction
Perform vector operations
Interconvert polar coordinates, rectangular coordinates, and complex numbers
Evaluate parametric equations for given values of a parameter
Solve mathematical application problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5

MnTC Goal Areas: 2 & 4.

MATH 2300 - Calculus I (5)

This course covers the derivative of functions of a single variable and an introduction to the definite and indefinite integrals. Topics include limits, continuity, derivatives and their applications, the Mean Value Theorem, curve sketching, antiderivatives, Fundamental Theorem of Calculus, and integrals. Students will also utilize their graphing calculator in solving and graphing functions.

Prerequisite: Qualifying score on math assessment test OR MATH2250 with a grade of a "C" or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize a graphing calculator for various tasks
Evaluate limits of functions and difference quotients
Apply the concept of a tangent to rates of change problems
Analyze values of continuity or discontinuity in functions
Evaluate the derivative of a given function using the product, quotient, and chain rule
Calculate the derivative of a function given implicitly
Perform higher degree differentiation
Project function behavior using the first and second derivative of a function
Utilize critical points in curve sketching
Apply the concepts presented in the Mean Value Theorem, L'Hopital's Rule, and Newton's Method
Relate derivatives to velocity, acceleration, and speed
Evaluate antiderivatives
Develop the concept of an indefinite integral as the antiderivative
Evaluate definite integrals using antiderivatives
Relate the Fundamental Theorem of Calculus to differentiation and integration
Apply the theory of calculus in application problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 5

MnTC Goal Areas: 2 & 4.

METS - Manufacturing Engineering Technology

METS 1000 - Computers in Manufacturing (3)

This course is for those currently working or studying to work in manufacturing areas that need to learn basic computer skills that relate to work in the manufacturing environment. Topics covered include basic computer hardware, operating systems, Internet research, word-processing, spreadsheets, visual presentations, simulation and CAD.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Contribute to group projects
Compose various manufacturing documents with associated software

Identify hardware requirements for common software
Locate engineering information
Use search engines
Evaluate projects using simulation software
Identify the components of the computer
Manage project files
Create complete CAD illustrations using appropriate software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

METS 1020 - Industrial Manufacturing Processes (3)

This course is designed to introduce the student to manufacturing methods commonly used to produce industrial parts. The information in this course is useful to students in most technical occupations. Study includes selecting a process that will produce parts with optimum physical properties at the lowest cost.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine machine tool operations
Compare assembling methods
Explain finishing processes
Explain molding process
Explain casting methods
Describe the nature of engineering materials
Describe the Manufacturing industry
Examine process design and control
Explain forming methods

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

METS 1050 - Quality Control (3)

This course introduces students to basic quality control principles, techniques, and procedures used by organizations to assure customer satisfaction of a product and/or service. This course includes quality control concepts utilizing common measurement methods and tools used for inspection.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe basic principles used in quality
Describe causes of variation
Use tools of quality
Produce frequency histograms and checksheets
Produce variable control charts
Process attribute control charts
Interpret machine and process capability
Apply quality problem-solving tools
Define elements of a total quality management system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

METS 1150 - M-Powered Internship (2)

This 80-hour course provides students with a prescribed on-the-job educational experience in their area of emphasis: CNC (computer numerical control) machine operator, precision metal stamping, quality, research and development lab and manufacturing process. Students receive Performance Achievement Records (PAR's) that outline the curriculum and are evaluated against these predetermined curriculum objectives by the employer.

Prerequisite: METS1105 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Verify parts/work pieces for quality
Maintain/service equipment related to assigned functions
Complete job planning activities

Prepare work site, equipment and materials related to assigned duties
Demonstrate troubleshooting problems/operations
Demonstrate awareness of applicable OSHA standards for safe operation during assigned duties
Describe appropriate customer service
Operate safely mechanized equipment related to assigned functions
Apply knowledge of federal and international regulations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 2

METS 1200 - Industry Practices and Procedures (3)

This course will familiarize the learner with a variety of established practices and procedures. This course introduces widely followed environmental procedures prescribe by State and Federal laws. An emphasis on established safety, preventive maintenance and good industrial practices will be experienced throughout this course. A focus on accepted workplace rules, behavior and professionalism, material handling, hand tool identification and proper usage will be discussed. The importance of utilizing emerging computer software and mobile based applications will be highlighted. This course is appropriate for those seeking employment within technical skill fields.

Prerequisite: Qualifying score on computer literacy assessment test OR METS1000

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain key terms and concepts and the importance of safety-related work practices
Describe confined spaces terminology and concepts
Identify the elements contained in lockout/tagout procedures
Utilize various software applications found in the workplace
Review Safety Data Sheet systems related to hazard communication programs with regard to the labeling of hazardous materials
Demonstrate proper use of hand tools
Recognize the importance of machine guarding to preventing injury
Utilize workplace based mobile applications
Recognize hazardous waste as per the Resource Conservation and Recovery Act (RCRA)
Demonstrate the ability to perform material handling techniques
Follow various professional communication protocol methods

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

METS 2000 - Engineering Design Principles (3)

This course covers the nature of design, rotary and linear motion components such as: levers, linkages, winches, chain, belt and sprocket drives, gear boxes and electric motors. Hydraulic and pneumatic actuators and limited rotation devices will be discussed. Various applications will be discussed and evaluated during the course. The student will get experience selecting mechanical drive components, bearings, and fasteners from various vendor catalogs. Students will work in teams to develop an assigned project.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use mathematical principles
Describe design process
Apply various units of measure
Identify assembly considerations
Study fluid power principles
Study electrical principles
Study mechanical drive principles
Solve power transmission ratios
Compare mass and weight

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

METS 2100 - Statics and Strength of Materials (3)

This course will introduce the student to the understanding and applications of applied physics. Items covered will include the use of calculators to solve algebra and trigonometry functions, vectoring equilibrium`s, stress, strain, deformations, moments of inertia and section modules, belt friction, thermal expansion, welded and bolted connections.

Prerequisite: Recommended: MATH2050 or MATH2200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve component-of-force problems
Solve equilibrium problems
Solve tensile stress problems
Solve shear stress problems
Solve stress and strain problems
Determine Bar X and Bar Y of an area
Calculate moments-of-inertia
Determine fastener location
Determine overall joint strength

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

METS 2800 - Manufacturing Engineering Technology Internship (1 - 16)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in "work-environment" areas of the curriculum. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. An `Internship Training Agreement` must be signed by the student, employer and the proper HTC representatives and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course goals addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Internship Training Agreement"

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1-16

MGDP - Graphic Design and Web Design

MGDP 1010 - Basic Drawing (3)

This course introduces the concepts of basic drawing, one and two point perspective, basic line illustration, freehand drawing, basic form and shading techniques as it applies to design and professional drawing.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply basic drawing principles
Classify shapes and forms
Demonstrate differences in perspective drawing
Construct 1pt, 2pt and 3pt perspective drawings
Explain light sources/depth of field
Sketch through free draw exercises to show development
Illustrate varieties of line techniques
Modify illustration styles based on commercial art images
Draw complex forms based on photographic images
Practice techniques of shading using different mediums
Reproduce color mixtures from memory and visually
Characterize drawings referring to self and others

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

MGDP 1120 - Introduction to Digital Photography (2)

Digital Photography will be broken down into key terms, physical parts and finished samples. Students will develop an understanding of setting up and customizing a digital camera (from a cell phone to a full DSLR). What makes a good photo and how to capture a good photo will be emphasized. Through setup of camera equipment students manage and maintain devices in working order. Create an image portfolio of samples displaying images in various conditions. Students will edit and organize batches of images for editing. Students will practice workflow (shooting an image then editing in post-production). Software is not limited to but primarily will be Adobe Creative Suite software.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply basic camera setup
Utilize camera capabilities to maximize quality resolution
Set up lighting for various scenes
Compare images for editing
Edit using Photo software (Lightroom, Camera Raw, Photoshop)
Navigate functions of the camera through ISO, Aperture, Manual modes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MGDP 1205 - Fundamentals of Graphic Design (3)

Graphic Design by definition is the applied art of designing any information, thought, idea or message for print or digital media. This course is designed to give the student the skills necessary to realize and value the graphic design industry. Course content includes historical overview, technological advances, common applications, basic design principles, layout and advertising concepts, typographical creativity, common tools and measuring systems. Whether the design is for print, web, or the multimedia, the student will explore the various design concepts that allow a thought, idea or message to be effectively communicated. Hands-on projects, demonstrations, experimentation, and case studies will be used in a positive industry driven learning environment.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore history of graphic design
Utilize picas and points measurement system
Identify type characteristics
Practice type and measuring identification on projects
Explore graphic design software
Differentiate mark-up and proofreading symbols on projects
Identify mark-up and proofreading symbols
Identify design principles
Recognize basic color theory
Demonstrate basic color theory on projects

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

MGDP 1210 - Graphic Design Essentials (3)

Graphic Design professionals need to learn how to use tools of their trade. This course concentrates on several aspects of those tools: printing and presentation of materials; industry processes of printing and bindery as it pertains to finished printed materials; and color theory for design purposes. The student will learn on how to use the various printers and output devices in the Graphic Design department; use mounting materials and trimming devices for presentation purposes; and various color models which they will apply to their design concepts throughout their coursework.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify tools used in Graphic Design
Produce printed materials
Assemble printed materials for presentation
Utilize print production equipment
Demonstrate use of various printing processes
Use printed materials and substrates
Apply color theory principles
Demonstrate use of color in design
Classify color models used in Graphic Design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

MGDP 1220 - Concepts in Creativity (3)

Having employees who can think creatively is one of the major challenges facing business and industry. This course will enable the student to develop their own creative learning skills. They will be faced with a series of problems and through research and creative exercises come up with their own visual solutions. This course will provide students

with the opportunity to discover their own creative strengths.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate "left brain /right brain" theories
Incorporate the role of perception in the creative process
Incorporate the role of valuing in the creative process
Incorporate the role of emotion in the creative process
Demonstrate vertical thinking
Demonstrate lateral thinking
Determine the roles of the creative process
Sketch creative ideas visually
Apply learned techniques when experiencing creative blocks
Use idea-starting techniques
Use creative-thinking techniques in group activities
Combine creative-thinking processes in designing a midterm project
Use creative thinking techniques to solve design problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3

MGDP 1230 - Photoshop (3)

This course is designed to give the student basic knowledge and understanding of Adobe Photoshop. The student will be introduced to the operation of tools used in Photoshop. Also included in this course will be an introduction to the use of layers (element layers, layer masks, grouping layers, blending layers and using underlying layers), channels (color and alpha), selections (making, saving and loading), masks (quick masks, saving and editing), color modes, tonal correction (levels and curves), resolution control, file formats, drop shadows, text effects, filters, preparing files for web publication and memory management.

Prerequisite: MGDP1205 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate familiarization of software functions
Identify layer elements
Construct files for output into varying medias
Construct the layers palette to combine images
Prepare the channels palette for various outputs
Create an image using advanced layer techniques

Demonstrate understanding of layer mask
Rearrange image histogram according to output needs
Modify layers to manage multiple parts of a file
Construct graphics using the pen tool
Determine image suitability for specific medias

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1240 - Illustrator (3)

This course is designed to give the student a basic knowledge and understanding of Adobe`s powerful vector based drawing program: Illustrator. Students will learn with step-by-step instruction, in-depth explanation, and creative projects. Skill building will occur through hands-on projects that cover Illustrator's powerful drawing functions, transformation features, patterns, brushes, filters, effects, graph creation, 3D, and print file preparation.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200 and MGDP1205 or concurrent or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore application window
Produce new document
Demonstrate use of drawing tools
Demonstrate use of transformation tools
Manipulate text and gradients
Compare patterns and brushes
Construct an illustration with layers
Investigate reshaping objects
Identify color and transparency features
Complete various types of graphs
Use symbols and graphic styles
Create 3-dimensional objects
Prepare document for prepress and print

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1250 - Web Design & Development I (3)

This course will introduce students to the basics of the latest version of HTML (hypertext markup language) and CSS (Cascading Style Sheets) while preparing them for more advanced studies. Students will learn HTML and CSS from the ground up, beginning with solid industry standard concepts. Instruction will stress designing for backward and forward compatibility, usability, and accessibility using standards-based markup. Topics include asset management, image optimization, web hosting, site planning, and the various tools web designers use to produce effective websites that meet industry demands. Students will plan, design and develop a basic web site utilizing HTML and CSS according to W3C (World Wide Web Consortium) standards.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply the basics of HTML markup
Apply text formatting through markup and styles
Construct pages using semantic markup
Use color for design schemes
Utilize images integrated with coding techniques for use in a web site
Demonstrate linking pathways
Compare ordered/unordered lists
Construct tables for tabular data
Utilize Cascading Style Sheets
Verify HTML code using a validator
Determine usability for web site design
Construct web site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1265 - XHTML (3)

This course will introduce students to the basics of XHTML (the web markup language) and prepare them for more advanced studies. Students will learn XHTML from the ground up, beginning with solid HTML concepts. Standards-based instruction will stress designing for backward and forward compatibility, usability, and accessibility. Students will develop and publish Web pages that include XHTML techniques while using tables, frames, and forms.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply the basics of the World Wide Web coding standards
Apply basic text formatting
Assign internal and external hyperlinks
Use color for design schemes
Utilize images integrated with coding techniques for use in a web site
Demonstrate linking pathways
Compare ordered/unordered lists
Construct tables for tabular data
Explore cascading style sheets
Verify XHTML code using a validator
Determine web usability to web site design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1310 - InDesign (3)

Adobe InDesign is a professional, industry standard page layout tool that allows you to integrate text and graphics with unparalleled precision and control. It provides seamless integration with Adobe's other production tools such as Photoshop and Illustrator. In this course you will cover basics of InDesign's workspace, document set-up, text formatting, layers, objects, frames, color models, graphic creation and modification, text linking and wrapping, bezier drawing techniques, tabs, tables, preflighting and printing.

Prerequisite: MGDP1205 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine software user-interface
Identify various palette features
Demonstrate page set-up
Construct new document
Review application preferences
Apply paragraph formatting
Review application tools
Define master pages
Define style sheets
Modify graphic elements

Practice linking text containers
Prepare document for pre-flighting

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1330 - Advanced Page Layout (3)

This is an intermediate level of digital page layout designed to solidify concepts learned in the introductory page layout courses. This project-based course takes basic skills to the next level and focuses on production standards for using digital page layout using Adobe InDesign. Students will be required to create various single and multi-page projects emphasizing their ability to utilize page design, color application, color separation, libraries, style sheets, multi-page/master pages, advanced typographical techniques, and various output devices. A final portfolio quality capstone project will culminate course work.

Prerequisite: MGDP1230, MGDP1235, MGDP1240, MGDP1310, and MGDP2010 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct industry standard page layouts
Diagnose matching type formatting attributes
Compile typography/printing measurements
Identify paragraph formatting
Differentiate style sheet components
Analyze component container attributes
Explore color separation techniques
Manipulate font management software
Identify preflight specifications
Investigate advanced paragraph features

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1340 - Advanced Photoshop (3)

This course will cover advanced Photoshop techniques. Included in the course will be combining layers, using layer comps; blend modes used in layers and tools; advanced masking techniques, image presentation, Camera RAW, software integration, output resolution issues, using file formats for various outputs, color modes, color correction for print media and digital formats, duotones, tritones and quadtones, special effects, 3D image manipulation, and vanishing points. Other timely topics will be covered as technology changes during the course structure.

Prerequisite: MGDP1230, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply the elements and principles of design when creating raster images
Apply knowledge of colortheory to projects
Utilize the tools for project time management
Create weekly assignments
Write evaluations for final project
Integrate raster and vector artwork
Combine multiple images into one working file
Compare image resolution for high resolution outcomes
Explore specific formats for color output
Optimize color and tone correction
Link Photoshop files with other Creative Suite software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1350 - Advanced Illustrator (3)

This course is designed to give the student a more in-depth working knowledge of Adobe Illustrator. The student will learn how to use more advanced Illustrator techniques in order to produce original digital artwork. This course will cover software integration with other Creative Suite software.

Prerequisite: MGDP1240, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Utilize Illustrator to create complex vector artwork
Use self-created vector artwork for course projects
Apply the elements and principles of design when creating vector images
Use knowledge of color theory in projects
Utilize proper tools for project time management
Create weekly assignments
Write written evaluations of final project
Create a composite vector-based original project
Integrate raster and vector artwork
Defend the use of design choices
Construct a compilation of vector-based digital artwork

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 1360 - Acrobat (2)

Acrobat works on multiple platforms offering flexible, independent viewing of content integrity and consistency. The student will use Acrobat to repurpose files for multiple uses, including: print, web and interactive design. Students will analyze and create PDF files by adding interactivity, annotated proofers marks, links, bookmarks, forms and search methods.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Combine file formats from multiple applications
Create interactive PDF files using forms, links and bookmarks
Add security and encryption to PDF files
Assemble PDF's for various media
Create an eBook for distribution online
Utilize annotated PDF as a part of a workflow to indicate changes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MGDP 1645 - Social Media Production II (2)

This course introduces students to media campaigns in a social media environment. Students will incorporate a mix of media to accomplish the goals of having multiple versions of a campaign delivered to different audiences and various online formats. Students will write a creative brief based on collected data through key marketing methods; A/B split testing on targeted audiences, and re-marketing strategies. A measurable KPI (key performance indicator) will help students develop thoughtful social media advertising. Emphasis on the tone or ”voice” gives the design meaning. Marketing to specific audiences are critical in the instant world of digital marketing on your screen. Niche markets will be planned by writing and reading market objective statements and creative briefs. Students will create content for various audiences from data collected in a marketing environment. Final produced content will be created using software from the Adobe Creative Suite.

This course is paired with MMVP1640 Social Media Production I (required co-registration).

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate engagement rates from case studies
Utilize data that has been previously collected to create visual solutions
Create A/B split testing on targeted audiences
Compare images for editing
Edit using digital software (Adobe Creative Suite)
Create digital marketing using the principals of design
Assemble designs for social media that will convey a themed message
Write a creative brief from a marketing plan
Create social marketing for a variety niche markets

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MGDP 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be

signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Chart a learning plan to put into action
Accept responsibility for goals and development
Predict goals within agenda
Complete all goals
Back up all project work and related materials
Define gained knowledge

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

MGDP 2010 - Applied Graphic Design (3)

This course incorporates hands-on application of Fundamentals of Graphic Design combined with creativity and tools from software and other lecture courses. Students will apply the principles and elements of design to hands-on projects. The learner will create and design projects from concept to completion. The projects developed in this course will be used in the student's portfolio.

Prerequisite: MGDP1010, MGDP1205, and MGDP1240, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Write report on the history of Graphic Design
Use Gestalt theory in producing design layouts
Sketch thumbnails for each the design projects assigned
Use the principles of graphic design
Show continuous improvement in design techniques
Use the elements of graphic design
Create a grid project using the golden ratio
Apply the rules of typography
Evaluate visual hierarchy
Critique design solutions
Create a typographic poster
Design an advertising campaign

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2030 - Packaging and Display Advertising (3)

This advanced course students explore the production of 3-D form and surface graphics. The student will use a creative approach design multiple projects including packaging, display and environmental outdoor advertising. Students will create 3-D prototypes for various packages and build models for point-of-purchase displays and large signage. Projects will be designed for inclusion in student portfolios.

Prerequisite: MGDP1330, MGDP1340, MGDP1350, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate diecutting and scoring
Classify project design construction materials
Construct project prototypes to meet process specifications
Ascertain project goals with product needs
Generate marketing objective statements
Demonstrate understanding of design elements and principles
Examine materials for specific product goals
Engineer displays to fit medium and longevity of product
Diagram display advertising market for demographic audiences
Track time spent on projects
Complete project designs from sketch to final printed piece
Develop products with sociocultural considerations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2040 - Collateral Advertising (3)

This advanced course examines the graphic designer's role in the layout and design of publications including booklets, brochures, direct mail and multi-page projects. Lectures and lab will cover current trends and technological practices within the graphic design industry. Students will produce comprehensive visuals for several publications using the elements and principles of design. Collateral materials created in this course will be included in the student's final portfolio.

Prerequisite: MGDP1330 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Ascertain which materials are best suited for a particular project
Apply industry standards when selecting colors
Calculate multiple-page document specifications
Illustrate design and market objectives
Differentiate audience market objectives when creating a project
Produce press-ready computer comps
Sketch ideas to convey strong visual thumbnails
Investigate market strategies in directmail advertising
Adapt design principles to project market goals
Integrate design trends to suit design style with market agenda
Construct finished projects to industry standards
Translate sociacultural trends for adaptation into development of projects

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2050 - Web Design & Development II (3)

This course introduces intermediate HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets) concepts including positioning and layout, responsive design, CSS3 concepts, and basic scripting. The learner will build an effective and dynamic navigation system, learn how to use page layout, work with typography, colors, backgrounds, and use white space. The course will use a project-based approach, follow industry's best practices, and the learner will design and develop a fully functional web site for a semester project. The learner will examine user experience by conducting user research, developing user personas and evaluating scenarios. They will also utilize information architecture, user interface design, prototype creation, and usability testing and analysis.

Prerequisite: MGDP1250

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to separate design elements from content

Utilize advanced positioning using CSS techniques
Differentiate the differences in Browser compatibilities
Demonstrate knowledge of web design industry best-practices
Apply responsive design techniques to create web sites that work across platforms and devices
Produce two complete web sites using varying designs
Design drop down menus for dynamic navigation
Utilize User Experience Scenarios
Use CSS3 (Cascading Style Sheets) in two varying designs
Demonstrate use of media queries

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2060 - Web Design & Development III (3)

The dynamic needs of modern web applications would not be possible without server-side technologies. This course explores PHP by developing dynamically driven content, form processing, Content Management Systems (CMS) and will focus on WordPress. Topics also include database setup, database queries, publishing and syncing to a web host. In this project-based course, students design and develop a dynamic website utilizing WordPress as a CMS. Concepts include WordPress fundamentals, creating custom themes, website maintenance, and using plug-ins to extend WordPress. This course also continues to explore HTML, CSS, JavaScript, asset management, design considerations, remote hosting, and live publishing (FTP) as introduced in Web Design and Development I and II.

Prerequisite: MGDP1250

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the ability to differentiate programming languages for the web
Distinguish how programming languages work together
Demonstrate use of JavaScript for web development
Integrate information for a web site
Utilize Content Management Systems to create dynamic web site
Demonstrate the use of PHP within a web site
Integrate Google Maps into a web page
Demonstrate use of dynamic scripting languages within a web site design
Create a fully functional dynamic web site using WordPress
Deploy web site to web hosting service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2080 - Applied Typography (3)

In this intermediate level course the student will immerse themselves in the craft of typography. Focus will be to develop skills in typesetting, exploration of letterforms, type classifications, letter spacing, kerning, hyphenation logic, and all typographic conventions applied to control the aesthetic properties of type. Students will develop an appreciation for the beauty of typographic letterform, learn to solve design problems principally with type, create organizational hierarchy, instill appropriate rules and guidelines, as well as research and discuss great type design.

Prerequisite: MGDP1205

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore typographical form and function throughout history
Develop typographical craft
Demonstrate understanding of gestalt as it relates to type design
Explore type categories
Identify historical typeface usage
Differentiate type design
Develop hierarchy of type design
Practice hierarchy of type design
Demonstrate typographic skills
Apply typesetting rules of design

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2100 - Web Design/Production (3)

Web Analytics provides sophisticated traffic information about a website, and is a must for every business entity with an internet presence. It delivers a comprehensive array of business intelligence and visitor behavior insights. Google provides a free analytics service which has already captured a major share of the analytics market. This course will introduce the learner to Google Analytics. They will also learn about SEO, Search Engine Optimization and techniques to raise the ranking of a web site within search engines. The student will build their own web site, evaluate it for optimization and analyze the site for traffic flow.

Prerequisite: MGDP1250

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply acquired skills from previous life experience
Utilize working independently
Apply Search Engine Optimization techniques
Assemble materials (text and images) for use in Web Site design
Apply web standards according to the World Wide Web Consortium
Distinguish audiences for intended web sites
Assemble a timeline to complete web site
Conduct regular meetings to discuss web site with client, other students and faculty
Demonstrate planning by documenting time, assets and web site workflow management
Design a web site using integrated skills
Demonstrate use of good communication through class discussions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2150 - Advanced Production Lab (1 - 8)

This course is a Pass/No Credit (P/NC). In this course the student will concentrate on advanced research or production methods that are not included in other courses. A training agreement must be signed by the student and the instructor at the beginning of the semester.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine client needs
Prepare proposal
Prepare production schedule
Determine all production elements
Select software package(s)
Determine visual style
Meet production deadlines
Evaluate production workflow(s)
Produce assets for client project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-8

MGDP 2200 - Design Portfolio (3)

A capstone course for Creative and Web Degrees and Diplomas. This course will focus on the presentation of portfolio. Student will explore various techniques and strategies for obtaining employment with the aid of a professionally designed portfolio. Students will select, customize and finalize their projects and learn proper presentation. Development of resume and interviewing techniques associated with presentation of portfolio will also be covered. Industry personnel will evaluate portfolios individually with the student at the end of the course. This course must be taken during the students last semester.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete an assessment of personal attributes
Use personal assessment to complete an artist's statement
Assess strengths and weaknesses
Assemble a portfolio
Develop a self-marketing plan
Assess all prior graphic design projects for inclusion in portfolio
Determine what revisions need to be made to prior projects
Improve projects to meet industry standards
Write a creative brief for each project
Create new projects in areas of design that have inadequate projects
Consolidate portfolio projects for presentation
Prepare portfolio presentation for presentation to industry personnel

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MGDP 2215 - Graphic Design Internship (1 - 12)

This course is an individualized internship that focuses on the student`s emphasis within the graphic design industry. Each credit purchased equates to 40 hours of on-site industry specific training and is normally taken during the last semester of a student`s major. Students participate on-site with professionals and are evaluated by predetermined curriculum objectives that have been agreed upon by the employer, instructor and student. This course provides the student with valuable on-the-job experience, interaction with industry professionals, and preparation for job entry. Students must interview for and acquire their internship site. It is recommended that student seek out instructor expertise for possible recommendation.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Outline career/internship goals
Identify internship plan and site
Complete internship paperwork
Project professional image according to industry standards
Demonstrate responsibility for internship
Exercise dependability
Demonstrate technical competence
Ascertain working environment guidelines
Demonstrate competence in performing assigned tasks
Handle constructive directives
Show mature attitude
Demonstrate cooperation
Recognize successful working relationships
Demonstrate effective communication skills
Complete follow-up for internship completion

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-12

MHTT - Medium Heavy Truck Technology

MHTT 1002 - Truck Technology Fundamentals (2)

This course is designed to give the student an understanding of various types of trucks and truck components. Personal and shop safety along with tool and hardware identification and fundamental repair skills will be addressed. This course will also cover the characteristics of hazardous waste and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT0900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate shop safety practices
Demonstrate the use of hand tools
Measure components using precision tools
Access service information
Identify vehicle components
Demonstrate thread restoration
Demonstrate brake line fabrication
Demonstrate oxy-acetylene operation
Demonstrate welding practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MHTT 1011 - Electricity in Truck Technology I (4)

This course is designed to give the student an understanding of electrical circuits to include battery, starting, and charging systems.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT0900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate shop safety practices
Explain Ohm's Law
Identify truck electrical circuits
Identify use of circuit components
Perform electrical measurements
Repair electrical circuits
Interpret wiring schematics
Diagnose battery system
Diagnose starting system
Diagnose charging system
Diagnose electrical accessories

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

MHTT 1015 - Electricity in Truck Technology II (3)

This course is designed to give the student an understanding of the troubleshooting and repair of advanced electrical circuits and controls.

Prerequisite: MHTT1011

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Interpret DMM measurements
Diagnose vehicle lighting circuits
Diagnose vehicle electrical components
Identify vehicle electronic controls
Interface with vehicle multiplex wiring systems
Verify electrical/electronic repair
Document electrical measurements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1020 - Vehicle Service (3)

This course is designed to give the student an understanding of preventive maintenance, service, adjustment, and inspection of medium and heavy-duty trucks. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy

assessment test OR CPLT0900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety practices
Identify preventive maintenance procedures
Implement vehicle lubrication procedures
Incorporate principles of vehicle inspection
Determine needed repairs
Identify out-of-service criteria
Identify vehicle component adjustments
Document inspection results

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1031 - Internship/Industry Partnership I (6)

This course will provide the student on-the-job training in the medium/heavy truck industry. The student will use knowledge learned during previous courses and put into practice those technical skills at the workplace.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and Qualifying score on computer literacy assessment test OR CPLT0900

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Implement vehicle lubrication procedures
Incorporate principles of vehicle inspection
Measure components
Record vehicle inspection results
Determine needed repairs
Identify out-of-service criteria
Adjust vehicle components
Measure electrical circuits
Perform electrical repairs
Interpret wiring schematics
Diagnose battery system
Diagnose starting system
Diagnose charging system
Diagnose electrical accessories

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

MHTT 1100 - Hydraulic Brake Systems (3)

This course is designed to give the student an understanding of operation, maintenance, troubleshooting and repair of hydraulic brake systems.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify hydraulic brake system fundamentals
Evaluate hydraulic brake system operation
Identify out-of-service criteria
Perform hydraulic brake system repairs
Document hydraulic brake service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1115 - Air Brake Systems and Controls (3)

This course is designed to give the student an understanding of theory, operation, maintenance, troubleshooting, and repair of air brakes and controls, including ABS brake systems.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify air-brake system fundamentals
Evaluate air-brake system operation
Identify out-of-service criteria
Perform air-brake system repairs
Document air-brake service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1131 - Internship/Industry Partnership II (6)

This course will provide the student on-the-job training in the medium/heavy truck industry. The student will use knowledge learned during previous courses and put into practice those technical skills at the workplace.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify hydraulic brake system fundamentals
Evaluate hydraulic brake system operation
Perform hydraulic brake system repairs
Identify air-brake system fundamentals
Evaluate air-brake system operation
Perform air-brake system repairs
Identify steering system fundamentals
Evaluate steering system operation
Perform steering system repairs
Identify suspension system fundamentals
Evaluate suspension system operation
Perform suspension system repairs
Identify out-of-service criteria
Document repairs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

MHTT 1200 - Steering and Suspension Systems (3)

This course is designed to give the student an understanding of operation, maintenance, troubleshooting and repair of steering and suspension systems.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify steering system fundamentals
Evaluate steering system operation
Perform steering system repairs
Identify suspension system fundamentals
Evaluate suspension system operation
Perform suspension system repairs
Identify out-of-service criteria
Document repairs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1210 - Clutch and Driveline (3)

This course is designed to give the student an understanding of operation, maintenance, troubleshooting, repair and adjustments of clutches, u-joints, and drivelines.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify driveline fundamentals

Identify driveline components
Examine driveline components
Identify clutch types
Assess clutch operation
Document precision measurements
Examine clutch components
Document component inspection
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1300 - Introduction to Diesel Engines (3)

This course is designed to give the student an understanding of diesel engine system operation. Tune up procedures will be performed on a variety of truck diesel engines.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify diesel engine theory of operation
Identify diesel engine components
Identify diesel engine lubrication system operation
Identify diesel engine cooling system operation
Diagnose diesel engine complaints
Interpret diesel engine operating characteristics
Examine diesel engine components
Perform diesel engine tune up procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1321 - Heating and Air Conditioning (3)

This course is designed to give the student an understanding of service and repair procedures used on heating and air conditioning systems. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MHTT1011 or LRTT1015

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify HVAC system fundamentals
Diagnose HVAC system operation
Perform HVAC system recovery
Examine HVAC system components
Perform HVAC system component replacement
Perform HVAC system evacuation
Perform HVAC system charge
Document HVAC system repairs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1331 - Internship/Industry Partnership III (6)

This course will provide the student on-the-job training in the medium/heavy truck industry. The student will use knowledge learned during previous courses and put into practice those technical skills at the workplace.

Prerequisite: MHTT1015, MHTT1300, and MHTT1321

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify HVAC system fundamentals
Diagnose HVAC system operation
Perform HVAC system recovery
Examine HVAC system components

Perform HVAC system component replacement
Perform HVAC system evacuation
Perform HVAC system charge
Document HVAC system repairs
Identify diesel engine components
Identify diesel engine lubrication system operation
Identify diesel engine cooling system operation
Diagnose diesel engine complaints
Interrupt diesel engine operating characteristics
Examine diesel engine components
Perform diesel engine tune-up procedures
Interpret (Digital Multi-Meter) DMM measurements
Diagnose vehicle lighting circuits
Diagnose vehicle electrical components
Identify vehicle electronic controls
Interface with vehicle multiplex wiring systems
Verify electrical/electronic repair
Document electrical measurements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

MHTT 1401 - Diesel Engine II (3)

This course is designed to give the student an understanding of the theory, operation, troubleshooting, and repair of diesel engine intake, exhaust and fuel systems.

Prerequisite: MHTT1300

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify diesel engine air intake system operation
Identify diesel engine exhaust system operation
Identify mechanical fuel system fundamentals
Identify mechanical fuel system components
Solve mechanical fuel system timing issues
Interpret mechanical fuel system performance issues
Perform mechanical fuel system governor adjustments
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1410 - Transmission Technologies (3)

This course is designed to give the student an understanding of operation, diagnosis, service and repair of medium and heavy-duty standard, automatic, and electronic truck transmissions.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify manual transmission fundamentals
Identify manual transmission components
Examine transmission components
Identify air shift controls
Assess transmission operation
Interface with electronic controls
Interpret DMM measurements
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1420 - Drive Axles (3)

This course is designed to give the student an understanding of the operation and repair of medium and heavy-duty drive axles.

Prerequisite: MHTT1002

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify drive axle fundamentals
Identify drive axle components
Examine drive axle components
Document precision measurements
Identify air shift controls
Assess drive axle operation
Calculate drive axle ratio
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1431 - Internship/Industry Partnership IV (6)

This course will provide the student on-the-job training in the medium/heavy truck industry. The student will use knowledge learned during previous courses and put into practice those technical skills at the workplace.

Prerequisite: MHTT1210, MHTT1410, and MHTT1420

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify driveline fundamentals
Identify driveline components
Examine driveline components
Identify clutch types
Assess clutch operation
Document precision measurements
Examine clutch components
Document component inspection
Identify manual transmission fundamentals
Identify manual transmission components
Examine transmission components
Identify air shift controls
Assess transmission operation
Interface with electronic controls
Interpret (Digital Multi-Meter) DMM measurements
Identify drive axle fundamentals
Identify drive axle components
Examine drive axle components

Assess drive axle operation
Calculate drive axle ratio
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 6

MHTT 1501 - Diesel Engine III (3)

This course is designed to give the student an understanding of diesel engine repair and overhaul procedures.

Prerequisite: MHTT1300

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify diesel engine components
Examine diesel engine cylinder head for reuse
Examine diesel engine cylinder block for reuse
Measure diesel engine components for reuse
Calculate cylinder protrusion
Organize parts for reassembly
Perform diesel engine major overhaul
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MHTT 1512 - Diesel Engine IV (4)

This course is designed to give the student an understanding of systems operation, troubleshooting, repair, and programming of electronically controlled diesel engines.

Prerequisite: MHTT1300

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify electronic controlled diesel engine theory
Identify electronic controlled diesel engine components
Identify electronic controlled diesel engine software
Interface with electronic controlled diesel engine
Assess electronic controlled diesel engine performance issues
Validate electronic controlled diesel engines electronic settings
Solve electronic controlled diesel engine fault codes
Adjust electronic controlled diesel engine injectors
Document diagnostic troubleshooting processes
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 2

MHTT 1532 - Internship/Industry Partnership V (9)

This course will provide the student on-the-job training in the medium/heavy truck industry. The student will use the knowledge learned during previous courses and put into practice those technical skills at the workplace.

Prerequisite: MHTT1401, MHTT1501 and MHTT1512

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate personal and environmental safety
Identify mechanical fuel system fundamentals
Identify mechanical fuel system components
Solve mechanical fuel system timing issues
Interpret mechanical fuel system performance issues
Perform mechanical fuel system governor adjustments
Identify diesel engine components
Examine diesel engine components for reuse
Measure diesel engine components for reuse
Calculate cylinder protrusion

Organize parts for reassembly
Perform diesel engine major overhaul
Identify electronic controlled diesel engine theory
Identify electronic controlled diesel engine components
Identify electronic controlled diesel engine software
Assess electronic controlled diesel engine performance issues
Validate electronic controlled diesel engine settings
Solve electronic controlled diesel engine fault codes
Adjust electronic controlled diesel engine injectors
Document diagnostic troubleshooting processes
Verify repair

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 9

MMST - Marine, Motorsport and Outdoor Power Equipment Technology

MMST 1095 - Beginning Motorcycle Maintenance (1)

This is an introductory course to preventative motorcycle maintenance. Students will be exposed to various routine preventative maintenance techniques including how to safely change fluids and batteries. A deeper understanding of why service intervals exist and how to perform a multi-point safety inspection on motorcycles will also be covered.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify basic maintenance procedures
Explain different service intervals
Complete a safety inspection
Perform preventative maintenance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

MMST 1100 - Introduction to Marine and Motorsport Technology (3)

This is an introductory course to the trades of Marine, Motorsport and Outdoor Power Equipment Technology. Subjects covered will be shop safety, tools, fasteners, precision measurement and career exploration. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore the trade area
Measure engine parts accurately
Identify fasteners by size and type
Describe safety procedures
Identify hand tools needed for working in the trade
Produce threaded holes in a steel bar
Install a Heli- Coil thread insert
Explain proper oxy-fuel setup
Identify key welding safety procedures
Exhibit professionalism
Exhibit safe work practices
Identify potential career pathways

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1105 - Introduction to Engine Theory (3)

This course will include four cycle and two-cycle engine theory. Also covered will be engine operating theory and failure analysis. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and

disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain 2 stroke theories
Explain 4 stroke theories
Identify parts of an engine
Explain engine component functions
Perform engine disassembly
Perform engine reassembly
Perform basic measurements
Access data from Internet
Accept responsibility
Exhibit professionalism
Exhibit safe work practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1110 - Introduction to Fuel Systems (3)

This course will introduce the student to the theories that make a fuel system operate such as atmospheric pressure, venturi principle, fuel air ratios and venting. The class will explore alternative fuels advantages and disadvantages. Some of the system parts covered will be tanks, pumps, filters and lines. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify carburetor theories of operation
Set carburetors to factory specifications
Service fuel systems
Diagnose engine problems related to fuel systems
Describe advantages and disadvantages of alternative fuels
Execute carburetor adjustments on a running engine
Identify carburetor circuits
Describe fuel and air passages through a carburetor body
Identify problems associated with alternative fuels
Describe lubrication systems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1115 - Introduction to Electrical Systems (3)

This course will cover basic electrical theories and their application in various situations. Volt/ohmmeter and circuit tester operation will be taught. Battery maintenance and theory will also be part of their course. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate between parallel and series circuits
Explain how an electrical relay works
Explain electro magnetism theory
Explain ohms law
Identify electrical components
Explain basic electrical theory
Diagnose electrical failures
Operate volt/ohm meter
Utilize electrical schematics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1120 - Introduction to Ignition Systems (3)

This course will introduce the student to the operation theories of ignition systems in use today. Service and repair procedures will be part of this course. Testing components and systems to diagnose problems will also be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1105 and MMST1115

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify theories of operation
Identify the parts
Test components
Explain operation of a magneto ignition system
Explain operation of an electronic ignition systems
Explain operation of a battery ignition system
Practice timing on ignition systems
Troubleshoot ignition problems
Perform normal maintenance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1125 - Service Management (3)

This course will cover the basics of customer relations, parts lookup, job documentation and the other aspects of running a service shop business. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the "Do's " of customer relations
Explain the "don'ts " of customer relations
Perform parts lookup for related equipment.
Identify customer dissatisfaction
Identify tools
Acknowledge customer problems
Perform work order completion
Organize tools
Apply customer satisfaction training

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1130 - Introduction to Drive Systems (3)

This course will cover the basics of power transmission by belt, chain and gear drives. Lubrication and maintenance will be taught also. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain belt drive systems
Explain clutch systems
Explain chain drive systems
Identify different kinds of bearings
Identify different types of seals and their purpose
Compare differential differences
Explain power transmission transfer
Explain mechanical transmission
Explain hydrostatic transmission

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 1145 - Trailer Maintenance (3)

This course will cover the storage of seasonal equipment. Trailer maintenance and use will be covered also. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1115

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify electrical problem symptoms
Identify safety procedures
Identify trailer handling procedures
Explain trailer hitch size and classification
Explain preventive maintenance procedures for trailers
Explain equipment tie down procedures for the power equipment industry
Perform trailer maintenance
Perform correct equipment tie down procedures
Identify trailer weight classes

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MMST 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Negotiated with instructor

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

MMST 2105 - Motorcycle Transmissions and Clutch Service (3)

This course will cover theories of operation and repair procedures used on common motorcycle transmissions and clutches. Parts identification and function are included. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain attributes of a constant mesh transmission
Explain function of typical motorcycle clutches
Diagnose failures of motorcycle transmissions
Overhaul a horizontally split motorcycle transmission
Overhaul a vertically split motorcycle transmission
Explain final drives used on motorcycles
Describe the power flow through a typical motorcycle transmissions
Explain the operation of variable sheave drives
Service a shaft drive system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2110 - Motorcycle Wheels and Suspension (3)

This course will cover the theories of operation and repair procedures on common motorcycle wheels, tires, brakes and suspension systems. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform manual tire changing
Perform tire changing with a tire machine

Perform maintenance on a disc brake system
Build a spoked motorcycle wheel
Perform suspension maintenance
Explain operation of a hydralic brake system
Perform repair of a drum brake system
Adjust brake light switches
Explain operation of motorcycle suspension

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2126 - Marine Lower Unit and Cooling System Service (3)

This course will cover the design and operation of common outboard lower units. Included will be servicing water pumps and cooling systems. Repair and normal maintenance will be included. Troubleshooting typical problems will be included. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Remove an outboard lower unit
Disassemble an outboard lower unit
Diagnose common shifting problems found in an outboard lower unit
Diagnose common cooling system problems found in an outboard motor
Identify the parts of an outboard cooling system
Reassemble an outboard lower unit
Perform maintenance on an outboard motor lower unit
Describe the operation of the propeller for an outboard motor
Select the correct propeller for a boat

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2140 - Marine Tilt/Trim and Controls (3)

This course will cover the theories of operation of common power tilt and trim systems found on outboards. Repair procedures used on different systems will be taught. Students will disassemble and service at least one tilt and trim unit. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Successful completion of all first year courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe principles of tilt and trim operation
Describe benefits of having a tilt and trim system on an outboard motor
Explain different circuits of a tilt and trim system
Perform normal maintenance on a tilt and trim system
Overhaul a tilt and trim unit
Describe operation of an electric hydraulic tilt and trim unit
Pressure test a tilt and trim unit
Describe safety procedures when working on hydraulic systems
Describe operation of an electric tilt and trim system
Identify controls of industry electronics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2175 - Power Equipment Drive Systems (3)

This course is designed to give the student hands on experience with transmissions, variable drive systems, and clutches, used in the power equipment industry. Disassembly, identification, and measurement of worn parts as well as reassembly and adjustments will be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1130

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Discover hydrostatic drives
Service brake systems

Recognize gear failure
Diagnose mechanical drives
Perform disassembly
Perform measurement
Examine clutches
Examine and adjust brakes
Prepare work orders

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2180 - Power Equipment Accessory Maintenance (3)

In this course the student will learn how to do basic maintenance and adjustments to accessories such as blade sharpening, mower deck adjustment, cable adjustment, safety switch operation, and belt pulley and bearing replacement. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1100

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Perform tire repair
Operate sharpening equipment
Perform replacement and adjustment of many types of control cables
Perform replacement and adjustment of many types of belts
Perform sharpening of mower blades and chain saw blades
Remove and replace power belts on equipment
Remove, replace, or repair recoil starters on equipment
Demonstrate functionality of safety switches
Remove and or replace bearings

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2300 - Advanced Fuel Systems (3)

This course will expand upon the material taught in basic fuel system class. Subjects covered are synchronizing multiple carburetor setups, jetting for different conditions and introduction to fuel injection. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1110

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the operation of a fuel system
Diagnose problems with a fuel system
Synchronize multiple carburetor setups
Describe basic fuel injection systems
Compare alternative fuels
Analyze fuel system damage
Describe the procedure for rejetting carburetors for different conditions
Describe auxiliary circuits found on some carburetors
Service fuel pumps

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2305 - Advanced Electrical Systems (3)

This course is designed to give the student advanced understanding of electrical systems unique to specific outdoor power equipment, motorcycle, and marine equipment. The main focus of the class will be wiring diagrams, reading wiring diagrams, and troubleshooting electrical components using a volt/ohm meter. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1115

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Differentiate between charging systems
Explain basic electrical theory
Discuss electrical components

Diagnose electrical failures
Solve ignition problems
Perform ignition timing
Exhibit safe work practices
Participate in class exercises
Access and use data from Internet

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2310 - Engine Overhaul (3)

This course will allow the student to use information from previous courses to overhaul an engine to factory specifications. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Successful completion of all first year MMST classes

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Diagnose engine failures
Analyze cost of repair
Perform measurement on worn parts
Perform disassembly procedures
Perform reassembly procedures
Exhibit safe work practices
Communicate with the customer as needed
Test engine operation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2315 - Tune Up (3)

This course will allow the student to use skills learned in previous classes to tune up equipment to factory specifications. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Successful completion of all first year courses

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Complete the repair order for a tune up
Diagnose the problems
Perform leakdown test on the engine
Perform lubrication services
Adjust all linkages
Perform ignition services
Adjust valve clearance
Service fuel system
Test equipment for proper operation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2320 - Customizing Lab (1 - 3)

This course will allow the student to use skills and knowledge from previous courses to customize motorcycles, boats or other equipment. This course will include modifications and installing accessories but no painting. Mechanical, electrical work and installing accessories will be allowed. Student will present a plan before starting work on the project with an estimate of both time and cost. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Second year student

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a plan for customizing a machine
Perform modifications according to plan

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours

for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-3

MMST 2325 - EETC/Advanced Troubleshooting (3)

This course will include advanced four cycle and two-cycle engine theory. Equipment and Engine Training Council (EETC) Certification will be stressed in the content of the class. Also covered will be advanced troubleshooting, and failure analysis. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: MMST1105

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain 2 stroke theory
Explain 4 stroke theory
Identify engine components
Explain engine component functions
Perform basic measurements
Access data from Internet
Practice EETC code of ethics repair procedures
Exhibit professionalism
Exhibit safe work practices

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMST 2340 - Repair and Accessory Lab (3)

This course will allow the student to advance the skills and knowledge from previous courses to repair, restore or accessorize marine, motorsports or outdoor power equipment. Students will present an approved project plan, estimate, design, and material list before work begins. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe handling disposal of hazardous waste/materials
Apply safe work practices during repairs
Conduct work and communication in a professional manner
Develop a repair or estimate plan
Revise the estimate or plan
Diagnose symptoms using a troubleshooting process
Report back on the developed time log
Inspect the quality of repairs
Compose a narrative of the repair work

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 0 lab: 3

MMST 2350 - Internship (1 - 3)

This course allows the student to gain on-the-job experience in the Marine, Motorsport and Outdoor Power Equipment industry. The student is responsible for finding and setting up the internship position. One (1) to three (3) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 1-3

MMST 2400 - Fuel Injection Systems (3)

This course will cover the fundamentals of EFI computer systems, diagnosis and repair of fuel injection systems. Students will work with manufacture supported scan tools and late model equipment performing live troubleshooting commonly found in industry within Marine, Motorsports and Outdoor Power Equipment. Industry certification is also available based on eligibility and current offerings.

Prerequisite: MMST1110, MMST2300, and MMST2305

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe theory and operation of computerized engine controls
Inspect computerized engine control components
Perform component tests
Operate diagnostic scan tools
Interpret Scan-Tool data
Diagnose computerized engine control systems
Perform vehicle repairs
Identify proper service information
Apply proper troubleshooting procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP - Interactive Design and Video Production

MMVP 1500 - Concepts of Interactive Media (3)

This introductory course will provide the student with an overview of the world of interactive media. The student will be exposed to software and hardware currently being used in the industry and through lectures and projects will explore the role of the interactive designer in the production of different types of multimedia.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define interactive media
Participate as members of an interactive team
Compare the production expertise needed for interactive media
Analyze the effect of pictures and sound in interactive media
Compare delivery and display options
Investigate new technologies in interactive media
Create audio assets for interactive projects
Create image assets for interactive project
Create animations
Develop nonlinear interactive projects
Create interactive projects with audio, images, and animations

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1505 - Introduction to Visual Communications (3)

In this course emphasis will be on the basic visual design strategies and techniques used in all types of multimedia presentations.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare media aspect ratios
Determine legibility requirements for different media
Compare color/font requirements for different media environments
Identify fonts correctly for different media
Determine correct typographical spacing
Identify colors correctly for different media
Evaluate existing visuals for different media playback formats
Identify different styles/levels of visualization
Create images/designs using different visual styles

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MMVP 1511 - Production Planning (4)

This course will introduce the student to the process of evaluating client needs and preparing written production documents for multimedia and video projects.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate the needs of the client
Develop the target audience
Develop creative strategies
Create budgets for media projects
Write proposals for media projects
Write a treatment or content outline for a media project
Write audio scripts
Write dual column scripts
Create storyboards for media projects
Create wireframes for media projects
Create flowcharts for media projects
Create user interface designs
Demonstrate presentation methods for media projects

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 1516 - Digital Media Technology (2)

This course is designed to give students a basic knowledge of the technical aspects of the hardware and software used in the digital design world. It includes the basics of file formats and input and output considerations for all types of media.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 and qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare operating systems
Identify software features
Identify software file extensions
Discuss utility software
Perform file transfer
Define hardware terminology
Compare storage options
Compare computer specifications
Demonstrate initiative

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: Online: 2

MMVP 1520 - Flash (3)

This course will introduce the fundamentals of creating exciting animations and compelling interactive projects using Adobe Flash.

Prerequisite: MMVP1500 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create artwork assets with software tools
Create artwork assets with imported bitmaps
Incorporate audio into projects
Develop frame based animation
Create animations using tweens
Utilize inverse kinematics to control animations
Create motion presets
Create interactive buttons
Utilize ActionScript to add interactivity
Develop techniques to optimize project assets
Produce animated and interactive projects

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1540 - Web Basics (2)

This course will introduce students to the fundamentals of XHTML. Students will learn to deploy XHTML through traditional hand-coding and WYSIWYG applications. Instruction will focus on the implementation of web standards, valid markup, usability, and accessibility. Students will learn through hands-on practice how to design, create, and deploy basic web sites.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200 and qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Understand XHTML coding
Understand web standards and semantic markup
Understand usability and accessibility
Create XHTML and CSS documents
Create effective web design solutions
Integrate media elements into web pages
Construct complete websites
Deploy web sites
Use WYSIWYG applications to increase efficiency in website creation and deployment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

MMVP 1545 - 3D Basics (3)

This course introduces the foundations of 3D modeling, texturing, animation, lighting, and rendering. Through this course, the student will use industry standard software and explore the production environment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate 3D modeling with standard primitives, box modeling, and modeling from reference
Identify lighting techniques in a 3D environment
Create UV map and textures for basic 3D objects
Demonstrate principles of animation to create simple 3D animations
Apply the concepts of design in 3D scenes and models
Evaluate project solutions through discussions and critiques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1562 - Audio for Media (3)

This course will introduce the student to sound editing for use in video and interactive projects. Audio software will be used to create loop-based audio, edit pre-made audio, and sync audio and video. Students will create exciting projects that combine music, sound effects, and dialogue.

Prerequisite: Qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply basic audio theory
Demonstrate studio and location audio recording methods
Demonstrate editing on audio waveforms
Demonstrate audio enhancements
Demonstrate noise reduction
Demonstrate sound removal techniques
Create projects with pre-made and self-created loop audio
Manipulate audio from a video
Demonstrate ADR (automatic dialogue replacement) audio techniques
Create foley sound effects for video and animation
Demonstrate mixing of music, sound effects, and voice audio

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1565 - Captivate (3)

Students will create scenario-based trainings, simulations, demonstrations, and quizzes using Captivate. Projects will be delivered online and to portable devices in multiple media types.

Prerequisite: MMVP1500 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop eLearning content
Create content for different learner types
Integrate multimedia content into projects
Create engaging simulations
Produce technology demonstrations
Create scenario-based training projects
Create quizzes
Deliver content to multiple devices in different media types
Integrate content into Learning Management Systems (LMS)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1570 - Introduction to Programming for Designers (3)

This course is a hands-on introduction to computer programming for artists, designers, and others who want to work in a visual context. Students will create images, animations, and interactive experiences. Students will learn the fundamentals of programming and object-oriented techniques to create engaging visual projects and designs. The open source programming language, Processing, will be used in this course.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use variables to store and track information

Develop array structures to store variables, objects, and other information
Create programs to make decisions and use branching logic
Create programs that control event flow
Demonstrate the use of functions
Demonstrate object-oriented programming techniques
Create interactive programs that manipulate images and pixels
Create programs that use video input
Design using arcs, spline curves, and bezier curves
Develop programmatic animation simulations
Demonstrate debugging methods to remove syntax and logic errors

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1580 - Animation (3)

This course will introduce the student to the principles of animation. Students will use cartoon style animation techniques to explore storytelling, creative visualization, and character development through the animation process. Students will learn about the digital animation workflow as they produce an animated short.

Prerequisite: Concurrent enrollment or prerequisite MMVP1500 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply narrative structure to animation
Develop visualizations through storyboarding
Design characters from hand drawn, photographic, and vector-based sources
Create character walk cycles, lip synchronization, and action movements
Demonstrate the 12 principles of animation
Utilize animation production workflows
Create diverse environments for animations
Use audio for voice, music, and sound effects synchronized to visual assets
Apply IK (inverse kinematics) to character movements
Produce finished output animation files

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1590 - Multimedia for the Web (3)

In this course students will learn methods and techniques to integrate interactive rich media into web pages.

Prerequisite: MMVP1520 with a grade of C or better OR MGDP1230 with a grade of "C" or better OR instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate website hosting solutions
Set up websites with top level domain names
Explore different Content Management Systems (CMS) for maintaining website content
Integrate basic databases using Access or mySQL
Create dynamic web pages using database content with PHP
Utilize Javascript on web pages
Explore methods to use different video formats on web pages
Demonstrate progressive enhancement techniques to include multimedia content
Develop project management workflows for multimedia websites
Discuss search engine optimization (SEO) for multimedia websites
Utilize semantic XHTML and CSS
Use code that meets web standards validation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 1600 - Introduction to Video Production (4)

In this course the student will develop skills and proficiency in the operation of video production equipment. Camera operation, lighting, basic audio and recording equipment are covered. Students will work as a member of a crew.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Identify video production styles and values
Identify video formats
Identify proper tape handling and storage procedures
Identify video signal(s) characteristics
Connect video record and playback systems
Set up a video monitor
Set up video camera
Compare camera specifications
Demonstrate all camera video controls
Demonstrate all camera audio controls
Demonstrate camera framing
Demonstrate the use of a video switcher
Identify supplemental lighting needs
Set up three-point lighting
Control lighting in various areas
Follow safe electrical standards
Perform lamp replacement

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 1605 - Videography and Directing (4)

In this course students will develop and increase their camera skills, including hand-held operation, Electronic News Gathering (ENG) and Electronic Field Production (EFP) applications. Students will also be introduced to directing techniques, including single camera and multi-camera strategies.

Prerequisite: MMVP1511 with a grade of C or better and MMVP1600 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret scripts that will be used as a guide for a production
Create a written project based on the work of a famous director
Demonstrate the use of studio camera movements
Demonstrate the set up and of a two or three camera studio production
Direct a team during all phases of a video production
Demonstrate the use of lighting instruments
Demonstrate the use of audio instruments
Create a background set for a 30-minute program
Identify directing communication techniques
Create a script for a 30-minute program
Operate the teleprompter for a `live` program
Edit a 30-minute talk show program

Demonstrate the techniques associated with switching as a technical director
Demonstrate the techniques associated with studio camera operation
Identify floor director communication techniques
Serve as a floor director during a 30-minute program
Serve as camera operator during a 30-minute program
Identify audio mixer parts and best practices
Serve as audio technician during a 30-minute program
Examine 30-minute programs and make suggestions for future programs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 1640 - Social Media Production I (2)

This course will introduce students to creating a social media campaign using still photos, graphics, video and written media to develop social media content. Students will analyze and present data in order to address organizational issues and make strategic decisions. Students will design and develop social media strategies and tactics. This course will be paired with MGDP1645 Social Media Solutions II.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Compare various social media platforms
Design social media presentation assets
Create a social media campaign using a video platform
Create a social media campaign using Facebook
Create a social media campaign using Twitter
Create a social media campaign using YouTube
Create a social media campaign using LinkedIn
Create a social media campaign using Instagram and Snapchat
Develop social customer strategy
Analyze social media strategies for effectiveness

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

MMVP 1650 - Event Technical Production (4)

This course will prepare students to develop strategies for planning an event. Students will use event design software for diagram design of an event space. Students will learn how to become an event planner and handle all of the logistics associated with arranging professional meetings, conferences, trade shows, receptions and special occasions.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design staging diagrams for an event
Design audio visual diagrams for an event
Identify food and beverage needs for various events
Develop strategies and process for event registration
Design trade show and conference diagrams
Design an entertainment diagram for an event
Design an attendee template using a Microsoft Excel spreadsheet
Design a seating diagram for an outdoor event
Design a seating diagram for an indoor conference center
Identify audio visual equipment needs for an indoor event
Collaborate with food, audio visual and conference center vendors
Generate a detail event procedure and process report using event planning software

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 1700 - DSLR Video Production (3)

This course will introduce photographers and video producers to video production with a DSLR (digital single-lens reflex) camera. The basic course will cover the DSLR workflow, which will include planning, shot composition, lenses, media types, media off-loading, media conforming and processing software, editing and delivery. This course is designed for photographers and video producers with emphasis on client delivery for weddings, corporate training and movie making.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the parts of a DSLR camera
Identify various HD and SD video formats and frame rates
Identify the types of lenses used with DSLR cameras for video
Capture footage from a DSLR camera
Demonstrate camera movement and composition
Demonstrate archiving workflow
Set up lights for interviews and product shots
Set up audio for interviews and event recording
Utilize DSLR footage conforming software
Utilize non-linear editing software
Create video projects using pre-production, production and post-production methods
Use compression and exporting software for delivery to the web
Use DVD authoring software for delivery

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2001 - Advanced Lighting (3)

This course is for advanced video students who want to become more creative in their use of lighting. Through lectures, demonstrations and screenings we explore the cinematic possibilities of advanced digital video cinematography and lighting. We experiment with the creative use of video production lighting techniques and equipment. Learn how to use the camera’s built-in menus to control hue, density, and contrast, while using lighting equipment and light meters to control image quality. We test the various cameras, and use filters and diffusion to create dramatic scenes in the studio and on location. We will test theory and gain practical experience in various lighting situations: day-for-night, night-for-night, available and mixed light, magic-hour, fire and candle light, close-up table tops, etc.

Prerequisite: MMVP1600 with a grade of "C" or better, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create advanced lighting set ups with single camera
Use filters and gels with lighting instruments
Integrate lighting instruments with camera and monitor
Integrate DV Rack for light metering
Create advanced lighting situations
Plan lighting scenes
Create various color temperature recordings
Create innovative light application experiences
Produce and deploy lighting plan for various set ups

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2010 - JavaScript for Designers (3)

Learn the exciting and dynamic language used to power the web and mobile environments. Use javascript to control screen elements, power animations. Build entertaining and visually rich interactive user experiences deployed on different devices.

Prerequisite: MMVP1570 and MGDP1250, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the use of variables, conditionals, loops, and functions
Create objects and functions
Demonstrate manipulation and control of the DOM (document object model)
Create interactivity using events
Create animations using page elements
Generate animations on the canvas
Construct user experiences combining canvas and video
Utilize code libraries
Develop integrations with third party APIs (application programming interfaces)
Demonstrate debugging procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2025 - Interactive Game Design (3)

This course will focus on the exciting field of casual online gaming. Students will explore how the casual gaming

market is revolutionizing the world of game design. Using game development frameworks, students will create an original game concept.

Prerequisite: MMVP2010 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate game design
Create game concept
Utilize sprite sheets for animations
Integrate game design and programming
Develop user interface and controls
Utilize game development frameworks
Demonstrate collision detection methods
Integrate visual and audio assets into games
Apply testing and usability principles to game design
Produce a finished game for game portal or contest submission

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2045 - 3D Modeling (3)

This course will explore modeling and texturing methodologies. Building on the basics of polygonal modeling and UV mapping, this course will focus on 2D and 3D painting techniques, normal mapping, and how to apply shaders. Using industry best practices, the student will study good and bad topology with multiple types of models.

Prerequisite: Recommended: MMVP1545 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create 3D models through the application of 3D polygonal modeling techniques
Develop realistic textures for models with multiple software tools
Identify UV mapping and layout techniques
Construct and optimize 3D models of varying complexity
Develop normal maps from geometric details and texture maps
Demonstrate industry production methods to create, edit, and optimize shaders, layered shaders, and UV layouts
Evaluate project solutions through discussions and critiques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2055 - 3D Animation (3)

This course will integrate the principles of animation into the 3D environment. Students will develop their skill in character animation and rigging. Advanced body mechanics, acting, and shot composition will be used to create animations for games and film.

Prerequisite: Recommended: MMVP1545 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the principles of animation through pose to pose and straight ahead animation methods
Create biped 3D character animations
Apply reference models for animation
Create personality and believability in animations
Create character lip sync animation
Utilize motion capture in character animation
Demonstrate fundamental character rigging techniques
Evaluate project solutions through discussions and critiques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2065 - 3D Advanced Production (4)

This project-focused course will focus on the creation of an advanced 3D animation project. Teamwork and collaboration skills from the 3D animation industry will be an integral part of the course. Topics may include advanced character rigging, motion capture, and working within the film production pipeline.

Prerequisite: Recommended: MMVP2045 and MMVP2055, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create a character that demonstrates a unique and appropriate movement style
Demonstrate advanced character rigging techniques
Demonstrate advanced modeling techniques
Demonstrate advanced animation techniques
Integrate 3D assets into a short film
Demonstrate collaboration and teamwork in production workflows
Create a portfolio-worthy 3D animation project
Evaluate project solutions through discussions and critiques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 2520 - ActionScript (2)

This course will provide students with the knowledge and hands-on experience they need to create dynamically generated animation and interactive projects with Flash. This course will build on the programming techniques introduced in MPRT1380 Print Media Programming. Students will work with Flash ActionScript classes, methods, functions, and event handlers. Students will focus on using ActionScript to reduce the dependence on Timeline-based tools. Students will implement ActionScript design patterns.

Prerequisite: MPRT1380 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Control visual objects with ActionScript
Animate with ActionScript
Use ActionScript programming (loops and arrays) to attach, name, and control MovieClip objects
Use Flash ActionScript classes
Load external media with ActionScript
Create Flash audio applications with the Flash sound object
Analyze techniques to deploy ActionScript driven Flash applications
Access XML data
Apply design patterns to ActionScript applications
Create dynamic data-driven Flash applications

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

MMVP 2550 - Video Field Production (3)

This course will give the student fundamental understanding of remote video production. Camera setup, audio techniques and proper lighting on location will be explored. Students will work as a team with this `hands-on` course.

Prerequisite: MMVP1511 with a grade of C or better and MMVP1600 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create scripts to be used in production
Direct other crewmembers
Set up audio equipment in a remote location
Compare various video production designs
Create video samples
Critique video samples from various media outlets as well as class-produced media
Identify the parts of a portable video camera
Operate signal generating devices of the video camera
Demonstrate the set-up for a remote production
Identify the various kinds and uses of video production lighting instruments
Demonstrate the lighting techniques used in various remote environments
Identify the kinds and uses of various audio instruments in remote environments
Demonstrate the set up of remote signal processing equipment
Demonstrate the proper set up for remote signal monitoring equipment
Demonstrate the proper directing techniques in a remote environment
Demonstrate the proper remote production techniques for a post production

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2560 - After Effects (3)

This course will introduce the student to the foundations of motion graphics. Students will explore animation and visual effects for video, film, web, and games.

Prerequisite: MMVP1500 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce storyboards to pre-visualize animations
Create animatics
Demonstrate animation of photographic image assets
Show keyframe techniques to animate properties of compositions
Produce animated sequences using typography
Demonstrate compositing using keying methods
Construct 3D camera scenes
Produce visual effects to enhance scenes
Apply color correction techniques to footage
Demonstrate production workflows incorporating additional software programs
Produce rendered output for target device

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

MMVP 2565 - Advanced After Effects (3)

This advanced course in motion graphics will challenge the student to push the creative envelope of visual effects. Focus will be placed on creating seamless integration of effects with cinema footage.

Prerequisite: MMVP2560 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate advanced keying techniques to blend visual effects with footage
Demonstrate 3D camera tracking
Use expressions to control animations
Demonstrate polished animation techniques
Integrate models into VFX (visual effects) scenes
Demonstrate detailed color corrections
Show depth compositing using z-pass
Produce film style title sequences
Produce finished projects through collaboration as a team member
Critique the projects made during the course

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2575 - Interactive Mobile Design (3)

This course will focus on the development of applications for mobile devices using HTML5. Students will develop the concepts, assets, and user interaction for their projects targeting mobile devices. Students will produce web apps and develop native apps using packaging technologies.

Prerequisite: MMVP2010 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Create artwork assets for multiple screen sizes and types
Develop user interfaces for mobile devices
Demonstrate responsive design techniques
Use mobile development frameworks
Design web applications for mobile devices
Utilize packagers to build native wrappers
Develop multi-touch and gesture applications
Demonstrate access to device APIs (application programming interfaces)
Demonstrate application deployment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2600 - Digital Post Production (4)

In this advanced course students will build on existing non-linear editing skills. Final Cut Pro, and DVD Studio Pro software will be used to create digital special effects, titles, animation, and audio tracks. Students will learn how to integrate these elements into a finished video production.

Prerequisite: MMVP1600 with a grade of "C" or better, qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the various keystrokes used during non-linear editing
Identify nonlinear editing systems software
Demonstrate importing video footage and/or still photo techniques
Demonstrate video clip placement on the timeline sequencer
Record the final output of the Final Cut Pro to videotape
Create tutorial video sample for Final Cut Pro software
Create 15-picture video sample from Final Cut Pro
Create video sample from footage provided on the Final Cut Pro
Demonstrate the digitizing of video for the Final Cut Pro
Demonstrate file management on the Final Cut Pro.
Demonstrate the use of still images in the non-linear digital environment
Demonstrate the use of special effects
Demonstrate the use of titling
Demonstrate the use of transitions in non-linear editing
Demonstrate the lighting techniques used in various environments
Create a DVD using DVD Studio Pro

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 2605 - Corporate Video Production (4)

In this course students will be introduced to the various ways video is used to increase communications and solve training problems in business and industry. Students will complete a training tape and a marketing/promotional video.

Prerequisite: MMVP1511 with a grade of "C" or better and MMVP1600 with a grade of "C" or better or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the basic video concepts and terms
Compare the video producer requirements in the workplace
Identify equipment to be used in a remote location
Set up equipment in a remote location
Determine and use video production budgeting procedures
Evaluate different treatment writing styles
Create scripts for a corporate training video
Evaluate different methods of visualization for a corporate training video
Create a production book
Identify the target audience for various video production efforts
Write a three-minute sales script
Produce and direct a three-minute sales promotion video

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MMVP 2610 - Avid Non-Linear Editing (3)

This advanced course will introduce a student to the Avid non-linear editing system. Students will create video projects for their portfolio. Students will become proficient with the Avid software and hardware interfaces.

Prerequisite: MMVP1600 with a grade of "C or better, qualifying score on computer literacy assessment test OR CPLT1100 or CPLT1200, or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the various keystrokes used during non-linear editing
Identify non-linear editing systems hardware
Identify non-linear editing systems software
Demonstrate video digitizing techniques
Demonstrate importing video footage and/or still photo techniques
Demonstrate video clip placement on the timeline sequencer
Create a final video editing sample
Demonstrate the use of still images in the non-linear digital environment
Demonstrate the use of special effects
Demonstrate the use of titling
Demonstrate the use of exporting for use in third-party software
Demonstrate the use of transitions in non-linear editing
Identify the different output input and options

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MMVP 2630 - Advanced Production Lab (1 - 8)

This course is offered as Pass/No Credit (P/NC). In this course the student will concentrate on advanced research or production methods that are not included in other courses. A training agreement must be signed by the student and instructor at the beginning of the semester.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine client needs
Prepare proposal
Determine production values
Prepare production schedule
Assemble production team
Prepare rough storyboard
Determine all production elements
Determine image file formats
Select software package(s)
Review storyboard
Determine visual style
Review artwork with client
Determine digital image needs
Create digital images
Meet production deadlines
Determine video requirements
Review script and storyboard

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-8

MMVP 2641 - Portfolio Production (3)

This course will provide an opportunity for the student to assemble and prepare their portfolio. Students will produce other documents necessary to seek employment. The student will research employment in their industry.

Prerequisite: Project related beginning courses and instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Analyze portfolio strategies
Develop portfolio focus
Develop creative strategy for portfolio
Revise project assets for portfolio
Demonstrate proficiency in program of study
Demonstrate industry best practices in portfolio
Write cover letter and resume
Investigate current industry job opportunities
Demonstrate legal and ethical principles
Show portfolio

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MMVP 2650 - Interactive Design Video Production Internship (1 - 8)

This will be a cooperative training program between Hennepin Technical College and a business which allows the student to apply competencies learned in the program to an employment-like work experience.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrates initiative
Exhibits enthusiasm
Displays judgment
Demonstrates courtesy
Displays punctuality
Demonstrates dependability
Organizes work area
Follows company policies
Maintain successful working relationships
Display technical competence
Demonstrate safety
Demonstrate cooperation
Communicate successfully with co-workers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-8

NAHA - Nursing Assistant/Home Health Aide

NAHA 0110 - Nursing Assistant Written Test (0)

This is an examination process which is necessary for registration of nurses aides employed in long-term care facilities. The examination consists of two parts; a written evaluation and a skills evaluation. This evaluation is designed to objectively measure nurses aide candidate`s knowledge and skills and to ensure minimal entry level competency in the field. Individuals successfully completing this examination are placed on the Minnesota Nursing Assistant Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 0115 - Nursing Assistant Written-Retake (0)

This is a retake examination process which is necessary for registration of nurses aides employed in long-term care facilities. The retake examination consists of two parts; a written evaluation and a skills evaluation. This evaluation is designed to objectively measure nurses aide candidate`s knowledge and skills and to ensure minimal entry level competency in the field. Individuals successfully completing this examination are placed on the Minnesota Nursing Assistant Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 0120 - Nursing Assistant Skills Test (0)

This is an examination process which is necessary for registration of nurses aides employed in long-term care facilities. The examination consists of two parts; a written evaluation and a skills evaluation. This evaluation is designed to objectively measure nurses aide candidate`s knowledge and skills and to ensure minimal entry level competency in the field. Individuals successfully completing this examination are placed on the Minnesota Nursing Assistant Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 0125 - Nursing Assistant Skills-Retake (0)

This is a retake examination process which is necessary for registration of nurses aides employed in long-term care facilities. The retake examination consists of two parts; a written evaluation and a skills evaluation. This evaluation is designed to objectively measure nurses aide candidate`s knowledge and skills and to ensure minimal entry level competency in the field. Individuals successfully completing this examination are placed on the Minnesota Nursing Assistant Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 0130 - Home Health Aide Written Test (0)

This examination focuses on the role of nursing assistants in home care. Upon successfully completing this examination the individual is placed in the Minnesota Nursing Assistant/Home Health Aide Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 0140 - Home Health Aide Written-Retake (0)

This retake examination focuses on the role of nursing assistants in home care. Upon successfully completing this examination the individual is placed in the Minnesota Nursing Assistant/Home Health Aide Registry.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

NAHA 1002 - Nursing Assistant/Home Health Aide (5)

This state approved course introduces concepts of basic human needs, health and/or illness continuum and basic personal care skills. It includes theory with skills demonstrated in a supervised laboratory setting and 24 hours of clinical care of selected adult elders in a long term care (LTC) setting. The role of the nursing assistant in a LTC facility as well as working with various populations is discussed. In addition, the course provides an overview of the nursing assistant's role in home care. It identifies issues related to working in homes, including adjustments to delivering personal care, food and nutrition, and homemaking responsibilities. Upon successful completion of this course, the student is eligible to take the MN Nursing Assistant Competency Evaluation for NA/HHA. Individuals successfully completing this examination are placed on the MN Nursing Assistant/Home Health Aide Registry.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901. Ability to lift and move 25-50 pounds. 16 years of age

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify general characteristics of aging and the effects on body systems
Differentiate between verbal and non-verbal communication techniques
Describe effective communication with population served, supervisor and co-workers
Identify situations requiring emergency action
Apply principles of infection control
Demonstrate personal care for select population
Demonstrate safe moving and transferring of select population
Identify factors which affect nutritional needs of select population
Identify factors that interfere with elimination needs of select population
Define dementia and strategies to effectively work with select population having this diagnosis

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 2

NURS - Practical Nursing

NURS 1015 - Nutrition Basics (1)

This course provides information concerning the relationships between health, food and nutrients. The student will be able to identify the nutritional requirements for a healthy diet, analyze labels and create a healthy meal plan.

Prerequisite: Qualifying score on Computer Literacy assessment test OR CPLT1100 or CPLT1200

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze the basic nutrients needed for a healthy diet
Apply basic nutrition needed for a healthy diet
Illustrate the nutritional challenges faced when adapting to a new culture
Analyze food labels as it relates to a healthy diet

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1

NURS 1020 - Trained Medication Aide (2)

This state-approved program provides an overview of the requirements concerning medications and their administration. Other topics include legal criteria, medical abbreviations, measurements, use of the Physician`s Desk Reference (PDR), and overview of body systems and drug classifications. Administration of medications via oral, eye, ear, rectal, and topical routes will also be covered. Attendance of all classes is mandatory; any absence will result in repeating the course. Students must attain 90% on all examinations to continue in the class. Students who do not attain 90% in the retake exam may continue to attend the lecture portion of the class but may not test and will receive a failing grade.

Prerequisite: Qualifying score on reading assessment test or ENGL0901. Proof of completing a 75 hour NA course. Proof required at the first class

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe principles of medication administration
Define forms of medications
Match correlating medical abbreviations with medical terminology
Utilize drug reference manual
Name the basic anatomy and physiology of body systems
Identify medications to drug classifications
Demonstrate medication administration
Document medication

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

NURS 1375 - Fundamentals of Nursing (8)

This course provides an introduction to the theoretical foundation for basic assessment and nursing skills. The student is given an opportunity to demonstrate these skills in the laboratory and clinical setting. An introduction to the nursing process provides the student with a framework for decision making, professional identity, and patient centered care. Evidence based practice, leadership skills, and informatics are introduced.

Prerequisite: Acceptance into the nursing program

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify therapeutic communication skills to provide culturally sensitive client care
Identify steps of the nursing process while providing care
Identify members of the health care team
Demonstrate basic nursing skills using techniques and measures that ensure client safety
Describe the safety principles in relation to pharmacology
Demonstrate the elements of documentation
Identify evidence based sources that support client care
Utilize information technology for accurate documentation
Identify professional boundaries and behaviors related to established codes of ethics, nurse practice acts, and legal/ethical frameworks
Define the major classifications of medications as a framework for medication administration
Describe the health and wellness continuum and the impact that lifestyle and risk factors have on one’s health status
Identify strategies to improve personal performance

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4.5 lab: 3.5

NURS 1380 - Medical Surgical Nursing I (8)

This course focuses on care throughout the lifespan to include newborn to older adults with common medical/surgical health problems. Pathophysiology, nutrition, and pharmacology are applied to diseases within each concept.

Prerequisite: NURS1375

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Collaborate with licensed health care providers to provide client-centered care
Demonstrate culturally and developmentally appropriate therapeutic communication techniques
Perform focused assessments from an established plan of care for the client with common medical/surgical health problems
Identify potential and actual client complications or changes to report to the appropriate health care provider
Discuss rationales for nursing judgments and prioritization of client care
Implement appropriate interventions within an established plan of care based on potential and actual client complications
Apply knowledge of pharmacology, pathophysiology, and nutrition to the care of clients with common health problems
Utilize evidence-based resources to find information related to the care of clients with common health and safety issues
Identify client health and safety needs
Demonstrate professional boundaries and personal integrity
Recognize ways to improve patient satisfaction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4 lab: 4

NURS 2375 - Medical Surgical Nursing II (8)

This course focuses on care throughout the lifespan to include newborn to older adults with advanced medical/surgical health problems. Application of pathophysiology, nutrition, and pharmacology are applied to complex diseases within each concept.

Prerequisite: NURS1380

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate the nursing process when providing care
Communicate with the health care team to provide care for the client with advanced medical/surgical health problems
Complete focused assessments from an established plan of care for the client with advanced health problems
Prioritize potential/actual client complications or changes to report to the appropriate health care provider
Implement appropriate interventions within an established plan of care based on potential/actual client complications with advanced health problems
Apply knowledge of pharmacology, pathophysiology, and nutrition to the care of clients with advanced health problems
Apply safe nursing practice when performing skills
Maintain confidentiality of medical record and patient information
Demonstrate compliance with facility policies and procedures
Implement techniques to improve patient satisfaction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4.5 lab: 3.5

NURS 2380 - Transition to Practice (8)

This course facilitates the transition of the student to the role of the Licensed Practical Nurse (LPN). Concepts related to teamwork, collaboration, and leadership are presented as well as career development options that enhance career mobility. Advanced discussion around decision making, professional identity/behavior and patient centered care, judgment/evidence based practice, and informatics/technology is introduced.

Prerequisite: NURS2375

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a plan for National Council Licensure Exam-Practical Nursing (NCLEX-PN) success
Interpret ethical, legal and regulatory frameworks within the scope of nursing practice
Participate in an emergency response as a member of the healthcare team
Apply principles of quality improvement in a nursing environment
Compare evidence-based resources related to the care of clients with advanced health and safety issues
Use nursing judgment to provide rationale for prioritization of care
Determine appropriate actions for conflict resolution
Investigate Minnesota State Board of Nursing requirements for acquiring and maintaining Practical Nursing (PN) licensure
Manage the care of individual clients through planning, organizing and assigning
Integrate community involvement and service with coursework
Select culturally and developmentally appropriate therapeutic communication techniques

Demonstrate safe nursing practice

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4.5 lab: 3.5

OFCR - Medical Office Careers

OFCR 1301 - Medical Terminology (4)

This course covers the introduction to word analysis and construction with usage of word roots, prefixes and suffixes. Emphasis will be placed on definition, pronunciation, and spelling of roots, prefixes, suffixes and medical words. In addition, students gain an understanding of the organization and complexity of the body and become familiar with the location and function of major body organs. Pharmacological drugs associated with the body systems will also be studied.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course.=:
Define combining forms, suffixes and prefixes for specific body systems
Construct correct medical terms
Spell medical terms
Pronounce medical terms
Define medical terms for specific body systems
Spell common drugs associated with specific body systems
Define abbreviations associated with specific body systems
Name the major organs of each of the specific body systems
Describe basic physiology as it relates to each body system
Describe disease processes and symptoms that affect specific organs
Utilize reference materials
Manage time to meet deadlines

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.

Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

OFCR 1317 - Medical Office Procedures (4)

This is an introductory course to medical office procedures and the administrative medical assisting profession. Topics covered will include medicolegal regulations, ethical responsibilities, telephone etiquette, customer service, appointment scheduling, medical records management and written communication. Students will utilize a fully online integrated practice management and electronic health record system.

Prerequisite: Qualifying score on math assessment test OR MATH1050 or MATH1060 and OFCR1301 and CPLT1005

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe medicolegal and HIPAA responsibilities in health care
Describe ethical responsibilities in health care
Perform basic medical receptionist clerical functions
Communicate effectively over the telephone
Schedule patient medical appointments and procedures
Manage patient medical records
File records according to appropriate systems and conventions
Prepare written correspondence common to the medical practice setting
Process mail and telecommunications
Utilize a fully online integrated practice management and electronic health record system
Perform an Internet job search for a medical office support position
Create a resume and cover letter for a medical office support position

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

OFCR 1331 - Medical Document Processing (4)

This course introduces the student to scribing of medical reports. Emphasis will be placed on the use of reference material, report formats, and proofreading. The student will create office notes, procedural notes, consultative and emergency service medical reports, history and physicals, operative notes, discharge summaries, and patient correspondence.

Prerequisite: CPLT1005, ENGL1010, and OFCR1301

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Scribe medical documents by work type
Scribe medical documents by medical specialty
Improve keyboarding accuracy
Use correct medical terminology
Use correct medical abbreviations, symbols and lab values
Demonstrate understanding of health information professional standards/issues
Incorporate correct grammar, punctuation and proper English mechanics
Demonstrate research skills using the Internet and reference books
Proofread medical documents
Edit medical documents

Text and References: A list of textbooks required for this course is availableat the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

OFCR 1335 - Medical Coding and Reimbursement Fundamentals (4)

This course includes an overview of ICD10 diagnostic coding as well as CPT and HCPCS procedural coding. Principles of complete and accurate coding for both statistical reporting and insurance billing will be covered. Exercises and case studies will be used to demonstrate requirements for accurate coding and claims processing.

Prerequisite: OFCR1301

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate use of coding publications: ICD10, CPT, and HCPCS
Utilize reference materials effectively
Assign ICD10 diagnostic codes
Assign HCPCS national codes
Assign CPT procedure/service codes
Demonstrate code sequencing in multiple diagnoses
Link diagnostic codes with procedure/service codes
Describe basic billing functions
Identify insurance reimbursement methodologies
Outline specific payer guidelines
Complete insurance claims
Explain the Electronic Date Interchange (EDI) process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

OFCR 1340 - Medical Office Management (3)

This course is an extension of the Medical Office Procedures course, focusing on medical office managerial responsibilities. It includes the application of fees, credit, accounting, banking and finance management principles. Content also includes a medical office staff orientation presentation incorporating policy and procedure development.

Prerequisite: ACCT1000 or ACCT1102, OFCR1317 and OFCR1335

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify medical office management responsibilities
Use the Internet to research health care issues
Create orientation and training materials for medical reception
Apply medical practice financial management principles
Apply accounting principles
Apply banking principles
Apply fees, credit and collection principles
Demonstrate an understanding of safety/health standards and healthcare regulatory bodies
Demonstrate time management skill

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PHIL - Philosophy

PHIL 2000 - Introduction to Logic (3)

Logic is the study of how or why something makes sense. This course focuses on the rules and skills of formal and symbolic logic and its practical applications. The rules of logic are used everywhere from computer and machine programming to making valid and convincing arguments.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define key terms within logic
Symbolize natural language
Distinguish between validity and soundness
Construct truth tables
Construct Venn diagrams
Evaluate arguments for validity
Identify formal fallacies
Complete a logical proof
Apply logical principles to real world problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 0

MnTC Goal Areas: 4.

PHIL 2100 - Critical Thinking for College Success (3)

This course is an introduction to the study of reasoning and its applications to making good decisions and avoiding mental errors in the college environment. Students will investigate the logical concept of an `argument' and focus on how supporting beliefs with evidence and sound reasoning leads to better positions, decisions, behaviors, and outcomes in college and in life.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define personal success
Explain intellectual virtues advantageous to the college environment
Explain fallacious reasoning and the tendency to make mental errors
Evaluate inductive arguments for generalizations
Evaluate inductive arguments for analogies
Evaluate inductive arguments for causation
Evaluate inductive arguments from authority

Use deductive reasoning to troubleshoot problems
Analyze personal financial behaviors
Analyze personal time management
Analyze relationships with persons of influence
Apply problem-solving methodologies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 2.

PHIL 2200 - Ethics (3)

This course is an introduction to ethics and moral philosophy, the branch of philosophy which concerns conduct and how we ought to live. Students explore the nature of ethics, important challenges to ethics as traditionally construed by philosophers, and several ethical theories prominent in the history of philosophy. Throughout the inquiry, students will have occasion to discuss various contemporary moral problems and see how ethical theories have addressed them.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate Kantianism
Evaluate utilitarianism
Evaluate virtue ethics
Explain moral terms and concepts
Evaluate challenges to universality in ethics
Conduct respectful ethical discussions
Apply moral theories to contemporary moral problems
Brainstorm multiple options for resolving ethical dilemmas
Map conflicting moral values
Defend moral arguments

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6 & 9.

PHIL 2400 - Medical Ethics (4)

This course introduces students to some of the fundamental issues in medical ethics and the major branches of moral theory and methodology that bear upon them. Given that we all participate in the medical system as a patient, relative of a patient, or as a practitioner, this class is open and relevant to all students, regardless of major. Using mastery of moral theories and concepts, students will analyze specific issues in medical ethics and learn the philosophical skills needed to develop and defend moral arguments. Students will analyze particular cases in medical ethics and apply the moral concepts to their own lives and situations. Inquiry will emphasize the evaluation and application of various methodological approaches to ethical problems arising in medical situations.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabusfor detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply major moral theories to moral dilemmas in medicine
Explain moral terms and concepts
Analyze cases in medical ethics
Defend moral arguments
Conduct respectful ethical discussions
Identify the major issues related to informed consent, issues of patient privacy, and confidentiality
Identify key issues in research ethics
Evaluate the moral dimensions of emerging issues in technology and medicine
Evaluate issues raised by conflicts of interest
Evaluate issues related to refusals of treatment
Evaluate ethical issues raised in treating children and incompetent adults

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

MnTC Goal Areas: 6 & 9.

PHIL 2500 - World Religions (3)

This course is an introduction to the major world religious traditions. Traditions to be studied may include Ancient Greek and Egyptian religions, Native American religions, Hinduism, Buddhism, Taoism, Confucianism, Judaism, Christianity, and Islam. The course will focus on the historical formation of religions and those who founded them. The course will also examine their scriptures, practices and beliefs and the ways each tradition answers fundamental religious questions concerning the nature of reality, purpose in life, ethics and death.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Conduct respectful religious discussions
Explain religious terms and concepts
Explain historical origins of religion
Identify founders and beliefs of major world religions
Evaluate major world religions' approaches and answers to fundamental questions of the human condition
Apply religious world views to contemporary social, ethical, and political issues
Appreciate historical and contemporary influence of world religions on human culture
Compare major world religions' practices and scriptures
Assess the philosophical underpinnings of religious world views

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 6 & 8.

PHIL 2600 - Environmental Ethics (3)

This course is an examination of philosophical approaches to the questions "Do we have moral obligations to nature and the environment? If so, what are they and how can they be justified?" Using a variety of philosophical perspectives we will investigate environmental concerns such as conservation and preservation, the effects of population growth, theories of nature, animal rights, the effects of pollution, concerns about the use of natural resources, ecofeminism, deep ecology, and land ethics.

Prerequisite: Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Conduct respectful ethical discussions
Apply moral theories to contemporary environmental problems
Identify key historical and contemporary issues in environmental ethics
Analyze cases in environmental ethics
Explain moral terms and concepts
Defend moral arguments
Assess philosophical theories of nature and the environment
Evaluate environmental problems and solutions
Appreciate interrelationships between natural ecosystems and human cultures and institutions

Text and References: A list of textbooks required for this course is available at the <a rel="noopener noreferrer"

href="https://www.hennepintech.edu/finance-operations/campus-store.html" target="_blank">bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 9 & 10.

PHYS - Physics

PHYS 1000 - Fundamentals of Physics (2)

Physics is the study of the way the universe works. This course is for those interested in learning more about the physical world around them and why things behave the way they do. Conceptual understanding of the subject will be emphasized. The topics covered include motion, forces, energy, heat, electricity and magnetism. The course may also include a study of waves, sound, light, and/or atomic structure. Classroom activities will include lectures, discussions, and demonstrations.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Research concepts of motion, energy, heat, and electricity
Analyze Newton's force laws through measurements and observations
Evaluate the mechanical advantage of simple machines
Review the components of simple circuits
Analyze graphs, charts and diagrams
Apply physics principles to applications in technology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

PHYS 2001 - Introductory Physics (3)

Physics is the study of matter, energy, and the interaction between them. Fundamental principles of physics provide the basis upon which much of modern technology operates. In this course students will investigate the fundamental principles of physics with an emphasis on conceptual understanding. Students will gain knowledge of natural processes and their applications. Topics include the structure of matter, mechanics, heat, light, electricity, and magnetism.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply fundamental physics principles to a wide variety of applications in modern technology
Draw conclusions in written lab reports based on data gathered in experiments
Formulate various hypotheses to explain the observed motion of objects in the lab and in everyday life
Predict the results of motion experiments based on known laws of physics
Solve motion problems
Formulate various hypotheses to explain observations of forces on objects in the lab and in everyday life
Predict the results of force experiments based on Newton's force laws
Solve force problems
Investigate common misconceptions about the laws of motion and Newton's force laws
Analyze physics problems using the principle of the conservation of energy
Analyze the behavior of static and flowing fluids using force and energy concepts
Apply the concepts of heat, temperature, and thermodynamics to applications in technology
Solve problems in electricity and magnetism using Coulomb's, Kirchoff's, Ohm's, Lenz's, and Joule's Laws

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

MnTC Goal Areas: 2 & 3.

PHYS 2005 - College Physics I (4)

College Physics I is the first semester course in which the applications, problems, and experiments are selected to illustrate fundamental principles of physics, and demonstrate the relevance of physics to other areas of interest, such as the health science, and engineering technology professions. This first semester of the two-semester sequence is organized around the fundamental principles of forces and interactions, conservation of momentum and conservation of energy. Topics covered include force and motion with applications of Newton's Laws of Motion, gravitational force, angular momentum, torque and equilibrium, work, energy, static and dynamic fluids, and thermal physics. To facilitate learning how to solve problems, cooperative learning methods will be used in this section.

Prerequisite: Qualifying score on math assessment test OR MATH1500 with a grade of "C "or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply the fundamental laws and concepts of classical physics

Use the terminology of physics correctly
Execute physics lab experiments
Write physics laboratory reports
Apply physics principles to engineering disciplines
Use scientific notation
Use vector principles to solve problems
Solve motion problems based on the kinematic equations
Apply Newton's Second Law
Solve physics problems in friction
Apply the principles of projectiles motion
Solve problems using Newton's Universal Law of Gravitation
Solve static equilibrium problems
Solve problems by employing the laws of momentum
Solve problems involving work done by forces
Apply the principles of fluids to technology
Solve problems in thermodynamics

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

PHYS 2010 - College Physics II (4)

College Physics II is a second semester course in which the applications, problems, and experiments are selected to illustrate fundamental principles of physics, and demonstrate the relevance of physics to other areas of interest, such as health-related fields and engineering technology. This course focuses on wave phenomena including sound, electricity and magnetism, geometrical optics, and nuclear physics. Examples of applications will be drawn from areas such as medical imaging, human auditory system, human vision, electrical safety, and nuclear medicine. Everyday technologies and phenomena such as musical acoustics, magnetic and optical recording, home wiring, and power generation will be included.

Prerequisite: Qualifying score on math assessment test OR MATH1500 with a grade of "C" or better and PHYS2005 with a grade of C or better

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Solve realistic physics problems related to relevant technology
Use the terminology of physics correctly
Conduct physics experiments in laboratory and field environments
Write comprehensive laboratory reports
Demonstrate an understanding of the importance of physics to communication, electronics, and optical technology
Solve problems involving sound
Calculate the effects of electrostatic force
Solve problems on electric potential
Solve problems in electrical capacitance
Solve problems in DC circuits

Calculate the quantifiable effects of electromagnetism
Solve problems in AC circuits
Solve problems of electromagnetic waves
Apply the physical principles of optics to technology
Apply the principles of nuclear physics to technology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

MnTC Goal Areas: 3.

PHYS 2015 - Introductory Physics II (3)

This course is the second of a two-semester sequence covering the fundamental principles of physics and their applications in technology. While this is a problem-solving course, emphasis is placed on conceptual understanding rather than rigorous quantitative analysis. This course is designed for non-science majors. The course will include lab-like components. Topics include waves, energy, atomic physics, nuclear physics, and Einstein's theories of relativity.

Prerequisite: PHYS2001

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

Apply fundamental physics principles to applications in modern technology
Solve problems using the special theory of relativity
Describe the effect of mass on spacetime
Contrast the differences between Newton's and Einstein's theories of gravity
Solve problems involving waves
Draw conclusions based on data gathered in wave interference simulations
Analyze simulation results, including graphical analysis and analysis of error and uncertainty
Formulate hypotheses to explain differences in wave propagation in different mediums
Construct an argument, based on experimental evidence, that matter and light are waves
Construct an argument, based on experimental evidence, that matter and light are particles
Solve problems regarding the efficiency of various energy sources
Compare and contrast advantages and disadvantages of using fossil fuels, renewable energy resources, and nuclear energy, including consideration of the social and environmental impacts
Explain how a nuclear chain reaction works
Discuss misconceptions about the laws of quantum mechanics
Solve problems involving the uncertainty principle
Describe the difference between different models of the atom

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 2 & 3.

PLBG - Plumbing Technology

PLBG 1000 - Iron and Steel Pipe Procedures (2)

Students will study cast iron and steel piping, which involves the joining of cast iron and steel for drain, waste and vent, compressed air and gas piping systems. Students will become familiar with the different types of cast iron and steel pipe and fittings. Safe methods of handling and installing piping in accordance with general industry accepted standards will be emphasized.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply proper safety techniques and procedures
Operate hand and power cast iron and steel cutting and threading tools
Identify different types of cast iron pipe and fittings
Join cast iron pipe and fittings using industry standard methods and tools of assembly
Identify different types and sizes of steel pipe and fittings
Join steel pipe and fittings using industry standard methods and tools of assembly
Perform hanger installation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PLBG 1005 - Introduction to Plumbing and Safety (2)

Students will study the history of plumbing from a global perspective and discuss current technology, industries, and associations that make up the present day plumbing profession. Students will also study safety on the job site at a level equivalent to a 10 hour OSHA card.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Discuss the history of the plumbing profession
Explain the stages of progress in the plumbing profession
List the responsibilities of a person working in the plumbing industry
Articulate proper safety techniques and procedures
Determine job site hazardous work specific to plumbers
Demonstrate the use and care of appropriate personal protective equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PLBG 1011 - Blueprint Reading and Estimating I (3)

Students will study the different types of plumbing drawings they will encounter on the job including isometric, oblique, orthographic and schematic. Students will also complete an estimate of a residential plumbing system.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize the basic symbols used in plumbing drawings
Identify various plumbing drawings
Explain the types of drawings in a complete set of blueprints
Use an architect’s scale to make drawings to scale
Describe how code requirements apply to certain drawings
Sketch a schematic drawing of a residential plumbing system
Sketch an isometric drawing of a residential plumbing system
Complete an estimate for a residential drain, waste and vent system
Complete an estimate for a residential potable water system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477

Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLBG 1016 - Building Sewers and Drain Systems (3)

This course covers practical experience in the installation of sewers, drain, waste and vent piping by laying out pipe, using a builder's level to establish grade and elevations of the piping, and in a safe and efficient manner. Students will learn the proper installation of plastic and cast iron sewers, drain, waste and vent pipe.

Prerequisite: PLBG1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate effective communication and interpersonal skills
Practice industry safety standards
Identify sewer, drain, waste, and vent drain construction
Install sewer, drain, waste and vent systems with plastic pipe
Repair sewer, drain, waste and vent systems with plastic pipe
Install sewer, drain, waste and vent systems with cast iron pipe
Repair sewer, drain, waste and vent systems with cast iron pipe
Identify storm drain systems
Demonstrate knowledge of plumbing systems test procedures
Demonstrate knowledge of plumbing inspection procedures
Perform plumbing system tests
Perform plumbing inspection procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLBG 1020 - Copper Pipe Procedures (2)

Students will study copper piping, which involves the joining of copper pipes for water supply, distribution and space heating. Students will become familiar with the different types of copper pipe, fittings and tubing. Copper water and heating distribution piping will be discussed and utilized. Safe methods of handling and installing piping in accordance with Minnesota State Plumbing Code and general industry accepted standards will be emphasized.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Identify different types and sizes of copper pipe and fittings
Operate hand & power copper cutting and cleaning tools
Join copper pipe and fittings using appropriate methods and tools of assembly
Identify and comprehend materials and methods of hanger installation
Demonstrate proper installation of copper potable water piping
Demonstrate proper installation of copper piping for hot water heating
Identify hydronic heating system copper components

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PLBG 1025 - Plastic Pipe Procedures (2)

Students will study plastic piping, which involves the joining of plastic pipes for plumbing systems. Students will become familiar with the different types of plastic pipe, fittings and tubing. Safe methods of handling and installing piping in accordance with general industry accepted standards will be emphasized.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply proper safety techniques and procedures
Identify different types and sizes of plastic pipe and fittings
Operate hand and power plastic cutting and cleaning tools
Join plastic pipe and fittings using appropriate methods and tools of assembly
Demonstrate proper installation of plastic potable water piping
Demonstrate proper installation of plastic drain, waste and vent piping
Perform hanger installation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PLBG 1031 - Plumbing Calculations I (3)

Students will study basic math concepts and plumbing terminology and how they apply to on the job situations. Students will use formulas and dimension tables common to the plumbing industry to calculate simple offsets. The use of tape measures to determine lengths of pipe layouts and fitting allowances will be covered. Students will also study the use of an architectural scale.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Recognize plumbing terminology for pipe layouts and fittings
Identify the parts of a fitting in order to use common pipe measuring techniques
Determine fitting allowances and thread makeup using fitting dimension tables
Calculate allowances for pipe fittings
Solve pipe length calculations
Calculate end-to-end measurements using fitting allowances and thread makeup
Identify the common terminology of a 45 degree pipe offset
Calculate the travel measurement of a 45 degree pipe offset
Demonstrate the use of an architectural scale to measure drawn pipe lengths

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PLBG 1035 - Minnesota State Plumbing Code I (3)

Students will study the Minnesota State Plumbing Code including the laws, rules and regulations of plumbing installed in Minnesota. This also includes definitions, general plumbing principles, materials, fixtures and hangers and supports used in construction, repair and remodeling of buildings.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply plumbing definitions
Explain basic and general plumbing principles
Classify materials used for pipes, fittings, joints and connections
Categorize the materials from which traps and cleanouts are made from
Compare fixture materials for the proper use and installation
Label component parts of hangers
Identify the proper installation procedures for hangers and supports
Identify the component parts for potable water system
Identify the component parts for drainage, waste, and vent systems

Explain the qualifications and licensure procedures for licensed plumbers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PLBG 1041 - Plumbing Systems Design (3)

Students will study design of drain, waste and vent systems, potable water systems, hot water sytems, water softening systems, storm water systems and backflow prevention systems.

Prerequisite: PLBG1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a drain, waste and vent system for a residential plumbing system
Design a potable water system for a residential plumbing system
Design a hot water system for a residential plumbing system
Design a water softening system for a residential plumbing system
Design a drain, waste and vent system for a commercial plumbing system
Design a potable water system for a commercial plumbing system
Design a hot water system for a commercial plumbing system
Design a storm water system for a commercial plumbing system
Design a backflow prevention system for a commercial plumbing system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

PLBG 1045 - Minnesota State Plumbing Code II (3)

Students will study the Minnesota State Plumbing Code including the laws, rules and regulations of plumbing installed in Minnesota. This also includes drain, waste and vent systems, potable water supply systems, indirect waste systems, and storm water systems used in construction, repair and remodeling of buildings.

Prerequisite: PLBG1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the chapters of the plumbing code related to sizing plumbing systems
Identify the parts of a drain, waste and vent system
Utilize the code to size a drain, waste and vent system
Identify the parts of a potable water system
Utilize the code to size a potable water system
Identify the parts of a indirect waste system
Utilize the code to size a indirect waste system
Identify the parts of a storm water system
Determine the steps to size a storm water system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 Lab: 2

PLBG 1050 - Plumbing Systems Installation (3)

Students will study the assembly, installation and repair of various types and styles of plumbing fixtures for residential and commercial buildings. Safe methods of handling, installing and repairing fixtures in accordance with Minnesota State Plumbing Code and general industry accepted standards will be emphasized.

Prerequisite: PLBG1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify different types of sinks and faucets
Identify different types of water closets and urinals
Identify different types of tubs and showers
Install water closets and urinals
Repair water closets and urinals
Install bathroom, kitchen, utility and commercial sinks

Repair bathroom, kitchen, utility and commercial sinks
Install bathtubs, whirlpools and showers
Repair bathtubs, whirlpools and showers
Install residential and commercial faucets
Repair residential and commercial faucets

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

PLBG 1055 - Plumbing Internship (2)

Students will work in a plumbing related business applying knowledge, concepts and skills learned in the Plumbing Pre-Apprenticeship program.

Prerequisite: PLBG1035

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Apply proper safety techniques and procedures
Perform quality plumbing installation and repairs
Execute proper care and use of tools
Adapt to changing employer needs

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: OJT: 2

PLBG 1060 - Plumbing Calculations II (3)

Students will study math concepts and plumbing terminology and how they apply to on the job situations. Students will use formulas and dimension tables common to the plumbing industry to calculate simple offsets, rolling offsets,

multiple pipe offsets and offsets on parallel runs of pipe. The use of tape measures to determine lengths of pipe layouts and fitting allowances will be covered.

Prerequisite: PLBG1031

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Determine the run, travel, and rise od an offset
Calculate 22 ½ and 45 degree offsets
Calculate 22 ½ and 45 degree parallel offsets
Calculate 45 degree offsets around obstructions
Determine a true offset
Calculate 22 ½ and 45 degree rolling offsets using constants
Calculate travel on a rolling offset
Solve for center to center measurements
Solve for end to end measurements

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 2

PLBG 1065 - Blueprint Reading and Estimating II (3)

Students will study and interpret civil, architectural, structural, mechanical, electrical and plumbing drawings for a commercial project. Emphasis will be placed on locating plumbing entry points and how to establish piping routes and fixture locations. Students will also complete an estimate of a commercial plumbing system.

Prerequisite: PLBG1011

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret information from given site plans
Locate plumbing entry points, walls, and chases
Establish piping routes in the building
Determine plumbing fixture locations using provided plans
Describe the need for coordination drawings and shop drawings
Sketch a layout for the plumbing systems and fixture rough-ins
Sketch an isometric drawing of a commercial plumbing system
Complete an estimate for a commercial drain, waste, and vent system
Complete an estimate for a commercial potable water system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Eden Prairie Campus: 952-995-1300

Credit Details: Lecture: 2 Lab: 1

PLST - Plastics Engineering Technology

PLST 1008 - Fundamentals of Plastics/Chemistry/Ingredients (4)

This course introduces the student to the history of plastics, current status, and significant organizations within the industry. This course includes health and safety, reading and understanding Material Safety Data Sheets (MSDS). This course includes polymer chemistry, molecules and the special ingredients used to alter and enhance plastics.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Classify natural, modified, synthetic plastics
Characterize commercial plastics
Identify top ten plastics materials
Explore recycling of plastics
Examine disposal by incineration or degradation
Identify organizations in plastics industry
Identify plastics manufacturing hazards
Determine sources of chemical hazards
Analyze material safety data sheet (MSDS)
Analyze basic chemistry
Identify hydrocarbon molecules
Determine types of macromolecules
Characterize commercial plastics
Analyze basic materials
Figure out selection of material grades
Use computerized databases for material selection
Characterize molecular structures organization
Differentiate inter-intra molecular forces
Predict molecular orientation
Identify thermosets
Identify additives
Classify reinforcements
Identify fillers

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 1041 - Introduction to Plastics Molding Processes (3)

This course introduces students to the major molding processes used in converting plastics (polymers) into products. Startup, operation, and shutdown of the compression, injection, extrusion, extrusion blow, rotational and thermoforming molding processes will be covered.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Collect injection molding processing data
Collect compression molding processing data
Examine transfer molding process
Collect extrusion molding processing data
Collect extrusion blow molding processing data
Collect thermoforming processing data
Collect rotational molding processing data

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLST 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power),

Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PLST 1500 - Plastics Processes Lab (1 - 3)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that are beyond the current scope of existing courses. This course will cover the basics of Plastics Processes safety as well as the safe use of Injection or Extrusion molding equipment and its startup, operation and shutdown procedures. Dependent on the needs of each individual class, the specific areas of focus will change to meet the needs of the class.

Prerequisite: Instructors approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Utilize safe working techniques and practices for Injection molding processes
Utilize safe working techniques and practices for Extrusion molding processes
Operate Injection or Extrusion molding equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-3

PLST 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Show enthusiasm
Demonstrate initiative
Use good judgement
Demonstrate courtesy
Exercise punctuality
Demonstrate dependability
Organize work area
Create successful working relationships
Demonstrate safety
Demonstrate prescribed procedures
Apply technical competence
Demonstrate cooperation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

PLST 2007 - Properties and Tests of Selected Plastics (4)

This course is designed to introduce the student to the fundamental methods of identifying plastics, laboratory testing of plastic materials, testing specifications and measurement systems used in the plastics industry. Hands on training

in setup and operation of many types of destructive and non-destructive instruments will be emphasized.

Prerequisite: PLST1008

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Classify materials identification methods
Identify plastics testing agencies
Practice mechanical properties testing
Practice physical properties testing
Practice thermal properties testing
Practice environmental properties testing
Practice optical properties testing
Practice electrical properties testing
Practice chemical properties testing
Figure out processing characteristics tests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2011 - Extrusion Molding Processes I (3)

This course is designed to introduce the student to extruder operation and control - Single Screw, this course teaches the fundamentals of single screw technology, including the knowledge needed to make informed decisions on the production floor. This course includes sheet extrusion technology used in conjunction with the nine lesson single screw extrusion program. Personnel in many functions from machine operators to process engineers will find the information in this course valuable to help make their work with the sheet extrusion process more efficient. This course utilizes an interactive training program using CD-ROM based (software). Set-up, operation and troubleshooting of several extrusion dies and down stream equipment will be emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze single screw extruder: Parts and Operation
Analyze structure of plastic raw materials
Analyze characteristics of plastics for extrusion
Utilize effects of pressure, temperature, and flow
Analyze optimizing extruder controls - Parts 1 & 2
Analyze single screw safety, pre-start, start-up, procedures
Analyze single screw steady state operation, shutdown, and maintenance procedures
Analyze single screw extruder troubleshooting

Analyze sheet extrusion line: Parts and Operation
Analyze sheet extrusion dies
Analyze controlling plastics flow in the die
Analyze plastics behavior in the sheet extrusion line
Analyze sheet line pre-start, start-up, and steady state operating procedures
Analyze sheet line safety and shutdown procedures
Analyze troubleshooting the sheet extrusion line
Practice Output Test on extrusion process
Practice extrusion compounding
Practice extrusion sheet line processing

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLST 2017 - Extrusion Molding Processes II (4)

This course is a continuation of Extrusion Molding Processes I and introduces students to additional single screw extrusion. Content includes compounding with the twin screw extruder which covers basic operations to advanced troubleshooting. This course also includes the usage of plastics drying technology operation, control, and maintenance instruction. This course utilizes an interactive training program using CD-ROM based (software). Emphasis will be placed on startup, setup, operation, teardown, shutdown, and troubleshooting of several extrusion dies, down steam equipment, and plastics molding materials in an effort to produce a quality product.

Prerequisite: PLST2011

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify twin screw - Parts and Operation
Characterize structure and properties of plastics raw materials
Measure effect of pressure, temperature, and flow
Analyze plastics behavior in the compounding twin screw extruder
Determine optimization of twin screw extruder controls
Analyze twin screw safety, pre-start, and startup procedures
Figure out steady-state twin screw procedures
Analyze twin screw extruder troubleshooting
Analyze principles of drying
Practice dryer operation control and maintenance
Practice tubing free extrusion
Practice twin screw compounding extrusion
Practice profile extrusion
Practice blown film extrusion

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2030 - Systematic Medical Device Protocol (3)

This course introduces students to the concepts, principles and specific requirements regarding Food and Drug Administration (FDA) and Good Manufacturing Practices (GMP) that strictly regulate how organizations must adhere to a systematic approach to the production of medical devices.

Prerequisite: Instructors approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify quality system regulations
Identify with quality systems
Identify with design controls
Identify with process validation
Identify with equipment and calibration
Complete device master records
Determine document change control
Analyze product evaluations
Show awareness of quality system audits
Show awareness of factory inspections

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLST 2035 - Medical Device Polymer Processes (3)

This course introduces students to the concepts, principles and specific requirements regarding Food and Drug Administration (FDA) and Good Manufacturing Practices (GMP) that strictly regulate how organizations are to produce medical devices as relates to the extrusion and injection molding processes.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate basics of micro-bore tooling
Identify extrusion downstream equipment
Use offline dimensional and functional metrology
Identify medical grade polymers
Determine proper material drying methods
Demonstrate injection molding operations
Demonstrate extrusion molding operations
Demonstrate procedures used for injection molding processes
Demonstrate procedures used for injection molding auxiliary equipment
Demonstrate injection molding troubleshooting techniques
Demonstrate extrusion molding troubleshooting techniques

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PLST 2128 - Injection Molding Process I (4)

This course is designed to introduce the student to Basic Injection Molding machine operations and operating controls. Content includes Plastics Drying Technology Operation, Control, and Maintenance. Content includes SkillBuilder, a CD-ROM based interactive lab simulator for Basic Injection Molding Technology. Content includes Advanced Injection Molding with emphasis on the relationship between machine controls, plastics behavior during molding and finished part properties. Content includes Optimizing Machine Control Settings 1, 2, 3 and 4. This course utilizes Paulson Training Programs' interactive CD-ROM based (software). This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine basic injection molding machine operation: part I & II
Analyze basic injection molding lessons I - V
Practice principles of drying operation
Practice skillbuilder basic injection molding lab
Analyze advanced injection molding lessons I - VI
Optimize machine control settings I - IV
Practice injection molding process safety procedures
List all components of a conventional mold
List all parameters used to cycle in a mold

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2138 - Injection Molding Process II (4)

This course is a continuation of Injection Molding Process I and is designed to introduce the student to ten (10) lessons of Understanding Materials for Profitable Molding. Each lesson describes the properties and molding characteristics that will improve processing of that material. Lessons include PC, PP, PE, PA, ABS, PS, PMMA, POM, PBT, and TPE. Content includes SimTech, an injection molding machine simulator. Content includes two-sessions on efficient mold setting designed to instruct personnel on proper mold storage, installation, start-up, safety and shut-down procedures. This course utilizes Paulson Training Programs interactive CD-ROM based (software). Hands on training in set-up, tear-down, operation and troubleshooting of several molds to produce a quality product will be emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: PLST2128

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Characterize ten thermoplastic materials for profitable molding
Practice SimTech the injection molding simulator
Demonstrate efficient mold setting installation and setup procedures
Figure out efficient mold setting troubleshooting removal and storage
Develop an injection molding tear-down checklist
Develop an injection molding setup checklist
Demonstrate setting up a conventional two-plate mold
Demonstrate setting up a three-plate mold
Demonstrate setting up a hot sprue bushing mold
Demonstrate setting up a master unit die mold
Demonstrate setting up a hot manifold mold

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2143 - Injection Molding Process III (4)

This course is a continuation of Injection Molding II and is designed to introduce the student to injection molded part problems and solutions. Part defects are described and analyzed to show how each develops. Topics also include an explanation of the cause and effect method of problem analysis used in analyzing and solving all types of production problems. This course utilizes Paulson Training Programs' interactive CD-ROM based software. Content includes set-up, operation and troubleshooting of several types of Injection Molding Machines, Molds and Materials to produce quality plastics molded parts. Optimization of setting and started the mold will be emphasized. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: PLST2138

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Figure out injection molded part problems and solutions
Practice setting and starting the mold
Develop injection molding machine setup procedures
Prepare plastics molding materials
Select materials process temperature control parameters
Determine mold measurements
Practice transporting and installing the mold
Figure out programmable logic control system
Figure out clamp end mechanisms
Figure out injection end mechanisms
Determine mold cooling channels circuitry
Determine mold temperature control parameters
Assemble mold cooling system to the mold
Complete molded plastics part setup
Optimize molded plastics part parameters and conditions
Measure molded plastics parts
Demonstrate mold care and protection procedures
Determine setting up auxiliary process equipment
Analyze mold and process setup
Demonstrate setting and starting two-plate molds
Demonstrate setting and starting three-plate molds
Demonstrate setting and starting hot manifold molds
Demonstrate setting and starting hot sprue bushing molds
Demonstrate setting and starting master unit die molds

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2150 - Design of Experiments (DOE) for Injection Molding (4)

This course is intended to introduce the student to the Design of Experiments. Content includes an overview of how to develop an experiment by explaining common terminology and exploring various DOE techniques, all in an injection molding environment. This course utilizes DOE Wisdom Jr. software, which helps you properly layout the experiments. The book, Design of Experiments for Injection Molding will further enhance your understanding of DOEs. This course also utilizes an interactive training program using CD-ROM based software.

Prerequisite: MATH1050 or MATH1060 and METS1050

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the four plastics variables
Examine the intensification ratio
Figure out cavity pressure
Explain fountain flow
Explain shear heating
Chart gate sealing time
Calculate pressure loss
Examine velocity linearity
Analyze process diagrams
Figure out what a factor is
Figure out what a response is
Differentiate between constant and control factors
Examine the full factorial DOE design
Examine the fractional factorial design
Characterize a steady state condition
Figure out what an interaction is
Identify ANOM
Identify ANOVA
Determine how to optimize more than one response
Utilize DOE software
Figure out how to start a new project
Discover how DOE can help with Six Sigma

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2240 - Scientific Injection Molding I (4)

This course is designed to introduce the student to Scientific/Decoupled/Traditional molding methodologies and techniques, which are critical in medical device and other plastics manufacturing. Content includes plastics materials,

part, mold, and machine considerations. Students will learn molding from the "Plastics Point of View" for design and processing, which includes molding calculations and useful tables, traditional (vs) scientific/decoupled molding, and universal processing parameters. The course also includes practical application of machine control settings, and process monitoring instrumentation. Students also apply their learning on molding problems for practical solutions. This course utilizes Paulson Training Programs, Inc. interactive web-based training.

Prerequisite: Injection Molding certificate or equivalent experience with instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine plastics materials considerations
Examine part design considerations
Examine mold design considerations
Determine molding machine specifications, requirements, calibration
Determine molding calculations
Analyze Traditional molding (vs) Scientific/Decoupled molding
Perform with two-stage molding process controls
Perform with universal processing parameters
Perform with Programmable Logic Control Systems
Optimize machine control settings
Analyze process monitoring instrumentation
Analyze molding problems for practical solutions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2245 - Scientific Injection Molding II (4)

This course is a continuation of Scientific Injection Molding I and is designed to introduce the student to Scientific/Decoupled molding methodologies and techniques, which are critical in medical and other plastics manufacturing. Students will learn Scientific/Decoupled II molding from the "Plastics Point of View", which includes building and documenting a Scientific/Decoupled II process. The course also includes plastics behavior and the molding machine controls, instrumentation devices used in molding, process documentation worksheets with studies and tests. Students will also apply their learning on interpreting machine and cavity pressure curves, and computerized data acquisition devices. This course utilizes Paulson Training Programs, Inc. interactive web-based training.

Prerequisite: PLST2240 and Injection Molding certificate or equivalent with instructor's approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Examine four plastics processing variables
Analyze inter-relationship of materials, molds, machines, and the molding cycle

Optimize plastics behavior and molding machine controls
Determine instrumentation devices for hydraulics and electrics
Determine in-mold sensor locations and placements
Build Scientific/Decoupled II process
Document Scientific/Decoupled II process
Perform zero down "Quality Part" molding cycle
Complete process worksheets studies and tests
Interpret machine and cavity pressure curves
Analyze computerized data acquisition devices
Differentiate between a Scientific/Decoupled II and a Scientific/Decoupled III process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2250 - Scientific Injection Molding III (4)

This course is a continuation of Scientific Injection Molding II and is designed to introduce the student to Scientific/Decoupled III molding strategies and techniques, which are critical methods, techniques, and strategies in medical devices and other plastics manufacturing. The content includes practical application of cavity pressure control, instrumentation, and data acquisition to accomplish Scientific/Decoupled III molding and process control. Students will also apply their learning and skills on understanding Scientific/Decoupled III molding practices to produce process repeatability by machine and mold monitoring techniques to achieve the process control solutions.

Prerequisite: PLST2245 and Injection Molding certificate or equivalent experience with instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Analyze the "Four Primary Plastics Conditions" and their effects on molded part properties
Demonstrate data acquisition device controls
Setup data acquisition devices
Analyze data acquisition graphs and templates
Develop machine and cavity pressure curves
Connect instrumentation devices
Evaluate machine process capability performance
Interpret cavity pressure curves
Analyze process repeatability and robustness
Create Scientific/Decoupled III process from a Scientific/Decoupled II process
Demonstrate template matching methods using save and control techniques
Determine cost effective benefits of Scientific/Decoupled molding

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 3 lab: 1

PLST 2300 - Plastics Engineering Technology Internship (4)

This course provides students with an internship experience in Plastics. Students are evaluated by predetermined curriculum objectives agreed upon by the employer, instructor and student. The student is expected to interview for and acquire an internship site.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Exhibit enthusiasm
Demonstrate initiative
Display judgment
Demonstrate courtesy
Display punctuality
Demonstrate dependability
Organize work area
Create successful working relationships
Demonstrate safety
Follow prescribed procedures
Display technical competence
Demonstrate cooperation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 4

PSYC - Psychology

PSYC 2300 - General Psychology (3)

Psychology is the scientific study of human behavior and mental processes. This introductory course provides a broad overview of topics including: the evolution of psychology, the biological bases of behavior, sensation and perception, consciousness, learning, memory, intelligence, motivation, emotion, human development, personality, research methods, psychological disorders, treatments of psychological disorders, and social psychology.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe psychology using modern and historical approaches
Explain why psychology is a scientific discipline
Describe the major divisions, function, and structures in the human nervous system
Explain the function and locations of primary structures in the human brain
Examine sensations and perceptions
Examine states of consciousness
Examine major theories, common behaviors, and applications of hypnosis
Explain classical conditioning
Apply the principles of operant conditioning
Examine the processes involved in human memory
Explain remembering and forgetting
Compare theories of intelligence
Contrast major theories of motivation
Examine the biopsychosocial influences involved in emotion
Examine major developmental theories and biopsychosocial influences from infancy to childhood
Examine major developmental theories and biopsychosocial influences from adolescence to adulthood
Contrast the psychoanalytic, humanistic, trait, and social-cognitive perspectives and theories of personal
Contrast projective and objective tests
Compare diagnostic criteria and treatments of common dissociative disorders, mood disorders, schizophrenia, and personality disorders
Summarize early treatments of mental disorders
Compare types of therapists and major approaches used in psychotherapy

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5.

PSYC 2310 - Psychology Throughout the Lifespan (3)

This course explores human development across the lifespan. The developmental process will be viewed from the theoretical, physical, cognitive, and psychosocial perspectives. This course will examine the complete lifespan, beginning with prenatal development and progressing through the process of death and dying.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explore major theories pertaining to human development
Describe fetal development
Examine psychosocial, physical, and cognitive development in childhood
Examine psychological, physical, and cognitive development in adolescence
Examine psychosocial, physical, and cognitive development in adulthood
Identify temperamental differences
Explore the process of aging
Identify personal views toward death and dying
Explore abnormal human development
Explore cultural and familial influences on human development
Analyze personal views toward death and dying
Apply theories of development to life experiences
Apply theories of development to projected life experiences
Describe current research in developmental psychology

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 7.

PSYC 2320 - Psychology of Living in the 21st Century (3)

Road rage, computer viruses, technological advances, and information overload can all contribute to our experience of anxiety, depression, insomnia, anger, and stress! This course will explore the psychological, social, and physical effects of living in the 21st century. Vulnerable areas in close relationships, career-life balance, physical health, mental health and communication will be examined. Strategies for successful adaptation will be contrasted with ineffective lifestyle patterned responses. Effective and ineffective coping skills will be explored to encourage more successful adaptation to our ever-changing world.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe how technological advances contribute to adjustment demands and challenges
Contrast theories of personality
Identify major types of stress
Identify adaptive and maladaptive cognitive coping strategies
Describe self-concept, self-esteem, and self-regulation
Identify types of prejudice and prejudice reduction strategies
Apply effective communication strategies
Discuss close relationships, attraction, and relationship development

Identify vulnerable areas in marital adjustment, divorce, and alternatives to marriage
Contrast gender similarities and differences
Explore human adjustment across the lifespan using the biopsychosocial model
Explore career development, career transitions, career hazards, and work-life balance
Explore human sexuality using the biopsychosocial perspective
Understand interactions relating to psychoneuroimmunology
Contrast psychological disorders and treatment options

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5.

PSYC 2330 - Abnormal Psychology (3)

This course explores psychopathology using a multidimensional approach. Emphasis will be on etiology, classification, assessment, terminology, and treatment of major psychological disorders, and content will be organized using the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Mental disorders will be explored along a continuum of abnormality, and in the context of their overlapping biological, developmental, psychological, and sociocultural influences.

Prerequisite: Qualifying score on reading assessment OR ENGL0921 and PSYC2300 recommended. Basic computer literacy skills required

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe abnormality using historical, modern, and biopsychosocial perspectives
Apply the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria to case studies and scenarios which depict persons with mental disorders
Identify the correlates of major mental disorders, including symptoms, course, incidence, prevalence, etiology, prognosis, and treatments
Describe protective factors, risk factors and prevention strategies that may reduce onset of mental disorders
Compare the major perspectives used to explain etiology, assessment, and treatment of psychopathology (biological, psychodynamic, humanistic, cognitive-behavioral, and sociocultural models)
Identify assessment techniques and research methods used to diagnose abnormal behavior and mental disorder
Describe demographic and sociocultural factors that influence the expression, course, development and treatment, and prevalence of maladaptive behavior and psychiatric illness
Summarize the benefits, critiques, limitations, risks and implications of diagnosis and classification
Identify common types and qualifications of mental health professionals treating persons with mental disorders

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 7.

PWRK - Public Works

PWRK 1001 - Introduction to Public Works Employment (3)

This course is designed to give a general overview of Public Works. The course will also give an overview of the systems typically managed and called upon by public works professionals. The course will focus on the employee's role in providing support and service delivery to the public.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define the roles of Public Works employees
Identify communications styles
Complete a job application
Examine conflict in the workplace
Describe effective problem solving methods
Describe customer service

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1005 - Introduction to Maintenance Operations and Activities (3)

This course prepares the student to qualify for an entry level position in public works. The course examines public works departments and reviews the purpose and work expectations of these departments.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Develop a list of maintenance activities related to facilities
Review trends in maintenance and operations
Define customer expectations
Identify processes involved with storm water control
Manage work related activities
Identify activities designed to protect public investment
Identify methods to ensure employee safety

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1010 - OSHA 510 (2)

This course provides a variety of training for safety responsibilities including: introduction to OSHA, recordkeeping basics, regulations and general safety and health provisions. This course will also cover fall protection, the hazards of electrical operations, hazards of falling objects, and confined space and collapse hazards. Personal protective and life saving equipment, health hazards in construction, and stairways and ladders are also included.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify OSHA construction regulations
Identify general safety and health provisions
Identify requirements for competent persons
Prepare OSHA recordkeeping forms
Recognize the electrical safety requirements
Recognize fall protection hazards
Demonstrate use of personal protective and lifesaving equipment
Demonstrate use of hand and power tools
Recognize excavation hazards
Recognize stairway and ladder safety issues

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

PWRK 1015 - Emergency Response for Public Workers (2)

This course is designed to develop operational skills and procedures for individuals to recognize, evaluate, and provide support services in an emergency or disaster situation, understand the purpose and use of the National Incident Management System (NIMS) and the Incident Command System (ICS), and perform job related responsibilities in compliance with Federal, State, and Local regulations. Students will learn how to manage an emergency medical situation through basic First Aid, CPR and AED until emergency personnel arrive.

Prerequisite: Students must have a CURRENT OSHA 510 - 30 Hour for Construction OR OSHA 511 - 30 Hour for General Industry course certification card from an OSHA training institute class provider. Students must bring your CARD for verification to the FIRST class

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify OSHA Regulations
Evaluate a disaster site
Assign disaster worker responsibilities using an Incident Command Structure (ICS)
Identify disaster site safety and health hazards
Identify Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) agents and symptoms
Demonstrate proper procedures for use of personal protective equipment
Demonstrate proper use of respiratory protection equipment
Identify symptoms of traumatic incident stress syndrome
Demonstrate CPR with use of Automatic External Defibrillator (AED)
Manage basic first aid emergencies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

PWRK 1020 - Basic Engine Repair (3)

In this course, students will study the theory of two and four cycle engines and perform basic maintenance on common outdoor power equipment used in public works. Students will learn the proper names and uses of tools used in industry. Students will diagnose engine problems, inspect and identify system components. Topics of shop safety, fuels, tune-ups and basic electricity will also be covered.

Prerequisite: Must have Public Works as a declared Major

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements

and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safety practices
Perform engine maintenance
Diagnose engine problems
Compare the difference between a two-stroke and a four-stroke engine
Explain engine component functions
Identify parts of an engine
Explain 2 stroke theories
Explain 4 stroke theories

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PWRK 1025 - Street Maintenance, Materials and Applications (3)

The purpose of this course is to provide students with an introductory knowledge and understanding of the basic aspects of street and roadway design, construction and maintenance.

Prerequisite: Qualifying score on reading assessment test OR ENGL0901 and must have Public Works as a declared Major

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the different public works principles as they relate to street and roadway design, construction and maintenance
Identify the safety considerations that must be considered when working in traffic and the right-of-way
Identify and select the proper high visibility garments needed for roadway and right-of-way work
Evaluate various roadway designs and their ability to manage intended traffic and weather patterns
Identify the individual components of street and roadway geometric designs and how they are implemented
Demonstrate the basic aspects of horizontal and vertical field surveying
Identify the physical materials properties for soils, concrete and asphalt
Demonstrate the proper inspection techniques for soils, concrete and asphalt
Demonstrate procedures and processes used for street and roadway maintenance and construction

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1030 - Trenching/Excavation Safety (3)

This program is designed to train the students about trenching and excavating, and the equipment used in the day to day operations. Students will learn the safety procedures and hazards associated with the equipment and trenching and excavating in general.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate around excavation sites
Complete daily safety checks
Identify defects on equipment
Provide proper usage of the equipment
Manage work related activities
Provide maintenance on the equipment
Analyze the soil being excavated
Characterize dangers around an excavation site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PWRK 1035 - Confined Space Safety (3)

This course is designed to enable students to recognize, evaluate, prevent, and abate safety and health hazards associated with confined space entry. Technical topics include the recognition of confined space hazards, basic information about instrumentation used to evaluate atmospheric hazards, and ventilation techniques. This course features workshops on permit entry classification and program evaluation.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:

Identify confined space regulations
Identify general safety and health provisions
Identify the requirements of the competent person
Prepare confined space record keeping forms
Recognize potential hazards such as electrical and falls
Demonstrate the use of personal protective and life saving equipment
Demonstrate the use of monitoring equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1040 - Mechanized Equipment Operation (3)

This program is designed to get students more familiar with mechanized equipment used in day to day operations of the public works department. Students will learn how to properly use equipment in order to prevent potential hazards.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Use mechanized equipment safely
Administer daily safety checks
Identify defects on equipment
Conduct general maintenance on equipment
Identify proper usage of equipment
Conduct work related activities
Prepare maintenance records
Uphold safety policies and procedures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

PWRK 1045 - Practical Skills for Public Works (4)

This class will introduce basic skills with practical application of industry safety principles. Instruction will include tube and pipe fabrication,sheet metal fabrication, and construction of series and parallel electrical circuits. Students will also be introduced to the material necessary for obtaining a State of MN Special Boilers License.

Prerequisite: Must have Public Works as a declared Major

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate safe practices in accordance with OSHA and industry standards
Construct a tubing and a pipe project
Fabricate series and parallel electrical circuits
Analyze series and parallel electrical circuits
Recognize potential hazards associated with public works activities
Demonstrate the use of lock out tag out
Demonstrate the use of fire suppression equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 4

PWRK 1050 - Introduction to Municipal Utilities (3)

This course is designed to give an individual a general overview of public utilities; its organizational structure, function, responsibilities, operation and maintenance. It will also give an overview of the systems typically managed and called upon by public works professionals to assure responsible service delivery to the public. The course will focus on the public works employee's role in providing support and service delivery to the public.

Prerequisite: Must have Public Works as a declared Major

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the different roles of local, state and federal agencies as they relate to water distribution
Identify different water storage facilities and their roles
Identify materials used in water main construction
Select appropriate Personal Protective Equipment (PPE) necessary for excavation of water lines
Demonstrate location and identification of underground utilities
Demonstrate water sampling and contaminate evaluation
Identify treatment options for contaminated water stores
Identify the components of a city water system
Demonstrate methods used for leak detection, system flushing, locating water main breaks and disinfection

Evaluate emergency plans and inspection records

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1055 - Public Works Safety (3)

This course provides a variety of training for safety responsibilities including; introduction to OSHA (Occupational Safety and Health Hazards). This course is also designed to develop operational skills and procedures for individuals to recognize, evaluate, and provide support services in an emergency. Students will also learn NIMS (National Incident Management System) and what roles they may play within this system.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL0930

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify OSHA construction regulations
Administer electrical safety requirements
Acquire general safety and health provisions
Categorize fall protection hazards
Demonstrate use of personal protective and life saving equipment
Discover proper use of hand and power tools
Evaluate a disaster site
Assign disaster worker responsibilities using the National Incident Management System
Demonstrate CPR with the use of Automatic External Defibrillator (AED)
Manage basic first aid emergencies

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1065 - Introduction to Park Maintenance (3)

The purpose of this course is to provide students with an introductory knowledge and understanding of the basic aspects of Park and Recreation maintenance and facilities.

Prerequisite: Must have Public Works as a declared Major

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify various park and recreation facilities
Implement proper safety inspection techniques
Compare construction methods of facilities
Use effective safety procedures
Contrast various work place roles
Appraise maintenance procedures of facilities
Employ effective communication methods
Compare various types of parks
Discover maintenance challenges

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

PWRK 1070 - Commercial Driver's License Class B Training (2)

This commercial truck driving course will help the student develop the knowledge and driving skills needed to obtain your Class B driver's training license which is required to operate Public Works vehicles. Students will learn safe driving operations along with knowledge about air brake systems, pre-trip inspections, and defensive driving.

Prerequisite: Must be 18 years of age, possess a valid MN driver's license and meet all qualifications specified by MN Statute

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Evaluate vehicle inspections
Demonstrate safe operation with a snow plow
Administer inspection and operation of various components
Manipulate various driving procedures
Utilize different shifting methods
Implement different seeing challenges
Acquire proper signaling communications methods
Diagnose controlling speed

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

PWRK 1100 - From Line to Leadership: Transitioning from Operations to Supervision (2)

This class is tailored for the new supervisor and those thinking of taking their career to the next level. Built on solid leadership practices, the session focuses on necessary supervisory skills, tips for developing personal influence, avoiding common pitfalls, and identifying ways to make the most of the leadership opportunity. The open discussion format and problem-solving exercises are an excellent way to prepare new leaders for their changing role.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate critical thinking in the assessment of workplace scenarios
Differentiate between good and poor supervisory actions
Acquaint self with a distinct leadership profile
Indicate personal readiness to take on additional responsibility at work
Employ attributes needed for project management and group interactions
Summarize a personal response to a given leadership situation

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 2

PWRK 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by

the student and the instructor and submitted to the registrar at the time of registration.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Course outcomes addressed will depend on the area and type of specialization the student wishes to study, and will be defined in the "Specialized Lab Training Agreement".

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lab: 1-4

PWRK 2000 - Public Works Internship (3)

This internship will provide the student with on-the-job training within Public Works. The student will use the knowledge and skills learned during course work and apply it to work assignments.

Prerequisite: PWRK1020, PWRK1025, PWRK1045, PWRK1050, and PWRK1065

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Demonstrate awareness of applicable OSHA standards for safe operation during assigned duties
Participate in public works project by the selection and application of appropriate tools, materials and methodology
Perform maintenance on assigned equipment
Operate safely mechanized equipment related to assigned functions
Demonstrate proper use and purpose of specific tools related to assigned public works functions
Participate in a public works project related to the specialization field the student has selected within the program
Explain the importance of accurately completing and filing work orders
Describe appropriate customer service
Describe the difference within public work divisions and its role in local government

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: SOE: 3

SOCI - Sociology

SOCI 2000 - Marriage and Family (3)

Marriage and Family is the sociological study of the relationship of family life and society. This course will introduce the student to historical family perspectives, cross-cultural family perspectives, gender role expectations of the family, gender stratification within families, and societal norms and expectations of the institutions of marriage and family.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer skills recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify key concepts of marriage and family
Compare and contrast current family structures
Differentiate theories within marriage and family
Compare and contrast historical family structures
Identify socialization expectations of family members
Identify consequences of sexual, emotional, and physical abuse within families
Compare and contrast historical and present day gender roles
Identify social causes attributed to family status
Differentiate social research methods used to study marriage and family

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 7.

SOCI 2100 - Introduction to Sociology (3)

Sociology is the systematic study of the relationship between the individual and their society. In this course students will be introduced to sociological concepts and theories that explain the impact of culture, social structures, and institutions on individuals, and the impact of individuals on their social world.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer skills recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify key concepts of sociology
Differentiate sociological theories
Differentiate research methods used in sociology
Identify the causes and consequences of social inequalities
Apply a sociological perspective to social issues
Apply key concepts to real world examples
Analyze real world examples using sociological theories
Compare and contrast cultural practices between social groups
Compare and contrast social structures and institutions

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 2 & 5.

SOCI 2120 - Introduction to Criminal Justice (3)

This course explores the foundations, organization and function of the criminal justice system in the United States. Topics include crime and victimization, constitutional law, policing, courts, corrections, juvenile justice and current issues in criminal justice.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL0930. Basic computer skills recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the legal foundations of the criminal justice system
Differentiate between types of crime
Compare patterns of crime and victimization
Trace the history of policing
Differentiate between models of policing
Apply constitutional law to due process in policing
Explain the organization of the court system
Describe the adjudication process
Differentiate between forms of corrections
Compare prison culture with life after re-entry
Explain the relationship between the adult and juvenile justice systems
Analyze contemporary issues in criminal justice

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-993-1300

Credit Details: Lecture: 3

MnTC Goal Areas: 5 & 9.

SOCI 2130 - Food, Culture and Society (3)

This is a course about the social relations of our food system: how we produce, distribute, prepare and consume our food. Students will explore topics of culture, identity, and history as well as the effects of our food system on public health, social inequality, and the environment on both a local and global level. Students will also explore alternatives to the current food system.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer skills recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Explain the social construction of food
Explain the relationship between food and identity
Trace changes in our food system through human history
Diagram the parts of the food system
Analyze the relationship between the food system and public health
Analyze the relationship between the food system and social inequality
Analyze the relationship between the food system and the environment
Differentiate food-based social movements
Evaluate solutions to food system problems

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 10.

SOCI 2200 - Racial and Ethnic Relations (3)

This course is an introduction to the history and theories of race, ethnicity, and racism in the United States. Students will explore the social construction of race as a concept, the processes by which social institutions create and reproduce racial inequalities, and the role of social movements in bringing about social change. Students will learn to analyze current race relations from multiple perspectives.

Prerequisite: Qualifying score on reading assessment test OR ENGL0921 and Qualifying score on writing assessment test OR ENGL1021 or ENGL1026. Basic computer skills recommended

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Trace the social construction of race and ethnicity through history
Describe the complexities of racial and ethnic identity
Explain the importance of historical events and processes for current racial and ethnic relations
Identify patterns of inequality between racial and ethnic groups
Explain how systemic racism in social institutions creates and reproduces racial and ethnic inequality
Differentiate between individual prejudice, systemic racism and racist cultural ideologies
Describe the impact of cultural, social, political, and economic change on racial and ethnic relations
Analyze the role of racial and ethnic-based social movements in social change
Demonstrate effective communication about race and ethnicity skills in diverse groups

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus and Eden Prairie Campus: 952-995-1300

Credit Details: lecture: 3

MnTC Goal Areas: 5 & 7.

WLDG - Welding and Metal Fabrication

WLDG 1000 - Cutting Processes (3)

This course will cover cutting operations utilizing gas, plasma, carbon-arc and computer numerical control (CNC) plasma cutting table equipment. Students will learn how to cut straight lines, holes and bevels on steel, aluminum and stainless steel. Important health and safety precautions will also be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify important health and safety precautions
Operate gas cutting equipment
Cut straight lines, round holes and piercing round holes utilizing the gas cutting process
Cut forty-five and sixty degree bevels utilizing the gas cutting process
Operate plasma cutting equipment
Cut straight lines, round holes and piercing holes utilizing the plasma cutting process on steel
Cut straight lines, round holes and piercing holes utilizing the plasma cutting process on aluminum
Cut straight lines, round holes and piercing holes utilizing the plasma cutting process on stainless steel
Operate carbon-arc equipment
Perform carbon-arc beveling and straight line cutting
Operate track torch machines with oxyacetylene gas
Cut straight line, forty-five and sixty degree bevels with track torch cutting machines

Program CNC plasma cutting tables
Perform cutting operations utilizing CNC plasma cutting tables

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1010 - Practical Application for Estimating and Layout (2)

This course covers the fundamental information and practices required to properly estimate the amount of materials necessary for various manufacturing processes. The student will use common problem solving methods and will convert units of measure that are utilized in the manufacturing industry. The student will interpret the geometry of commonly used materials and study their manufacturing application trends. Various methods of material layout will also be practiced along with an introduction to the use of basic welding and cutting equipment.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Practice industry safety procedures
Determine material quantities
Interpret various measuring units
Identify measuring tools
Lay out geometric profiles
Measure geometric features
Solve problems with equations
Produce lab projects
Operate welding and cutting equipment

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

WLDG 1075 - Careers in Manufacturing (2)

This course introduces students to the skills, technology, work environment, potential salary, and job placement for occupations in the fields of Machine Tool Technology, Mechatronics (Automation Robotics, Electronics, Fluid Power), Welding and Metal Fabrication, Plastics Engineering Technology, and Engineering CAD (Computer-Aided Design) Technology. This dynamic course includes industry-specific tours, as well as hands-on projects that familiarize students with field practices and shop safety. A technical aptitude assessment will be administered to assist students in determining if a career in manufacturing fits with their interests and abilities. The steps for enrolling in a program at HTC will be reviewed.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe the characteristics of a career in Machine Tool Technology
Describe the characteristics of a career in Mechatronics
Describe the characteristics of a career in Welding and Metal Fabrication
Describe the characteristics of a career in Plastics Manufacturing Technology
Describe the characteristics of a career in Engineering CAD Technology
Apply shop safety principles
Determine the manufacturing career fields best suited to individual attributes and interests

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 1 lab: 1

WLDG 1100 - Oxyacetylene Welding (3)

This course introduces students to the oxyacetylene welding process including terms and safety procedures. Students will learn how to setup, adjust and shut down oxyacetylene equipment. Students will learn how to deposit stringer beads in the flat position. Students will also be able to produce fillet lap and inside corner joint welds in the horizontal and vertical position and square joint butt welds in the flat, horizontal, vertical and overhead position. Weld inspections will also be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Define welding terms, positions and nomenclature
Describe the oxyacetylene welding process
Identify important health and safety precautions
Operate oxyacetylene welding equipment
Deposit stringer beads in the flat position without and with filler metal

Produce fillet weld lap joints in the horizontal position
Produce fillet weld inside corner joints in the horizontal position
Produce fillet weld inside corner joints in the vertical up position
Produce fillet weld lap joints in the vertical up position
Inspect welds for quality
Produce square groove butt joint welds in the flat position
Produce square groove butt joint welds in the vertical up position
Produce square groove butt joint welds in the overhead position
Produce square groove butt joint welds in the horizontal position

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1135 - Gas Metal Arc Welding I (3)

This course teaches students identification and MIG welding equipment, joint design, welding terms and safety procedures. Students will learn setup, operation and perform bead, single and multiple pass butt and tee, lap and outside corner welds in the flat, horizontal positions. Students will also identify and describe personal shop and other related safety rules. The students will be required to identify shop and personal safety rules to 100% accuracy. This course will also require identification and performance of wire type and diameter and equipment on 3/16 inch and thicker plate steel. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe welding terms, test positions and nomenclature
Describe the gas metal arc welding process
Identify important safety rules
Operate gas metal arc welding equipment
Weld in the flat position utilizing surfacing technique
Produce square groove and fillet welds in the flat position
Produce square groove and fillet welds, butt, lap and T-joints in the horizontal position
Discuss the effect that gas metal arc welding variables have on the quality of welds
Apply square and fillet welds to produce lab project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and

college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1140 - Gas Metal Arc Welding II (3)

Students will learn how to produce square groove and fillet butt, lap and T-joint welds in the flat, horizontal, vertical and overhead positions to the Guided Test Bend standard. Students will also be able to produce single V-groove butt joint welds in the horizontal and vertical position to the Guided Bend Test standard. The effect of shielding gases on metal transfer will be examined. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1135 and WLDG1182 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce square groove and fillet butt, lap and T-joint welds in the vertical down position
Produce square groove and fillet butt, lap and T-joint welds in the vertical up position
Examine the effect of shielding gases on metal transfer
Produce square groove and fillet butt, lap and T-joint welds in the overhead position
Produce single V-groove butt joint welds in the horizontal position
Produce single V-groove butt joint welds in the horizontal position to Guided Bend Test standard
Produce single V-groove butt joint weld in the vertical down position
Produce single V-groove butt joint weld in the vertical down position to Guided Bend Test standard
Apply square and single groove welds to produce lab project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1165 - Gas Metal Arc Welding III (3)

Students will learn how to produce single V-groove butt joint welds in the vertical up, flat and overhead position. Fillet lap and T-joint welds in the horizontal and vertical down position will be included. Students will also be able to utilize the spray transfer method to produce fillet lap joint welds in the flat and horizontal position and single V-groove welds in the flat position. Students will have the option to further develop their knowledge and skills to prepare for the Gas Metal Arc Welding Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce single V-groove welds in butt joints in the vertical up position
Produce single V-groove welds in butt joints in the flat position
Produce single V-groove welds in butt joints in the overhead position
Produce fillet welds in lap joints and T-joints in the horizontal position
Produce fillet welds in lap joints and T-joints in the vertical down position
Produce fillet welds in lap joints in the flat position with spray transfer
Produce fillet welds in lap joints in the horizontal position with spray transfer
Produce single V-groove welds in the flat position with spray transfer
Apply single V-groove, fillet lap joint and T-joint welds to produce lab project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1175 - GMAW Fabrication Methods (3)

In this course you will learn to combine your gas metal arc welding skills to fabricate various types of weldments using proper layout procedures. Complete drawings with welding symbols, bill of materials and cost estimates will also be required. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1140 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a project that utilizes surfacing, square groove, fillet and single V-groove welds in the flat, horizontal, vertical and overhead positions
Integrate butt, lap and T-joints into project design and construction
Integrate cutting, forming, drilling and punching operations into project design and construction
Identify tools and equipment required to complete the project
Develop drawings with welding symbols, dimensional accuracy and tolerance requirements for instructor approval
Develop bill of materials with cost estimates
Develop schedule for project completion with periodic instructor inspections
Determine work area for project development
Produce project
Inspect quality of welds

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may

include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1182 - Blueprint Reading for Welders (2)

This course provides students with the knowledge and skills necessary to identify welding symbols and manipulate fractions, decimals and metric units. Students will be able to convert measurements and determine weld specifications from engineering drawings. Students will also be able to identify, measure and inspect weldment components and assemblies given a bill of materials and a drawing.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Interpret welding symbols
Describe elements of the welding symbol system
Manipulate fractions, decimals and metric units
Convert measurements as required on engineering drawings
Determine location, length, size and contour of welds as specified on drawings
Determine filler metal type and welding procedures
Describe different set-up tools and their applications
Set-up a weldment given a drawing and set-up tools

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2

WLDG 1220 - Gas Tungsten Arc Welding I (3)

This course introduces students to the gas tungsten arc welding process including equipment, terms and safety procedures. Students will learn how to setup, adjust and shut down gas tungsten arc welding equipment. Students will be able to deposit stringer beads in the flat position, produce fillet weld lap joints in the flat and horizontal position and produce fillet weld outside corner joints in the flat position. The metallurgy and weldability of carbon steel will also be covered. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe welding terms, test positions and nomenclature
Describe the gas tungsten arc welding process
Identify important safety rules
Operate gas tungsten arc welding equipment
Deposit stringer beads in the flat position with carbon steel
Describe how the variables of gas tungsten arc welding effect the quality of welds
Produce lap joint fillet welds in the flat and horizontal position with carbon steel
Describe the metallurgy and weldability of carbon steel
Produce outside corner joint fillet welds in the flat position with carbon steel

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1225 - Gas Tungsten Arc Welding II (3)

This course covers fillet T-joint welds and square-groove welds with carbon steel including destructive testing. Students will learn how to perform gas tungsten arc welding using pulsed current. Students will also be able to produce square groove and fillet welds with stainless steel. Visual inspection tests with stainless steel and the welding characteristics of stainless steel are included. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1182 and WLDG1220 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce fillet welds in T-joints in the horizontal, vertical up and flat positions using carbon steel
Produce fillet welds in T-joints in the overhead position using carbon steel
Produce square-groove welds in butt joints in the flat position using carbon steel
Perform destructive tests on 1G square-groove welds using carbon steel
Produce square-groove welds in butt joints in the horizontal and vertical up positions using carbon steel
Produce square-groove welds in butt joints in the overhead position using carbon steel
Describe the gas tungsten arc welding process using pulsed current
Produce square-groove welds in butt joints in the flat position using stainless steel
Describe the welding characteristics of stainless steel
Produce square-groove welds in butt joints in the horizontal position using stainless steel
Produce fillet welds in lap joints in the horizontal and flat positions using stainless steel
Produce fillet welds in outside corner joints in the flat position using stainless steel
Produce fillet welds in T-joints in the horizontal, vertical up and flat positions using stainless steel
Perform visual inspection tests on stainless steel

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1235 - Gas Tungsten Arc Welding III (3)

Students will learn how to weld aluminum using the gas tungsten arc welding process. Students will learn how to deposit stringer beads in the flat position. Students will be able to produce outside corner fillet welds in the flat and vertical up position and lap joints in the horizontal and flat position. Square-groove butt welds in the flat position and T-joint fillet welds in the horizontal, flat and vertical up position will also be covered. Visual inspection tests on aluminum are included. Students will have the option to further develop their knowledge and skills to prepare for the Gas Tungsten Arc Welding Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1225

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following goals will beaddressed in the course:
Describe the characteristics of aluminum
Deposit stringer beads in the flat position (Aluminum)
Describe the effect of process variables on the welding arc
Produce fillet welds in outside corner joints in the flat position (Aluminum)
Produce fillet welds in outside corner joints in the vertical up position (Aluminum)
Produce fillet welds in lap joints in the horizontal and flat positions (Aluminum)
Produce square-groove welds in butt joints in the flat position (Aluminum)
Produce fillet welds in T-joints in the horizontal and flat positions (Aluminum)
Produce fillet welds in T-joints in the vertical up position (Aluminum)
Conduct visual inspection test (Aluminum)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1245 - GTAW Fabrication Methods (3)

In this course you will learn to combine your gas tungsten arc welding skills to fabricate various types of weldments using proper layout procedures. Complete drawings with welding symbols, bill of materials and cost estimates will also be required. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1181 and WLDG1225 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a project that utilizes fillet and square groove welds in the flat, horizontal, vertical and overhead positions
Integrate butt, lap and T-joints into project design and construction
Integrate cutting, forming, drilling and punching operations into project design and construction
Identify tools and equipment required to complete the project
Develop drawings with welding symbols, dimensional accuracy and tolerance requirements for instructor approval
Develop bill of materials with cost estimates
Develop schedule for project completion with periodic instructor inspections
Determine work area for project development
Produce project
Inspect quality of welds

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1310 - Shielded Metal Arc Welding I (3)

This course introduces students to the shielded metal arc welding process including equipment, terms and safety procedures. Students will learn how to strike and control arc to produce quality welds. Students will learn how to deposit a pad of beads in the flat position. Students will be able to produce lap joint fillet welds in the horizontal position and E6010 pad of beads in the flat position. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: None

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe welding terms, test positions and nomenclature
Describe the shielded metal arc welding process
Identify important safety rules
Describe how the five essentials of shielded metal arc welding effect the quality of welds
Control the arc to produce quality welds
Produce pad of beads in flat position

Produce lap joint fillet welds in the horizontal position
Produce E6010 pad of beads in the flat position
Maintain quality control

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1320 - Shielded Metal Arc Welding II (3)

In this course, students will learn how to produce three-bead T-joint fillet welds, T-joint and lap joint fillet welds and butt joint square -groove welds. Students will also be able to deposit E6010 pad of beads and stringer beads. Electrode selection, power sources, destructive testing and distortion control will be included. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1181 and WLDG1310

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce three-bead fillet welds in T-joints in the horizontal position
Perform destructive test on fillet welds in T-joints in the horizontal position
Deposit pad of beads in the horizontal position
Produce square-groove welds in butt joints in the horizontal position
Perform destructive test on square-groove weldsin butt joints in the horizontal position
Select electrodes
Produce fillet welds in lap joints in the vertical up position
Produce fillet welds in T-joints in the vertical up position
Produce three-bead fillet welds in T-joints in the vertical up position with 2 weave beads
Produce square-groove welds in butt joints in the vertical up position
Perform destructive test on square-groove welds in butt joints in the vertical up position
Determine power sources
Produce fillet welds in lap joints in the overhead position
Produce three-bead fillet welds in T-joints in the overhead position
Perform destructive test on fillet welds in T-joints in the overhead position
Produce square-groove welds in butt joints in the overhead position
Describe distortion control

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations

process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1330 - Shielded Metal Arc Welding III (3)

Students will learn how to produce fillet welds in lap and T-joints, stringer beads, and square-groove welds in butt joints using the shielded metal arc welding process. Multi-pass fillet welds in lap and T-joints will also be covered. Low hydrogen electrodes will be included. Students will have the option to further develop their knowledge and skills to prepare for the Shielded Metal Arc Welding Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1320

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce fillet welds in lap and T-joints in the horizontal and vertical positions
Deposit stringer beads in the flat, horizontal and vertical positions
Produce fillet welds in lap joints in the vertical down position
Produce square-groove welds in butt joints in the flat position and fillet welds in lap and T-joints in the horizontal position
Select low hydrogen electrodes
Produce multi-pass fillet welds in T-joints in the vertical up position
Produce multi-pass fillet welds in T-joints in the overhead position
Produce multi-pass fillet welds in T-joints in the flat, horizontal, vertical and overhead positions
Produce multi-pass fillet welds in lap joints in the horizontal position

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1340 - Structural Iron Fabrication Methods (3)

In this course you will learn to combine your shielded metal arc welding and flux cored arc welding skills to fabricate various types of weldments using proper layout procedures. Complete drawings with welding symbols, bill of materials and cost estimates will also be required. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1181 and WLDG1320 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Design a project that utilizes fillet, square-groove and single-V-groove welds in the flat, horizontal, vertical and overhead position utilizing the SMAW and flux cored welding methods
Integrate butt, lap, T-joint and multi-pass fillet welds into project design and construction
Integrate cutting, forming, drilling and punching operations into project design and construction
Identify tools and equipment required to complete the project
Develop drawings with welding symbols, dimensional accuracy and tolerance requirements for instructor approval
Develop bill of materials with cost estimates
Develop schedule for project completion with periodic instructor inspections
Determine work area for project development
Produce project
Inspect quality of welds

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1350 - Flux Cored Arc Welding I (3)

This course introduces students to the flux cored arc welding process including equipment, terms and safety procedures. Students will learn how to setup, adjust and shut down flux cored arc welding equipment. Students will be able to produce fillet T-joint welds in the horizontal, vertical and overhead position and single-V-groove butt joint welds in the horizontal and vertical position. Students will also be able to classify electrodes and conduct single-V-groove tests. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1135

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe welding terms, test positions and nomenclature
Describe the flux-cored arc welding process
Identify important safety rules
Operate FCAW equipment
Produce fillet T-joint welds in the horizontal, vertical & overhead positions
Explain the American Welding Society electrode classification system
Produce single-V-groove butt joint welds in the horizontal position
Conduct single-V-groove destructive tests
Produce a single-V-groove butt joint weld in the vertical position

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or

individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1360 - Flux Cored Arc Welding II (3)

Students will learn how to produce single-V-groove butt joint welds using gas-shielded and self-shielded tubular electrode wire. Students will also produce fillet weld lap joints and single-V-groove butt joints with metal-cored wire and single-V-groove welds in butt joints on pipe. Destructive tests will be performed on selected welds. Students will have the option to further develop their knowledge and skills to prepare for the flux-cored Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: WLDG1350 and WLDG1181

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Produce single-V-groove welds in butt joints in the overhead position with gas shielded and self-shielded electrode wire
Produce single-V-groove weld in butt joints in the horizontal position with gas shielded and self-shielded electrode wire
Produce single-V-groove welds in butt joints in the vertical position with stringers in the uphill direction with gas shielded and self-shielded electrode wire
Perform single-V-groove weld destructive test
Produce single-V-groove weld in butt joints in the flat position with self-shielded electrode wire
Produce fillet welds in lap joints in the flat position with metal-cored electrode wire
Produce single-V-groove welds in butt joints in the flat position with metal-cored wire
Produce single-V-groove welds in butt joints in the horizontal position with pipe
Produce single-V-groove welds in butt joints in the horizontal fixed position with pipe

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1370 - Precision Metal Stamping Operations (3)

This course prepares the student to learn the fundamentals of metal forming and develop technical skills and knowledge on how to operate mechanical power presses. Topics covered include: identifying press types and

components, safe operating procedures, proper use of personal protective equipment, and identifying types of tooling and their components.

Prerequisite: M Powered Level I or equivalent

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify the two basic types of presses and their components
Explain the characteristics and types of clutches in a press
Explain the purpose and function of tooling (die) components
Distinguish the process stages on single stage tooling
Explain the cause of adverse coil conditions
Demonstrate the proper use of PPE (Personal Protective Equipment) and machine guarding
Demonstrate safe operating procedures
Explain Geometric Dimensioning and Tolerancing (GD&T) symbols
Conduct first article inspection for setup of piece part
Demonstrate Statistical Process Control documentation
Perform Parts Inspection using standard inspection equipment
Monitor production process
Record required production data
Use problem-solving techniques
Adjust press and/or required in-line equipment
Operate press with required tooling
Maintain lubrication system

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1375 - Precision Metal Stamping Setup (3)

This course prepares the student to learn the fundamentals of parts inspection and quality control and to develop skills and knowledge on how to setup mechanical power presses. Topics covered include: Geometric Dimensioning and Tolerancing (GDT) interpreting engineering drawings, sensor and die protection, programming feed and speed and pilot release, applied metal forming theory, applied geometry and trigonometry, calibration and statistical process control (SPC).

Prerequisite: WLDG1370 or instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Set up single hit, compound and progressive dies
Demonstrate correct starting point for coil fed material
Set feed controls, speed and release for coil fed operations

Demonstrate proper feed-line height setup
Program the die sensors
Conduct frist article inspection for setup
Practice trial stamp piece parts on hand fed and coil fed setups
Set up safety system
Set up lubrication and coolant system
Adjust lubrication and coolant system
Set up press with required tooling
Demonstrate proper operation of press with required tooling
Explain operation of sensors
Verify proper operation of sensors
Explain press and in-line components
Explain Fundamental Die Theory
Detect raw material defects
Troubleshoot running process

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 1500 - Welding Process Lab (1 - 3)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that are beyond the current scope of existing courses. This course will cover the basics of welding safety as well as the safe use of welding equipment and its startup and shutdown. Dependent on the needs of each individual class, the specific areas of focus will change to meet the needs of the class.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Construct welding projects independently utilizing an organized work schedule
Examine prescribed procedures utilizing approved drawings, welding symbols, dimensional accuracy and tolerance
Utilize safe working techniques and practices
Integrate previously acquired knowledge and skills
Additional course goals addressed by this course will be dependent on the area and type of specialization that the class chooses to focus on

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-3

WLDG 1900 - Specialized Lab (1 - 4)

This course is designed for students who want to enhance their skills and knowledge in order to become more proficient in specialized areas of the curriculum. Specialized lab content must be different from or beyond the expected skill level available in current course offerings. Students will have the ability to direct their efforts, with instructor approval, in curriculum activities that meet their needs. A `Specialized Lab Training Agreement` must be signed by the student and the instructor and submitted to the registrar at the time of registration. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Instructor approval

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Work independently utilizing an organized work schedule
Follow prescribed procedures utilizing approved drawings, welding symbols, dimensional accuracy and tolerance
Utilize safe working techniques and practices
Integrate previously acquired knowledge and skills
Display good judgement, dependability and professionalism
Keep work area clean and organized

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lab: 1-4

WLDG 2035 - Advanced Gas Metal Arc Welding (3)

Students will learn how to produce single V-groove butt joint welds in the flat position with the spray transfer method on steel. They will also produce Fillet, Lap and T-joint welds in the horizontal and vertical positions on aluminum material. Students will also be able to utilize the pulse spray transfer method of GMAW welding to produce welds on Lap Joints, T-Joints and Butt Joints in flat, horizontal and vertical positions. Students will have the option to further develop their knowledge and skills to prepare for the Gas Metal Arc Welding Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Instructor Approval or GMAW Certificate or Welding Diploma

Course Requirements and Evaluation: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this syllabus for the credit breakdown.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify important safety rules
Produce single V-groove welds in butt joints in the flat position
Produce single V-groove welds in butt joints in the horizontal position
Produce single V-groove welds in butt joints in the vertical up position
Produce fillet welds in lap and T-joints in the horizontal position on aluminum
Produce fillet welds in lap and T-joints in the vertical up position on aluminum
Produce fillet welds in lap and T-joints in the flat position with spray transfer on aluminum
Produce fillet welds in lap and T-joints in the horizontal position with pulse spray transfer
Produce fillet welds in lap and T-joints in the vertical position with pulse spray transfer
Produce single V-groove welds in the flat position with pulse spray transfer
Apply single V-groove, fillet lap joint and T-joint welds to produce a lab project

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 2045 - Advanced Gas Tungsten Arc Welding (3)

Students will learn how to prepare and weld steel, stainless steel and aluminum tubing using the Gas Tungsten Arc Welding (GTAW) process. Students will learn how to prepare tubing for single V-groove welds in the 5-G position. Students will also be able to produce welds on stainless steel in the 5-G and 6-G positions. Visual and destructive inspection tests on steel, stainless steel, and aluminum are included. Students will have the option to further develop their knowledge and skills to prepare for the Gas Tungsten Arc Welding Welder Qualification Test. This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal.

Prerequisite: Instructor Approval or GTAW Certificate or Welding Diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Identify important safety rules
Describe the characteristics of ferrous and non-ferrous alloys
Describe the effect of process variables on the welding arc
Prepare material for welding
Produce V-groove welds on round tubing in the 2-G position (Steel)
Produce V-groove welds on round tubing in the 5-G position (Steel)
Produce V-groove welds on round tubing in the 6-G position (Steel)
Produce V-groove welds on round tubing in the 6-G position (Stainless Steel)
Produce V-groove welds on round tubing in the 6-G position (Aluminum)

Conduct visual inspection test (Steel ,Stainless Steel, Aluminum)

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 2050 - Introduction to Automated Cutting and Welding (3)

This course is designed to allow students to program, setup and operate semi-automated and fully automated cutting and welding systems. Both PC programming and teach pendants will be utilized. Integration of automated cutting and welding systems with other components will also be explored.

Prerequisite: WLDG1135 and WLDG1140

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe safety rules for automated equipment
Produce cutting file for a CNC plasma cutting table
Troubleshoot cutting file for a CNC plasma table
Produce plasma cuts in metal with a CNC plasma table
Identify parts of a Welding Cell (WC)
Create a program for the Welding Cell
Produce fillet welds in lap joints in the flat position with Short Circuit Transfer with WC
Produce fillet welds in Tee joints in the horizontal position with Short Circuit Transfer with WC
Analyze welds produced by automated systems for discontinuities and defects
Adjust automated systems for corrective measures

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 2055 - Advanced Robotic Welding (3)

This course is designed to allow students to perform advanced programming, setup and operation and troubleshooting. Techniques will be applied to both semi-automated and fully automated cutting and welding systems. Both PC programming and teach pendants will be utilized.

Prerequisite: WLDG2050

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
Describe safety rules for automated equipment
Produce welds with a robotic welding cell
Demonstrate how to reset a Tool Center Point (TCP)
Analyze accuracy of robot Master
Diagnose welding cell problems
Demonstrate welding parameters
Assess steps to recover from e-stop
Analyze welds produced by automated systems for discontinuities and defects
Perform cell operation and safety assessment
Create welding program for Certified Robotic Arc Welding (CRAW) test piece
Use two welding schedules
Perform visual inspection of robotic welds
Perform coordinated movements with robot
Produce fixture design and construction
Create a program for the welding cell while offline

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Course Credits section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: lecture: 2 lab: 1

WLDG 2275 - Welding & Metal Fabrication Internship (1 - 4)

This course allows the student to gain on-the-job experience in the Welding and Metal Fabrication industry. The student is responsible for locating and arranging the internship site. One (1) to four (4) credits can be taken, with each credit requiring 40 hours of time spent on the job. Student performance will be monitored by the instructor and evaluated by the employer. This will be a cooperative training program between Hennepin Technical College and a company. The student will apply competencies learned in the program to an employment-like work experience. Tasks and course goals will be determined by the instructor and the job site supervisor on an individual student basis. All industry internships require you be registered at the college for the internship and have instructor approval.

Prerequisite: Instructor approval and completion of at least 50% of your degree or diploma

Course Requirements and Evaluation: Refer to Course Syllabus for detailed information regarding the requirements and evaluation standards for this course. The Course Syllabus will be distributed the first week of the course.

Learning Outcomes:

The following outcomes will be addressed in the course:
The specific goals of this course will be defined in the 'Internship Agreement' signed by the student, employer and instructor and will be tailored to the experiences available at the internship site

Text and References: A list of textbooks required for this course is available at the bookstore.

Course Scheduling: The scheduled hours of instruction include sixteen hours for each lecture credit, thirty two hours for each lab credit and forty hours for each credit of supervised occupational experience (SOE). Lecture credit may include formal or impromptu lectures, demonstrations or discussions with the entire class or with small groups or individuals. Refer to the Credit Details section of this course outline for the credit breakdown.

Special Accommodations:

Disability Services assists students with disabilities who need accommodations to access programs, services and college activities. If this applies to you, please contact the DS Office on your campus to initiate the accommodations process.
Brooklyn Park Campus - 763-488-2477
Eden Prairie Campus – 952-995-1544

Campus:

Brooklyn Park Campus: 952-995-1300

Credit Details: SOE: 1-4