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## Directions to Campuses
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Minnesota State Community and Technical College is committed to a policy of nondiscrimination in employment and education 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 with regard to race, sex, color, creed, religion, age, national origin, disability, marital status, status with regard to public assistance, sexual orientation, gender identity or gender expression or membership or activity in a local commission as defined by law. Inquiries regarding compliance, rights and other information may be addressed to Affirmative Action Officer Doug Andring, 1900 28th Avenue South, Moorhead, MN 56560, Office B152, 218-299-6870, fax: 218-299-6513. Inquiries regarding the education opportunities or equal employment policies of the Affirmative Action program should be directed to:

Minnesota State Community and Technical College
Compliance Officer
Doug Andring
1900 28th Avenue South
Moorhead, MN 56560
Telephone: 218-299-6870
Fax: 218-299-6513

Office for Civil Rights
U.S. Department of Health and Human Services
233 N. Michigan Ave., Suite 240
Chicago, IL 60601
Telephone: 800-368-1019
Fax: 312-886-1807
TDD: 800-537-7697
Email: OCRMail@hhs.gov

Office for Civil Rights
U.S. Department of Health and Human Services
200 Independence Avenue SW
Room 509F HHH Bldg.
Washington, D.C. 20201
Telephone: 1-800-421-3481
Fax: 202-205-9862
TDD: 877-521-2172
Email: OCRMail@hhs.gov

Printed copies of the campus drug-free policy, security policy, athletic gender equity policy, and student right to know are available by contacting: Student Services Office; Minnesota State Community and Technical College; 1414 College Way; Fergus Falls, MN 56537-1000; (218) 736-1500.

Minnesota State Community and Technical College is accredited by the Higher Learning Commission; Member of the North Central Association (NCA), with additional program-specific accreditation information found in the M State Catalog. Information about NCA can be found on its website at www.ncahlc.org or by writing to the association at 230 South LaSalle Street, Suite 7-500; Chicago, IL 60604; telephone (800) 621-7440.

Information contained in this Catalog is periodically updated from time to time without notice. None of the information contained in this Catalog should be regarded as contractual in nature. Data contained in this Catalog is thought to accurately reflect information available at the time of publication (Fall Semester). However, Minnesota State Community and Technical College reserves the right to make substantial changes in curricula, course content and goals, procedures, policies, program requirements and tuition rates / costs at any time deemed necessary between editions. All revisions will take priority over the contents of this edition.

To reach M State with a TTY, contact the Minnesota Relay Service at (651) 297-5353 or 1-800-627-3529 and ask to have a call placed to the college. Upon request this information will be made available in alternate formats.

The purpose of the Catalog is to provide students, advisors, counselors, faculty and college administration a convenient vehicle for viewing information about M State's programs and courses. While M State is committed to communicating in a timely and accurate manner, it is important for all Catalog users to understand that this publication is not intended to create any guarantees about current program/course offerings. M State reserves the right to change or vary the content of this publication, without notice to current or potential users, when in its sole discretion such changes, updates or variations are warranted. It is the user's responsibility to seek clarification and/or assistance from a college advisor or administrator regarding any content questions. The most current publication of M State's Online Catalog supersedes all prior print or online publications and can be found by visiting our website at www.minnesota.edu.
Discover the difference at Minnesota State Community and Technical College.

Our mission is to provide “dynamic learning for living, working and serving.”

Minnesota State Community and Technical College, with campuses in Detroit Lakes, Fergus Falls, Moorhead and Wadena, offers opportunities to discover your future at multiple locations and online through our eCampus, whether you are interested in career and technical training, academic transfer programming, advancing your existing career or just enriching your life and personal interests through life-long learning.

There is something for everyone at M State, and I invite you to visit any of our campuses or our website at minnesota.edu to explore the many possibilities available to you. You can schedule a campus tour or just stop by. You will find caring and helpful student services staff ready to assist you; engaged and experienced faculty who are experts in their career fields and disciplines; satisfied and involved students well on their way to careers or transfer institutions; and community and administrative members who care deeply about the success of the College and its students and employees.

M State is completing its first decade as a combined college, and we will be celebrating that milestone all year! Although each campus has a rich history spanning more than 50 years, coming together as one college has proven to be a strategy for success, as we have more to offer each year. Learn more about M State and the people, services, programs and student life activities available by exploring our website or by scheduling a campus visit. This Catalog is also filled with useful information.

On behalf of our faculty, staff and administrators, I want to thank you for considering M State as your educational partner and pathway to a bright future. We look forward to meeting you and working with you to reach your career and transfer goals.

Best wishes for success with your college plans and your personal goals. Remember, we are Your Regional College of Choice!

Peggy D. Kennedy, Ed.D.
President
## Directory of College Services

### Detroit Lakes

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<td>218.846.3723</td>
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<tr>
<td>Campus Director of Student Services</td>
<td>218.846.3714</td>
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<td>Dean of Student Access........</td>
<td>218.736.1528</td>
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<td>Dean of Student Success........</td>
<td>218.299.6535</td>
<td>Dean of Student Success............</td>
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<tr>
<td>Solution Center................</td>
<td>877.450.3322</td>
<td>Solution Center....................</td>
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</table>

### Contact Information

- **Academic Advising**: 218.846.3670
- **Assessments/Accuplacer**: 218.846.3777
- **Bookstore**: 218.846.3727
- **Child Care**: 218.847.1145
- **Disability Services**: 218.846.3734
- **English Language Learner**: 218.846.3734
- **Enrollment**: 218.846.3777
- **Facilities**: 218.631.7906
- **Financial Aid**: 218.846.3754
- **Food Service**: 218.847.2309
- **Foundation**: 218.846.3705
- **Housing**: 218.846.3670
- **Information**: 218.846.3670
- **IT Help Desk**: 218.846.3764
- **Library**: 218.846.3772
- **Multicultural Services/ Diversity and Inclusion**: 218.846.3756
- **Student Life**: 218.846.3768
- **Learning Services/Tutoring**: 218.846.3734
- **Student Records**: 218.846.3789
- **Veterans Services**: 218.299.6881

### eCampus

- **Academic Advising**: 218.299.6590
- **Assessments/Accuplacer**: 218.736.1569
- **Bookstore**: 218.736.1569
- **Disability Services**: Contact campus associated with your program
- **Enrollment**: 218.736.1661
- **Financial Aid**: Contact campus associated with your program
- **Information**: 218.736.1569
- **IT Help Desk**: Contact any campus help desk
- **Library**: Contact any campus library
- **Student Success Center/Tutoring**: Contact any campus
- **Student Records**: 218.347.6222
- **Veterans Services**: 218.299.6881
Fergus Falls

**Academic and Student Services**
- Academic Dean .................................................. 218.736.1507
- Campus Director of Student Services ........... 218.736.1530
- Dean of Student Access ................................ 218.736.1528
- Dean of Student Success ............................ 218.299.6535
- Solution Center .............................................. 877.450.3322

Academic Advising ........................................... 218.736.1533
Assessments/Accuplacer .................................. 218.736.1529
Athletics ............................................................. 218.736.1648
Bookstore ........................................................... 218.736.1556
Box Office/Fine Arts ......................................... 218.736.1600
Counseling .......................................................... 218.736.1539
Disability Services ............................................. 218.736.1595
English Language Learner ............................... 218.736.1530
Enrollment .......................................................... 218.736.1549
Facilities .............................................................. 218.736.1560
Financial Aid ....................................................... 218.736.1534
Food Service ........................................................ 218.770.8487
Foundation .......................................................... 218.736.1514
Housing ............................................................... 218.736.1635
Information .......................................................... 877.450.3322
IT Help Desk ........................................................ 218.736.1650
Library ................................................................. 218.736.1650
Multicultural Services/ Diversity and Inclusion ........................................................................ 218.736.1530
Security ................................................................. 218.770.6161

Student Life ....................................................... 218.736.1537
Learning Center/Tutoring ............................... 218.736.1624
Student Records ................................................. 218.736.1529
Veterans Services .............................................. 218.299.6881

Moorhead

**Academic and Student Services**
- Academic Dean/Liberal Arts ......................... 218.299.6544
- Academic Dean/Trades and Technology ... 218.299.6594
- Campus Director of Student Services ........... 218.299.6620
- Dean of Student Access ................................ 218.736.1528
- Dean of Student Success ............................ 218.299.6535
- Solution Center .............................................. 877.450.3322

Academic Advising ........................................... 218.299.6880
Assessments/Accuplacer .................................. 218.299.6824
Bookstore ........................................................... 218.299.6570
Counseling .......................................................... 218.299.6618
Disability Services ............................................. 218.299.6882
Enrollment .......................................................... 218.299.6583
Facilities .............................................................. 218.299.6522
Financial Aid ....................................................... 218.299.6539
Foundation .......................................................... 218.299.6826
Information .......................................................... 218.299.6500
IT Help Desk ........................................................ 218.299.6568
Library ................................................................. 218.299.6530
Multicultural Services/ Diversity and Inclusion ........................................................................ 218.299.6806
Directory of College Services

Student Life ............................................................. 218.299.6853
Learning Center/Tutoring ................................... 218.299.6882
Student Records......................................................218.299.6593
Veterans Services.................................................... 218.299.6925

Wadena

Academic and Student Services
Academic Dean ....................................................218.631.7817
Campus Director of Student Services .......... 218.631.7832
Dean of Student Access....................................218.736.1528
Dean of Student Success....................................218.299.6535
Solution Center......................................................877.450.3322
Academic Advising ................................................ 218.631.7821
Assessments/Accuplacer ..................................... 218.631.7827
Bookstore ..................................................................218.631.7825
Child Care ................................................................. 218.632.2348
Disability Services ................................................. 218.631.7870
English Language Learner................................... 218.632.2450
Enrollment .............................................................. 218.631.7818
Facilities ................................................................. 218.631.7906
Financial Aid.......................................................... 218.631.7820
Foundation ............................................................. 218.631.7931
Information............................................................ 218.631.7800
IT Help Desk.......................................................... 218.631.7872
Library ..................................................................... 218.631.7865

K12 Collaborations
Career Articulation Agreements ....................... 218.347.6215
Center for College Readiness ......................... 218.347.6213
Concurrent Enrollment ....................................... 218.347.6215
eCampus in the High School ......................... 218.347.6215
Vision

A success story for every student and stakeholder.

Mission

Provide dynamic learning for living, working and serving.

*M State’s mission is to provide accessible education with vigor and integrity to diverse learners, preparing them for dynamic living, working and serving.*

Values

*M State is focused on excellence, integrity, respect and innovation.*

- Excellence in teaching and service
- An environment conducive to learning and working
- A culture of diversity and inclusiveness
- Responsiveness to communities served
- Respect and civility in communications
- Openness to innovation and change
- Accountability and transparency in decision-making

Strategic Goals

Aligned with the Strategic Framework of the Minnesota State Colleges and Universities System

Ensure access to an extraordinary education for all Minnesotans

*M State embraces the challenge to excel in teaching, learning and service so all students — career, transfer and life-long learners — are ensured of opportunities for success.*

Be a partner of choice to meet Minnesota’s workforce and community needs

*M State recognizes its role as partner and leader in preparing our students, the region and the state for current and future economic competitiveness in a global market.*

Deliver to students, employers, communities and taxpayers the highest value and most affordable option for higher education

*M State uses sound financial management practices and continually assesses how to productively meet current and future educational needs through innovation, efficiencies and shared services.*
About the Campus

The Detroit Lakes campus, with a total enrollment of 700, offers unique programs including PowerSports Technology and Marine Engine Technology – both fitting for a campus in the heart of Minnesota lake country. Additional programs prepare students to meet growing market demand in the areas of radiologic technology, computer network security and Web development. Students also can choose career and technical programs in the automotive, business, child care, drafting and health care professions. The campus offers food service, child care, a variety of student organizations, a veterans resource center and the Business & Entrepreneurial Services Center. With small class sizes, the faculty-to-student ratio allows for one-on-one attention, while exceptional student support services are available to promote academic success.

About the Community

The beautiful Detroit Lakes area has 412 lakes within a 25-mile radius and offers some of Minnesota’s premiere outdoor recreation opportunities. Summer is the busy time in lake country with fishing, boating, water sports and events that draw visitors from around the nation. Thousands descend upon the spectacular mile-long beach for the 4th of July to enjoy the water, fun and free fireworks show. Each August, Detroit Lakes draws music fans from around the country to WE Fest, the world’s largest outdoor country music festival. Detroit Lakes isn’t only about the summer, though. There is an array of activities during the rest of the year, including ice fishing, snowmobiling and hunting, plus the community celebrates its vibrant downtown commercial district and is just a short drive from the Fargo-Moorhead metropolitan area. The city’s population is approximately 8,600 in the off-season and 30,000 in the summer, and it is home to 14 challenging golf courses, go-carts and batting cages, cross-country skiing and downhill skiing.

About the Campus

The Fergus Falls campus, with a total enrollment of 900, has been providing high-quality academic programs in the liberal arts and health sciences for more than 50 years. Degree options include Associate in Arts, Associate in Fine Arts in Music, Associate in Fine Arts in Visual Arts, Associate of Science in Biological Sciences, Medical Laboratory Technology, Engineering, Environmental Science, Accounting and Business, degrees in Nursing and a diploma and AAS in Equine Science. The college is recognized for its rich tradition in arts, music and athletics, where it competes in the National Junior College Athletic Association and the Minnesota College Athletic Conference in eight sports: football, volleyball, men’s and women’s for both golf and basketball, baseball and softball. Visitors are amazed by the extensive art collection displayed across the campus, making art an everyday part of the student experience. The music program is renowned for both vocal and instrumental excellence, and student musicians enjoy new chorale and instrumental rehearsal rooms, along with computers and software for music composition. The campus offers food service, two options for on-campus living and many scholarship opportunities through Fergus Area College Foundation, which has an endowment of nearly $3 million.

About the Community

Fergus Falls is located in west central Minnesota, less than three hours from Minneapolis-St. Paul and an hour from the Fargo-Moorhead metropolitan area. The city of 14,000 is home to an active arts community and has a wide array of outdoor recreational opportunities, including the trailhead of the 55-mile Central Lakes Trail for bikers and snowmobilers. With more than 1,000 lakes in Otter Tail County, there is no shortage of outdoor and water activities. A Center for the Arts and the Kaddatz Galleries, both located in downtown Fergus Falls, are venues for theater, concerts, independent films and rotating art exhibits. Otter Tail Power Company has its headquarters in Fergus Falls, and the city is a regionally-recognized health care provider through Lake Region Healthcare and its Athletic Republic sports training center and new Cancer Care and Research Center.
About the Campus

The Moorhead campus, with a total enrollment of 2,600, is truly a comprehensive community college, offering both technical/career programs and general education classes. The many choices enable students to pursue their career goals in programs that range from six months to two years. Students also have the option of completing an Associate in Arts degree with the intent of continuing on to earn a bachelor’s degree or beyond at a four-year college or university. Innovative new programs allow students to prepare for careers in the exciting and expanding fields of biotechnology and engineering. Campus highlights include food service which features homemade meals made by students in the culinary program, student support services, intramural sports and student life opportunities with nearly 20 student organizations.

About the Community

Fargo-Moorhead, with a population of 210,000, has a growing reputation as a vibrant college town, with students from M State, Minnesota State University Moorhead, Concordia College and North Dakota State University. Moorhead is small enough to feel comfortable, yet it offers all the benefits of a larger metropolitan area with its cultural, recreational and commercial diversity. Arts and culture flourish in Fargo-Moorhead, where local talent supports a community theater, symphony and civic opera company. The cities boast numerous parks, bike trails, ice facilities, playgrounds, swimming pools, ball diamonds, cross country ski trails and golf courses. The business community is thriving, too, as a center for agri-business, marketing, technology and research in the heart of the Red River Valley.

About the Campus

The Wadena campus, with a total enrollment of 600, offers degrees in a range of fields, including business, health care, cosmetology, electrical line worker and construction. Small class sizes mean a more personal education, and most programs offer the kind of hands-on classroom and real-life experiences that are ideal for preparing students for careers. Strong interest in its highly regarded Electrical Line Worker program recently prompted the college to open a satellite campus for the program in Baudette, on the Canadian border. Students also can earn an Associate in Arts degree, a springboard for continuing education at a four-year college or university. The campus provides food service, student organizations and support services to promote academic success. Housing options are available near the campus.

About the Community

The welcoming community of Wadena, with a population of 4,500, is located at the gateway of Minnesota lake country. It offers many opportunities for outdoor recreation with 1,000 lakes within 50 miles and more than 300 acres of parks that provide opportunities for cross-country skiing, snowmobiling, canoeing, biking, hunting, golfing, in-line skating, horseback riding and fishing. The city serves as a regional trade center for area communities and has a small-town atmosphere with the attractions of a larger community.

eCampus:
1.888.696.7282 • ecampus@minnesota.edu

About the Campus

With an enrollment of 2,400, M State’s eCampus provides both an affordable and innovative way to advance your education. Whether you are taking classes or earning your degree, eCampus offers more than 300 classes and 25 programs and majors online so you can discover your future without commuting to a campus. Classes are taught by caring faculty members. There is easy online access to your instructors and advisors, as well as other resources such as an electronic library and tutoring that will help you along the way. M State is fully accredited and offers transfer, career and technical course and program options.
About Us.

As a member of the Minnesota State Colleges and Universities system, Minnesota State Community and Technical College serves more than 9,000 students in credit courses each year in more than 120 career and liberal arts programs at its four campuses in Detroit Lakes, Fergus Falls, Moorhead and Wadena and through eCampus.

M State was created July 1, 2003, with the merger of Fergus Falls Community College and three campuses of Northwest Technical College. This new college was developed to better serve the needs of the communities in west central Minnesota and the Red River Valley through a combination of strong technical programs and comprehensive community college curriculum. M State currently has a total of 612 employees across Minnesota, on four campuses and the M State Processing Center in Perham.

Each of the campuses has been meeting the educational and workforce needs of its community for nearly half a century or more. The Detroit Lakes, Moorhead and Wadena campuses were established when state leaders recognized the need to provide technical education and training to meet workforce demands. The three campuses have experienced a series of name changes. Wadena was founded in 1959, Moorhead in 1965 and Detroit Lakes in 1966. True to the goal of meeting workforce needs, each campus has added and enhanced programs as demands have changed. The Fergus Falls campus was established in 1960 thanks to the initiative of community leaders determined to create a community college where area students could complete the first two years of a four-year degree.

Healthy Enrollment.

M State has made steady progress in College-wide enrollment since 2007. We have experienced tremendous growth in online courses and programs and in site-based workplace training in business and industry. Custom training staff work closely within each of our communities to meet the ever-changing needs of local businesses and industries.

By partnering with communities, the College also provides custom training services and other responsive training programs to more than 4,000 people through our business partnerships. In addition, the College has five entrepreneurial incubator sites in central Minnesota with more than 58 offices. The Business and Entrepreneurial Services Center is nationally recognized for its efforts to provide incubator space and business support to regional economic development and revitalization by supporting business concepts of entrepreneurship.
Quality of Graduates.

Student success is measured by student persistence, program completion, graduation and transfer rates. We also measure success by looking at the pass rates for licensure exams. In 2012, M State graduated 1,650 students - the most in the history of the College! Within the past three years, 54.9 percent of M State students graduated or transferred to continue their education at another college. For licensure programs such as nursing, dental hygiene and assisting, criminal justice and radiology, M State students had a pass rate of 84.6 percent on their licensure exams.

Serving a Diverse Student Population.

M State is in the business of changing lives, and we have the privilege of serving and educating a diverse student population. Every student who walks in our doors, meets our instructors in their place of employment, or logs in to our virtual classrooms has a story. The diversity of their stories is represented in our student demographics. In 2012, 12 percent of our students were of an ethnic background other than Caucasian/white, 47 percent had high financial need, 23 percent were first-generation students and 56 percent were traditionally underrepresented in some way.

Affordable Education.

We provide a cost-effective higher education option for our stakeholders by focusing on stabilizing tuition rates and aggressively monitoring our spending and assets. In 2011, M State had a 3.37 composite financial index (CFI). The CFI is a measure of our financial health, and 3.0 is the baseline recommended by the System Office.

The chart to the left compares tuition rates for full-time students who are state residents. These statistics were referenced from the Minnesota Office of Higher Education website http://www.che.state.mn.us/.
Accreditation.

M State is accredited by The Higher Learning Commission: Member of the North Central Association (1972-present). M State was admitted into the Commission’s Academic Quality Improvement Program (AQIP) in 2009.

Website: http://www.ncahoigherlearningcommission.org
Website: http://www.hlcommission.org/AQIP/AQIP-Home

M State has numerous career/technical programs that are additionally accredited by boards, agencies, commissions or professional organizations in specific fields or disciplines.

Financial Outlook.

Stakeholder support of the College is more critical than ever. The College has experienced significant changes in revenue and funding sources. In the past two fiscal years, M State has reallocated $1,873,000 to budget reductions and College initiatives. We remain committed to providing cost-effective education and to creating efficiencies to respond to changes in funding.

K-12 Collaborations.

M State has a strong history of working collaboratively with high schools and other educational institutions within our region.

✓ We developed an interactive Web-based college-readiness tool that connects junior high and high schools students to college faculty through the Center for College Readiness. Using this Web-based tool, M State provides individualized guidance to more than 1,000 students each year on their level of readiness for college.

✓ M State was the lead institution in the development of an initiative to bring online college courses to high school students in rural schools throughout the state and continues to offer this option through the eCampus in the High School program.

✓ M State has partnered with high schools to offer concurrent courses to high school students for more than 20 years.

Through these combined efforts, M State works collaboratively to provide credit-based offerings and college readiness services with 46 high school partners in the region and throughout the state.

M State Partners with Regional Colleges.

In addition to numerous articulation agreements and collaborative projects and grants with area colleges, M State has partnered with Minnesota State University Moorhead, Bemidji State University and Northland Community and Technical College to form the Northwest Alliance. The Alliance meets on a regular basis to collaborate, create efficiencies, reduce duplication of efforts and focus on meeting the educational needs of our region and its workforce.
Points of Pride.

M Instructors are Recognized for Quality

M State faculty members do an outstanding job of providing our students with a quality education; this quality is recognized in a number of ways each year. Two of the most prestigious awards given are through a peer nomination and portfolio process for the National Institute for Staff and Organizational Development (NiSOD) and through the System Office Excellence in Teaching award. Faculty are nominated by students, faculty peers or staff, with their selection based on teaching strategies and materials; content expertise; service to students, their profession, their institution and the system; and assessment of student learning and performance. During the 2011-2012 academic year, a faculty member received the Educator of the Year award, the system's highest academic honor.

M Employment of Graduates

Not only is M State committed to educating our communities, we are invested in them! From 2006 to 2010, M State has assisted in educating more than 4,350 graduates available for employment in their fields of study. The College's 120 career and technical program options boast vigorous advisory committees, sponsorships and scholarship opportunities. Last year, a large majority of the graduates successfully transferred to universities or found employment with nearly 400 employers in the M State region. The response rate to our graduate survey has averaged 97 percent over the last five years.

M Focus on Innovation and Efficiency

The College has illustrated stewardship in state funding by becoming a leader in shared service initiatives. As part of a focus on increased efficiency by the Minnesota State Colleges and Universities system, M State is now providing onsite payroll, financial aid direct lending and other related services for five other MnSCU colleges and the system's Office of the Chancellor in St. Paul. M State will continue to expand payroll processing to include additional state colleges and universities. M State is offering the services through the system's new Campus Service Cooperative, a strategic initiative to increase efficiency and allow MnSCU schools to focus on their core mission of serving and educating students. As MnSCU Chancellor Steven Rosenstone recently said, "In the face of (our) challenges, the greatest risk is the risk of business as usual."

M Student Life

Student life opportunities at M State focus on engaging students in active learning, helping students develop coherent values and ethical standards, communicating high expectations for student learning, effectively using resources to achieve institutional missions and goals, forging educational partnerships which advance student learning, and building supportive and inclusive communities. M State has vocal and performance fine arts opportunities, athletics and a large number of student clubs and organizations.
About CTS
For more than 20 years, M State's Custom Training and Workforce Development division has partnered with business clients to assess their organizational needs and develop custom products and services.

Service Area
CTS primarily serves 15 counties in west central Minnesota and bordering counties in east central North Dakota, an area of more than 20,000 square miles and 250,000 people. CTS also provides associate degree programs to workers on-site or online to companies headquartered in Minnesota.

Flexible Hour-Based and Credit Options
CTS offers both hour-based and credit courses. Hour-based training usually focuses on a specific training or production need within a company. To develop the internal workforce for new responsibilities and advancement, companies often use credit courses and degree programs. Credit courses are considered to be a key workforce recruitment and retention tool.

Research and Development
Although our primary focus is the incumbent workforce, CTS also serves as the research and development arm of the college. Because CTS staff members are in daily contact with businesses and economic developers, they are in a position to continuously feed information back to the college. CTS develops new programs for businesses that can be offered on the campuses, secures new equipment through grants and serves as an industry connection to the campuses.

Targeted Products and Services
- Health & Emergency Services
- Applied Technology & Manufacturing
- Information Systems & Technology
- Leadership Development
- Sales and Management

Training products can be customized to fit a particular business need or, in some cases, new products can be developed to meet a new technology or strategic focus. Products and services offered through each area of expertise include:

Health and Emergency Services
- Continuing Education for Nursing, Dentistry and Allied Health
- CPR and First Aid
- Fire Training
- First Responder (Initial and Refresher)
- Lean Health System Analysis and Implementation
- Medication Assistant (North Dakota and Minnesota approved)
- Nursing Assistant Training and Competency Examination
- RN and LPN Refresher Courses

Applied Technology and Manufacturing
- APICS
- Automation/Robotics
- Carpentry
- CNC Machining
- Computer Aided Drafting
- Drive & Power Systems for Maintenance Technicians
- Electrical and Mechanical Troubleshooting
- Electrical Training Series
- Forklift Operation
- High-Low Pressure Boiler Systems
- IT Pro Series
- Manufacturing Employee Series
- Manufacturing Flow
- Manufacturing Procurement
- MN Commercial Vehicle Inspection Re-certification
- NEC Electrical Code Update & Refresher
- Power Limited CE
- Print Reading & Schematics Interpretation
- Programmable Logic Controllers
- Quality Systems-Lean
- Related Safety Training
- Statistics
- Welding (Manual and Robotics)
Medical Coding
- ICD-10

Information Technology
- Assessment and Consulting
- Customized Hardware/Software Computer Training
- Microsoft Applications
- Networks
- Web Design and Marketing

Leadership Development
- Business Writing
- Customer Service
- Leading and Managing Effective Customer Service
- Employee and Management Coaching
- Performance Appraisal Systems
- Lean It Up!
  Learn about lean tools and methods and how they apply to your organization
- Strategic Planning
- Supervisory Skills that Build Productive Employees
- Train the Trainer

Sales and Management
- Customized Sales Applications
- Field Sales
- Phone Selling
- Sales Management Training

High-Quality Trainers, Instructors and Consultants
CTS uses a network of dozens of full-time, adjunct and contract instructors and consultants. Business and industry experience is considered essential, and instructors have varied practical and instructional experiences.

Convenient On-Site and Campus Delivery
CTS provides training and services primarily on each company’s site. In some cases staff will work with companies to set up training classrooms and labs. If a business is located near a campus, training can be held there.

Partnerships
CTS believes that the best way to serve its customers is to develop working partnerships with industry councils, higher education institutions and economic development organizations. Project partnerships have been formed with a large number of economic development groups, as well as regional higher-education institutions.

CONTACT CUSTOM TRAINING SERVICES
GL Tucker, Dean of Custom Training Services/ Business & Entrepreneurial Services
Custom Training Services
900 Hwy 34 East
Detroit Lakes, MN 56501
218.846.3765 (office)
218.846.3706 (fax)
218.849.0243 (cell)
GL.tucker@minnesota.edu

Mary Ryan, Director of Client Services
Custom Training Services
1414 College Way
Fergus Falls, MN 56537
218.736.1510 (fax)
218.849.2655 (cell)
mary.ryan@minnesota.edu

Karen Schumacher, Director of Health and Emergency Services
Custom Training Services
1900 S 28th Ave
Moorhead, MN 56560
218.299.6586 (office)
218.291.4266 (fax)
218.556.5297 (cell)
karen.schumacher@minnesota.edu
About BES
Since 2008, Business & Entrepreneurial Services has encouraged entrepreneurship in the region through professional development training and services for new and existing businesses and entrepreneurs. BES is committed to providing lifelong learning opportunities for businesses and individuals in west central Minnesota.

BES Resources and Services
At its administrative offices on the Detroit Lakes campus, BES offers an array of services designed to support and encourage entrepreneurial ventures, including a business resource library, business counseling, business incubator offices, professional speakers, community outreach, certificates and training, as well as college-credit curriculum. For an up-to-date listing of offerings and to register online, go to www.BESMState.com.

The Small Business Development Center partners with BES to offer office hours and free business consulting services at BES locations. To make an appointment with an SBDC counselor, please register at www.cord.edu/sbdc/.

Incubator Locations
BES opened its first business incubator in Detroit Lakes in October 2009 and has since developed incubators in Hawley and Perham. Through its incubators, BES offers the support structures for a successful business venture start-up including professional office and meeting space, office equipment and computers, conference room technology such as Skype and shared services. Tenants — either new entrepreneurs or small businesses that need support to grow — have access to start-up help, training and mentoring programs.

Detroit Lakes
900 Hwy 34 East, Detroit Lakes, MN 56501
218.844.5420 (phone)
218.844.5423 (fax)
BES.dl@arvig.net

Hawley
407 6th Street, Hawley, MN 56549
218.486.4600 (phone)
218.486.4601 (fax)
BES.hawley@arvig.net

Perham
665 3rd Street SW, Perham, MN 56573
218.346.4300 (phone)
218.346.4303 (fax)
BES.perham@arvig.net

THE HIVE
900 Hwy 34 East, Detroit Lakes, MN 56501
218.844.5420 (phone)
218.844.5423 (fax)
The incubator co-op marketing agency offers collaboration for creative and marketing professionals in an agency-like setting.
Minnesota State Community and Technical College

Accreditation and Approvals

Minnesota State Community and Technical College is accredited by the Higher Learning Commission:

Member of the North Central Association
30 North LaSalle Street, Suite 2400
Chicago, IL 60602-2504
Website: http://www.ncahigherlearningcommission.org
Phone: 312.263.0456

Programs accredited by additional accrediting agencies include:

Automotive Service Technology
(Moorhead, Detroit Lakes)
NATEF Certified
National Automotive Technicians Ed Foundation
101 Blue Seal Drive, Suite 101
Leesburg, VA 20175
Phone: 703.669.6650
Fax: 703.669.6125
Website: http://natef.org

Construction Electricity
(Moorhead, Wadena)
Approved as one year of credit toward journeyman’s license by the:
Minnesota State Board of Electricity
443 Lafayette Road N.
St. Paul, MN 55155
Phone: 651.284.5012
Fax: 651.642.0441
Website: www.dli.license@state.mn.us

Cosmetology
(Wadena)
Minnesota Board of Cosmetologist Examiners
829 University Ave. SE, Suite 710
Minneapolis, MN 55414
Phone: 651.643.3060
Fax: 651.643.3072

Criminal Justice
(Moorhead)
Minnesota Board of Peace Officer Standards & Training
1600 University Avenue, Suite 200
St. Paul, MN 55104
Phone: 651.643.3060
Fax: 651.643.3072

Dental Hygiene and Dental Assisting
(Moorhead)
Commission on Dental Accreditation of ADA
211 East Chicago Avenue
Chicago, IL 60611-2678
Phone: 312.440.2500
Fax: 312.440.2915

Health Information Technology
(eCampus)
Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
233 N. Michigan Ave, 21st Floor
Chicago, IL 60601-5800
Phone: 312.233.1100
Fax: 312.233.1948

Medical Laboratory Technician
(Fergus Falls)
National Accrediting Agency for Clinical Laboratory Sciences
5600 N. River Rd.
Suite 720
Rosemont, IL 60018-5119
Phone: 847.939.3597
Phone: 773.714.8880
Fax: 773.714.8886

Nursing (AS)
(Detroit Lakes, Fergus Falls, Moorhead, Wadena)
Minnesota Board of Nursing
2829 University Ave. Southeast, #200
Minneapolis, MN 55414-3253
Website: www.nursingboard.state.mn.us
Phone: 612.617.2270
Toll Free: 888.234.2690 (MN, IA, ND, SD, WI)
Fax: 612.617.2190

Pharmacy Technology
(eCampus)
American Society of Health Systems Pharmacists
7272 Wisconsin Avenue
Bethesda, MD 20814
Phone: 301.657.3000
Fax: 301.657.1258

Radiologic Technology
(Detroit Lakes and eCampus)
Joint Review Committee on Education in Radiologic Technology
20 N. Wacker Drive Suite 2850
Chicago, IL 60606-3180
Phone: 312.704.5300
Fax: 312.704.5304
Website: www.jrcert.org

Plumbing
(Moorhead)
32-credit program approved as 800 hours toward student’s apprenticeship care in Minnesota and 1600-2000 hours in North Dakota:
Minnesota Department of Labor & Industry Construction Codes & Licensing Division, Licensing Unit
443 Lafayette Road N.
St. Paul, MN 55155-4342
Phone: 651.284.5067
Fax: 651.284.5748
Website: www.doli.state.mn.us

Practical Nursing (Diploma/AAS)
(Detroit Lakes, Fergus Falls, Moorhead, Wadena)
Minnesota Board of Nursing
2829 University Ave. Southeast, #200
Minneapolis, MN 55414-3253
Website: www.nursingboard.state.mn.us
Phone: 888.234.2690 / 612.617.2270
Fax: 612.617.2190
Access to Information

The College will make available the following information to all enrolled and prospective students:

Student Right to Know
(Graduation/Completion Rate)

The purpose of this information is to disclose annual student completion and graduation rates. This report is available on the College website at www.minnesota.edu or by calling 1-877-450-3322.

Campus Security Report

The purpose of this report is to inform the campuses of campus crime prevention programs, crime reporting procedures, emergency response and a three-year statistical history of criminal activity on the College campuses. A copy of the Campus Security Report is distributed annually to students and employees and is available from the Student Services office on each campus. Prospective students and employees can obtain this information from the College website at www.minnesota.edu or by calling 1-877-450-3322.

Cost of Attendance

Information on tuition, fees, estimated book and supplies costs and any additional known costs associated with particular programs can be obtained online at www.minnesota.edu. Visit www.minnesota.edu for laptop requirements and costs.

Tuition Refund

Information regarding the Tuition Refund Policy for the return of Title IV grants or loans is provided in the student Handbook, in the College Catalog and at www.minnesota.edu.

Drop/Add/Withdrawal

The purpose of this policy is to explain how to make course enrollment changes. Refer to the College Drop/Add/Attendance/Non-Attendance Policy in the student Handbook and in the College Catalog.

Academic Program Information

A listing of faculty associated with programs and other instructional personnel is available on the College website at www.minnesota.edu.

Family Education Rights and Privacy Act (FERPA)

The purpose of the Family Education Rights and Privacy Act is to afford certain rights to students concerning their education records. Primary rights include the right to inspect and review education records, the right to seek to have the records corrected and the right to have some control over the disclosure of information from the records. The College FERPA Policy is located in the Catalog and is included in the Handbook.

Financial Assistance

Information on the availability (types of aid available), eligibility, selection criteria, criteria for amount determination, satisfactory progress standards, re-establishing satisfactory progress status, disbursement methods, student work conditions and conditions for repayment of loans is provided in the Student Handbook and the College Catalog, on the website and in campus financial aid offices.

College Policies

Many M State policies are under review. M State may make changes to existing policies during the academic year. Please visit www.minnesota.edu for current updates to policy information which may include the following topics:

Academics
Admission
Campus Environment
Degree Completion (Graduation)
Financial Aid
Nondiscrimination in Education and Employment
Online Majors
Registration
Student Records
Student Support Services

If you do not have access to the Internet, please contact a college representative to receive the policy in an alternate form.

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Admission

As an open door institution, M State provides students with the opportunity to advance their education regardless of prior academic preparation. We offer comprehensive academic offerings and student support services to educate and train students with diverse backgrounds, academic and personal experiences and life goals. For specific information about the admission process, visit www.minnesota.edu.

Advanced Standing/Placement

M State awards credit for previously gained knowledge and skills that are equivalent to coursework at the College. Such credit may be granted through various means such as direct transfer of courses of equivalent nature that were completed at regionally accredited institutions of higher education, through Articulation Agreement for College Credit, AP, CLEP, credit for prior learning or credit by examination.

The amount of credit granted by the College for an exam or other method will not exceed the credit the College grants for an equivalent course or course sequence. The College will not grant credit for exams that overlap completed coursework or for standardized tests for which the student has already gained credit. Credit granted through AP and CLEP may be used for partial fulfillment of the general education distribution requirements for the AA, AS and AAS degrees. Please contact the College Registrar’s Office with any questions about advanced standing/placement.
Assessment for Course Placement
Assessments in reading and math are required of all new students who enroll in more than eight credits at M State. Testing must be completed before registration. Schedules of test dates and times are available online at www.minnesota.edu. Accommodations for students with disabilities who need to complete assessment testing should be arranged in advance through the College’s Center for Students with Disabilities.

Students who do not meet minimum test scores in reading and math will be required to enroll in developmental courses in those areas. Students must demonstrate proficiency in those courses by receiving passing grades before enrolling for the next course in the particular discipline. These courses provide the basic skills required for success in all college courses.

Developmental courses are not intended for transfer; credits earned in these courses will not meet distribution or elective requirements for graduation.

Immunization Requirement
All students must show proof of immunization against diphtheria, tetanus, measles, mumps and rubella. There are two exceptions: 1) if born prior to 1957, or 2) if graduated from a Minnesota high school in 1997 or after. Immunization forms are available at www.minnesota.edu.

Notice to Students Regarding Possible Impact of Criminal Records
Students who have been arrested, charged or convicted of any criminal offense should investigate the impact that the arrest, charge or conviction may have on employment in a specific field or on access to federal, state or other higher education financial aid.

The following sites may provide information regarding the impact of criminal records on future employment: Minn. Stat. Ch.609B COLLATERAL SANCTIONS, https://www.revisor.leg.state.mn.us/statutes/?id=609B, Minnesota Legislature’s Overview of Background Check Statutes, http://www.house.leg.state.mn.us/hrd/pubs/bkgdchck.pdf.

Visiting Students
A student who registers for seven credits or less in a semester and who does not intend to immediately pursue a certificate or degree program need not go through formal admission procedures. No proof of high school graduation is required of this type of student. If the course has a prerequisite, the Visiting Student will have to provide appropriate documentation.

Veterans Benefits
The majors offered by M State have been approved by the Minnesota State Approving Agency for veterans and their dependents eligible for educational benefits under Chapters 30, 31, 32, and 35 of the Veterans Readjustment Act of 1977. Under the new GI Bill, Chapter 106 (educational assistance program), Reserve and National Guard personnel may be eligible for educational benefits. Students should contact the Veterans Certifying Official or their local Veterans Administration office to obtain applications and determine eligibility and entitlement. Veterans may receive credit for appropriate military training. The college transfer specialist will determine the number of credits acceptable to transfer.

Registration
All students who have completed the requirements for admission and attended a registration event are eligible to register for courses.

Independent Study
In special circumstances, a student may obtain permission to take a regular course on an independent study basis. Students also have the opportunity to expand on an area of special interest by developing an independent study project with an instructor and obtaining the approval of the dean of academic affairs.

Preparing To Transfer
Preparing to Transfer to a Four-Year University
Colleges and universities are working to make transfer easier. Students must plan ahead, ask questions and use pathways created by transfer and/or articulation agreements.

Students Currently Enrolled at M State:
Students should discuss plans with an M State advisor. Call or visit the intended transfer institution. Obtain the following materials and information:
- College Catalog
- Transfer brochure
- Information on admissions criteria and on materials required for admission (e.g. portfolio, transcripts, test scores). Note that some majors have limited enrollments or their own special requirements such as a higher grade point average.
- Information on financial aid (how to apply and deadlines for application)

After reviewing these materials, make an appointment to talk with a program advisor or counselor at the transfer institution. Be sure to ask about course transfer and admission criteria.

If not currently enrolled in a college or university, students might begin to plan by meeting with a transfer specialist or admission officer from the intended transfer institution.

Understanding How Transfer of Credit Works:
Completion of the 40-credit Minnesota Transfer Curriculum at M State assures the acceptance of these credits as having satisfied the general education requirements of Minnesota State Colleges and Universities and some colleges within the University of Minnesota system. In addition, the four-year institutions in the state strongly recommend that students complete their associate degrees before transferring. The College has articulation agreements with several of these institutions guaranteeing the acceptance of the associate degree as completing the first two years of a baccalaureate degree. Check with an Academic Advisor for more information.

For students who transfer without completing an associate degree or the Minnesota Transfer Curriculum, the receiving college or university will decide which credits transfer and whether those credits meet its degree requirements. The accreditation of both sending and receiving institution can affect the transfer of credits earned.

Institutions accept credits from courses and programs like those they offer. They look for similarity in course goals, content and level.
Baccalaureate degree programs usually count credits in three categories: general education, major/minor courses and prerequisites and electives. The key question is whether credits fulfill the requirements of the degree or program. Not everything that transfers will apply toward graduation.

Preparing to Transfer to M State:
Application for admission is the first step in transferring to M State. Fill out the application prior to the deadline. Enclose the application fee. Request that official transcripts be sent from every institution attended. Be prepared to provide a high school transcript or GED test scores as well. After the College notifies students of acceptance for admission, transcript credits will be evaluated for transfer. How courses specifically meet degree requirements is dependent on the student’s declared program of study/major. Some courses may not meet specific department or major requirements.

Questions about the evaluation may be addressed to the registrar’s office. Transfer credit decisions can be formally appealed.

Your Rights as a Transfer Student:
• A clear, understandable statement of an institution's transfer policy.
• A fair credit review and an explanation of why credits were or were not accepted.
• A copy of the formal appeals process and the ability to appeal any decision made.

Usual Appeals Steps:
• A student fills out an appeal form online. Supplemental information provided to reviewers (a syllabus, course description or reading list) can help.
• The department or instructor reviews.
• The student receives, in writing, the outcome of the appeal.
• The student can appeal decision to the Chief Academic Officer.

Transfer of Credit to M State
Students wishing to transfer credit from another institution to M State must request an official transcript from each institution previously attended. If the student has taken courses at other institutions that are part of the Minnesota State Colleges and Universities system (MnSCU), the M State Transfer Specialist will be able to access this information electronically in most cases. For all other college transcripts or for transcripts from MnSCU institutions that are not available electronically, it is the student’s responsibility to request that official transcripts be sent to M State. The transfer evaluation process will begin once all transcripts have been received and the student has been accepted to M State with a declared major. Students may be required to provide course descriptions, outlines and/or other information regarding their coursework as part of the transfer evaluation process. Technical courses need to have been completed within the last five years unless this requirement is waived (for more information, refer to the College’s Recency Policy).

Transfer of D grades:
If the student’s overall GPA at another institution is lower than 2.0, courses in which the student earned a grade of D at that institution will not be transferred to M State. These courses are listed on the student’s Degree Audit Report (DARS) and noted as NTD (non-transfer D). If the student’s GPA at the sending institution is above a 2.0, courses at that institution in which a D grade was earned are transferred to M State for credit and are noted on the student’s DARS as TD (transfer D). An exception to this requirement is made for any course taken at another Minnesota State Colleges and Universities (MnSCU) institution if the course has met any of the Minnesota Transfer Curriculum (MnTC) goal area(s). If the student earned a grade of D in a course that meets any MnTC goal area(s) and was taken at a MnSCU institution, the course will transfer to M State regardless of the student’s GPA at the sending institution.

Individual programs/departments reserve the right not to accept grades of D in fulfillment of program requirements. In these cases, the requirement is applied to all students in the program and to all courses taken, regardless of whether the course was taken at M State or at another institution.

Change of Major/Program or Campus at M State
Students who wish to change their major or move to another campus of M State may request to do so by completing a Change of Major/Program or Campus form online. The request will be reviewed and approved based on space availability in the program and/or campus requested by the student. The student will be notified by the College if the request cannot be accommodated.

Student Records
Confidentiality of Student Records / FERPA Notification and Student Directory Data
M State maintains records about students in various places within the College.

Under the Minnesota Government Data Practices Act (MGDPA) and the Family Educational Rights and Privacy Act (FERPA), students have the right:
• To inspect and review their educational records.
• To request an amendment of records for the purpose of correcting inaccurate or misleading records, or records that violate student privacy or other rights in some fashion.
• To have a hearing regarding records which the student believe are inaccurate or misleading, if the College does not amend records upon request.
• To place a written statement explaining the disagreement with the College in their records, if the College does not amend records after the opportunity for hearing about whether the records are inaccurate or misleading.
• To consent to disclosures of information that identify the student personally, except to the extent that disclosures are allowed without consent under state and federal law.
• To file a complaint with the United States Department of Education if the student believes the College is not meeting the requirements of the federal law. Written complaints should be sent to: Family Policy Compliance Office, U.S. Department of Education, 600 Independence Avenue, S.W. Washington,
FERPA and the MGDPA permit disclosures of student information without consent to College officials with legitimate educational interest. A college official is a person employed by the College in an administrative, supervisory, academic support or support staff position, a person or company with whom the College has contracted, a student serving on an official College committee, a person serving on the Board of Trustees or in the Office of the Chancellor, a person assisting another College official in performing his or her tasks, and/or contractors, consultants, volunteers and other service providers. A College official has legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

Records maintained on students are categorized as follows:

- **Public Data** – Data that has been designated as directory data is considered public. The Student Directory Data policy defines directory data for M State.
- **Private Data** – Almost all educational data is private. Private data is accessible to the subject of the data and to those who have a business need for access to the data. Students must provide the College with prior written consent for disclosure of private data.
- **Confidential Data** – Confidential data is not accessible to the subject of the data. Confidential data is accessible only to individuals or agencies authorized by law to have access to the data.

Student Directory Data

Student directory data is considered public data, and the college may release it without a student’s written consent. A student may, however, make a written request to prevent the college from releasing directory data without the student’s written consent. Minnesota State Community and Technical College defines directory data to include:

1. Name
2. Items needed to be accepted to the college and/or to a selective admissions program
3. Categories of holds preventing a student from registering for classes (i.e., academic or business office).
4. Major field of study
5. College email address
6. Honors and awards
7. Most recent educational agency or institute attended
8. Dates of attendance
9. Weight and height (used for student athletes only)
10. Dates of graduation, certification and awards

Notice to students: If you are currently enrolled in or receiving services from one college or university within the Minnesota State Colleges and Universities (MnSCU), your academic records from that institution are available to officials of other schools within MnSCU while you are in attendance. M State forwards education records to other agencies or institutions that have requested the records and in which the student seeks or intends to enroll or is already enrolled so long as the disclosure is for purposes related to the student’s enrollment or transfer. Disclosures of your records to other schools under other circumstances may require your prior written consent. Students should contact the dean of student success if they have questions about their rights.

Change in Student Record

The College expects students to report any name, address, program/major, telephone number or other record changes to the Student Services Office. This ensures accuracy of student information and allows the College to communicate important information to students. Students should use the appropriate online form to make such changes.

Students who have name changes must provide legal documentation to the College. Contact Student Services with questions.

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**Academic**

Classification of Students

A student who has earned fewer than 30 credits is classified as a freshman. One who has earned 30 credits or more is classified as a sophomore. Two other terms are used occasionally to refer to a student’s status: “Part-time” refers to students who carry less than 12 credits, and “visiting” refers to occasional students who are not currently pursuing a degree or certificate.

Graduation Policy

M State grants Associate in Arts (AA) degrees, Associate in Science (AS) degrees, Associate in Applied Science (AAS) degrees, Associate in Fine Arts (AFA) degrees, diplomas and certificates. The following general requirements apply to all candidates for each of the degrees.

General Requirements:

- Achieve a minimum cumulative GPA of 2.00.
- Successfully complete all required coursework for the program major(s) according to criteria established by the College. The actual graduation date will be within the semester in which all coursework, transfer credits and related materials required for program completion are finalized.
- Programs may have additional graduation requirements. These requirements are published and available from program faculty and advisors.
- Students must earn 20 semester credits/ equivalent or one-third of the credits required for graduation at the granting institution, whichever is less.
- Requirements are established at the time of admission to the program.
- Students must complete an application for graduation. The application can be obtained at www.minnesota.edu.

Career Exploration and Placement Services

The College assists students with career exploration through one-on-one and/or group assistance and counseling. Each campus offers career
interest inventories and other resource information and customized coursework and services to help students create and meet their educational and career goals.

For technical programs, the College also assists students with placement services for one year following graduation. While the College does not accept responsibility for a student securing employment, the College offers services designed to assist students in the job-seeking process. The College services include assistance with portfolio and resume development, and interviewing and job searching techniques.

Carl D. Perkins Vocational Career and Technical Education Act of 2006

M State partners with Lakes Country Service Cooperative and various education, business and community agencies to carry out services as part of the Carl D. Perkins Vocational Career and Technical Education Act of 2006. The purpose of the Act is to improve career and technical education and create opportunities to enter high-skill, high-wage and high-demand employment in Minnesota for all learners. The Act places special emphasis on improving access and services for special student populations defined by law. These special populations include:

- Individuals with disabilities
- Individuals from economically disadvantaged families, including foster children
- Individuals preparing for non-traditional fields
- Single parents, including single pregnant women
- Displaced homemakers
- Individuals with limited English proficiency

Non-traditional fields also receive special emphasis in the Act. A non-traditional field is defined as a high-skill career field for which students from one gender comprise fewer than 25 percent of the students enrolled in the field. Examples include women in construction electricity or men in dental hygiene. M State encourages students to consider non-traditional fields, and we welcome questions and inquiries from all students and members of the public. For more information about non-traditional fields, please contact the enrollment manager at any M State campus. For eCampus programs, contact the dean of student access for the College.

For information about how to access Perkins services and programs at any M State campus, contact Carrie Brimhall, associate vice president of academic and student affairs, at carrie.brimhall@minnesota.edu.

Academic Assessment

Program faculty assess the effectiveness of student learning in programs and disciplines each year. Career programs share results with their industry-based advisory committees and then adjust their curriculum as appropriate.

Academic Support Services

The College provides students with numerous services to support their educational experience. Each campus has tailored its services to meet the needs of its student population and may include:

- Academic advising, counseling and support
- Career counseling, resources and assessment
- Career placement services
- English Language Learner services
- Free tutoring, study skills assistance
- and other learning services
- Career counseling and referrals to other agencies
- Library services
- Multicultural programming and services
- Services for students with disabilities
- Writing assistance

For more information or to obtain any of these services, contact Student Services.

International Students (F-1, M-1 Visa)

International students are required to be enrolled in 12 or more credits each semester (fall and spring). Upon arrival at the college, students must present their visa and passport bio page to the international student advisor. International students must purchase health insurance through MnSCU. International students are responsible for maintaining their legal status while enrolled at M State.

English Language Learners (ELL)

The ELL and academic advisors offer assistance to English language learners who seek aid in getting admitted and enrolled at M State. M State offers courses and support services to assist ELL students reach their educational goals. See the ELL advisor, multicultural advisor or Learning Center staff for more information on support services.

Student Credit Load

The maximum number of credits that a student is allowed to take in any one semester is 20. A student may complete the appeal form to petition the academic dean to take more than 20 credits in one semester.

Credit by Examination

A student may challenge any program-level course at M State through an examination for credit with the appropriate department by the drop/add date. The student should obtain a Credit by Examination form at www.minnesota.edu to secure approval for such an examination from the appropriate faculty. A $50 per credit (lecture or lab) fee will be assessed for the course that the student intends to challenge. If the student fails the test, the attempt is not recorded on the student’s transcript. A student MAY NOT repeat a challenge examination.

Financial aid amounts are based in part on the number of credits students register for each semester. Any test-out credits are not counted toward determining a student’s status of full-time, three-quarter-time, half-time, or less than half-time to determine financial aid awards.

A student may not test-out of a course which already appears on the student’s record. Students are encouraged to complete the credit by examination process well in advance of the term but must complete it by the drop/add date.

Refer to the Residence Credits Policy to determine any limitations to earning credits by examination.

Auditing Courses

Students intending to audit a course (earn no credit) are required to register for the course, pay the course tuition and fees and submit a Audit Grade Request form online. Auditing students may not need to meet regular course requirements but should confer with the instructor as to their privileges and responsibilities in the course. A student may change from credit to audit status or audit to credit status any time during the
first five days of the semester. Courses audited are not included in determining the total credits earned toward a major or the cumulative grade point average.

Drop/Add/Withdraw
A student must drop a class through the first five instructional days of a semester to avoid being billed tuition and fees for the course. No entry will be made on the student’s academic record if a course is dropped within the first five instructional days of a semester.

A student may add a class through the fifth day of instruction for the semester. Proportional time limits may be applied to courses of shorter duration.

A student may withdraw from a course no later than the point at which eighty percent (80%) of the course has elapsed. To verify the exact last date to withdraw for each course, students may log into their E-Services account, view their class schedule and check the information listed in the “Last Dates to Drop/Withdraw” column.

A course from which a student withdraws after five instructional days and before 80 percent of the course has elapsed will appear on the student’s record as a withdraw (W).

Tuition and fees will be assessed for all courses for which the student is registered after the fifth instructional day of the semester. Courses from which a student withdraws after the fifth instructional day will not reduce the student’s tuition obligation.

Student financial aid is calculated based on the number of credits a student is registered for at the end of the drop/add period. Accumulated withdrawals will impact financial aid eligibility and may require repayment of received funding per federal guidelines.

The college does not automatically drop or withdraw a student for non-attendance. Should a student fail to begin attendance by the fifth instructional day of the semester, a grade of FN may be issued by the instructor. An FN grade will prevent the disbursement of financial aid for that course. Should a student ceases attendance and/or participation in a course for 14 consecutive calendar days without prior arrangements having been made with the instructor, a grade of FW may be issued by the instructor.

When students do not officially drop or withdraw, they receive the earned grade in each course for which they are registered and will be responsible for tuition and fees for those courses. It is the student’s responsibility to drop or withdraw from a course.

The College reserves the right to administratively drop a student for non-attendance in special circumstances.

Withdrawing from the College
Students needing to initiate a withdrawal from all their college courses can do so online at www.minnesota.edu. Please note that tuition and fee refunds do not apply to withdrawing from individual courses.

The College encourages students to visit with their academic advisor prior to making a decision to complete the withdrawal process. Withdrawal may have an impact on student repayment of financial aid, eligibility to receive financial aid and satisfactory academic progress.

The College refunds tuition and fees to students who withdraw in accordance with MnSCU policy. Students receive a proportionate refund for tuition and fees provided the withdrawal process is completed within the established deadline.

After the fifth day of the semester, the College issues refunds according to the following schedule:

**Fall and Spring semesters:**

<table>
<thead>
<tr>
<th>Date of Withdrawal</th>
<th>Refund allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th through the 10th day of the term</td>
<td>75%</td>
</tr>
</tbody>
</table>

Summer sessions and other terms at least three weeks in length but less than 10 weeks in length:

<table>
<thead>
<tr>
<th>Date of Withdrawal</th>
<th>Refund allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th through the 10th day of the term</td>
<td>50%</td>
</tr>
<tr>
<td>11th day and after</td>
<td>No refund allowed</td>
</tr>
</tbody>
</table>

Minnesota Transfer Curriculum (MnTC)
The Minnesota General Education Transfer Curriculum is the result of a collaborative effort by all of the two- and four-year public colleges and universities in Minnesota to define a common philosophy toward general education. The goal of this effort is to help students transfer their work in general education. Completion of a defined transfer curriculum at one institution enables a student to receive credit for all lower-division general education courses upon admission to any other MnSCU institution.

Students who complete a general education transfer curriculum are certified in 10 areas of competency by faculty at the sending institution. Beginning January 1, 2002, all Minnesota Transfer Curriculum Courses offered by MnSCU institutions must transfer within MnSCU into the goal areas as designated by the original institution. The following are the 10 goal areas of the Minnesota Transfer Curriculum:

**Minnesota Transfer Curriculum Goal Areas:**
1. Written and Oral Communication
2. Critical Thinking
3. Natural Sciences
4. Mathematics/Symbolic Systems
5. History and the Social and Behavioral Sciences
6. The Humanities—the Arts, Literature and Philosophy
7. Human Diversity
8. Global Perspective
9. Ethical and Civic Responsibility
10. People and the Environment

The College Catalog contains a complete listing of all the Minnesota Transfer Curriculum courses and their corresponding goal areas. The College website also contains this listing.

**Degree Requirements**
The requirements for the AA, AS, AAS and AFA degrees, diplomas and certificates are detailed in the College Catalog, in addition to being located on the M State website.

Please consult an academic advisor with questions about the course requirements for a specific degree, diploma or certificate.

**Academic Program Assessment**
All academic programs at the College develop and implement plans for assessing effectiveness of student learning. These plans include assessment of all approved Program Learning Outcomes to provide evidence of student learning at the entry-level and/or at the level deemed appropriate for graduates of College programs. The results of these assessments are used by the program faculty to plan strategies for improved student learning.
In addition to assessing student learning, the College works in other ways to assess the quality of student experiences at the College, both inside and outside the classroom. As a result, students will be asked to participate in a variety of surveys and other assessments, such as course surveys, satisfaction surveys, comment cards and focus groups. The College uses the feedback from these assessments to determine ways to improve.

**Academic Advising**

It is the College’s philosophy that academic advising is essential to the growth and development of each individual student. Academic advising will be available to all students to assist with scheduling and academic issues. It is the intent of the College to provide the student with personally relevant information and instructional assistance.

**Mid-Term Progress**

Students should meet with their advisors to review mid-term progress each semester.

**Final-Term Grades**

Final grades are provided to students upon completion of an academic term.

**Grading**

The College will use the following letter grades to document student achievement:

- **A** = Excellent
- **B** = Above Average
- **C** = Average
- **D** = Below Average
- **F** = Failing
- **CR** = Credit by examination
- **NC** = No Credit
- **P** = Pass
- **W** = Withdraw
- **I** = Incomplete

**Other Designations:**

- **H** = Honors project
- **AU** = Audit of a class for no credit
- **Z** = Designator to indicate course is in progress or a faculty member has not submitted a final grade.
- **FN** = Unearned F/Never attended.
- **FW** = Earned F/Ceased attendance prior to the end of the term.

**Grade Point Average**

Academic progress will be evaluated, in part, in terms of grade point average. The following system will be used to establish a student’s grade point average and will be the only grades included in the GPA calculation:

- **A** = 4 grade points per credit
- **B** = 3 grade points per credit
- **C** = 2 grade points per credit
- **D** = 1 grade points per credit
- **F** = 0 grade points per credit

A GPA is determined by the sum of all grade points divided by total credits attempted, except those credits that carry grades other than the usual A - F grades.

**Academic Forgiveness**

Academic forgiveness gives an undergraduate student a one-time opportunity to establish a new grade point average.

Academic forgiveness cannot be granted if a student has earned a post-secondary degree following his/her initial M State attendance and has applied M State credits toward that degree. Courses that have been used for completion of certificate, diploma or degrees are not subject to academic forgiveness.

Please see the College website at www.minnesota.edu for the current Academic Forgiveness Policy.

**Satisfactory Academic Progress**

All students in a program of study must meet satisfactory academic progress standards in order to remain enrolled and maintain eligibility for financial aid. Students must maintain an acceptable grade point average and completion rate for their registered credits to meet M State’s standards for satisfactory academic progress. The acceptable grade point average and completion rate is progressive based on cumulative registered credits and is detailed below:

**Qualitative Measure**

Grade Point Average (GPA): All students are required to meet the minimum cumulative GPA as shown below.

<table>
<thead>
<tr>
<th>Cumulative Registered Credits</th>
<th>Minimum Required GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5</td>
<td>0.00</td>
</tr>
<tr>
<td>6 – 23</td>
<td>1.75</td>
</tr>
<tr>
<td>24 or more</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**Quantitative Measure**

Completion Percentage: All students are required to earn a minimum of their cumulative registered/attempted credits. Grades of F, FN, FW, I, NC, W, and Z (or blank/missing) are treated as registered credits but NOT earned credits and thus negatively impact the percentage of completion.

Formula:

\[
\text{Percent earned} = \left( \frac{\text{cumulative earned credits}}{\text{cumulative registered credits}} \right) \times 100
\]

<table>
<thead>
<tr>
<th>Cumulative Registered Credits</th>
<th>Minimum Required Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5</td>
<td>0%</td>
</tr>
<tr>
<td>6 – 23</td>
<td>58%</td>
</tr>
<tr>
<td>24 or more</td>
<td>66.6%</td>
</tr>
</tbody>
</table>

An incomplete grade must be removed by completing course requirements at the end of one semester, excluding summer semester. Any incomplete grade not removed will be changed to an “F.”

**Repeating Courses**

All courses taken at M State may be repeated. A student may repeat a course an unlimited number of times, unless stated otherwise. Both the original and the repeat grade will appear on the student’s transcript. The highest grade will be used to compute the student’s GPA. Exceptions include choir, music lessons and student newspaper. Financial aid may not cover the cost of repeated courses. The College advises students to check this with the financial aid office.
Evaluation Period
The College will evaluate satisfactory academic progress after each term which includes fall, spring and summer. All students with registered credits during a term will be evaluated at the end of that term.

Failure to Meet Standards
Warning Status: If at the end of the evaluation period a student has not met either the College’s GPA or completion percentage standard, the student will be placed on warning status for one evaluation period. Students on warning status are eligible to register and receive financial aid.

Reinstatement of Students on Warning Status: If at the end of the academic warning period a student who has been on warning status has met both the cumulative GPA and cumulative completion percentage standards, the warning status is ended and the student is returned to good standing.

Suspension of Students on Warning Status
If at the end of the warning period a student who has been on warning status has not met both the College’s cumulative GPA and completion percentage standards, the student shall be suspended. Students on suspension are not eligible to register or receive financial aid. Without an appeal (see “Appeals and Probation” below), the suspension period is for one calendar year. Students seeking to return after the one-year suspension period must still appeal for potential financial aid reinstatement.

Suspension of Students for Other Reasons
Suspension for Inability to Meet Program Requirements within the Maximum Time Frame: If at the end of the evaluation period the College determines it is not possible for a student to raise her or his GPA or course completion percentage to meet the standards before the student completes his or her program of study at the College, the student shall be suspended from financial aid eligibility.

Suspension for Exceeding the Maximum Time Frame: If at the end of the evaluation period a student has failed to meet the College’s standard for measurement of maximum time-frame, the student shall be suspended from financial aid eligibility.

Suspension for Extraordinary Circumstances: The College may immediately suspend students in the event of extraordinary circumstances, including but not limited to previously suspended (and reinstated) students whose academic performance falls below acceptable standards during a subsequent term of enrollment; students who register for courses, receive financial aid, and do not attend any classes; and students whose attendance patterns appear to abuse the receipt of financial aid.

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Suspension at another MnSCU Institution: Students who have been suspended from another MnSCU institution who have an active suspension on their record will not be allowed to register for courses at the College. Students must appeal for potential financial aid reinstatement.

Notification of Status and Appeal Results
Status Notification: Students are notified in writing (email or letter) when the evaluation of satisfactory academic progress results in “Warning,” “Suspension,” or “Probation.” The notice includes the conditions of the current status and the conditions necessary to regain eligibility for registration and financial aid (where applicable). Notice of suspension also includes the right and process necessary to appeal suspension.

Appeal Result Notification: Students are notified in writing (email or letter) of the results of all appeals. Approved appeals may include specific conditions under which the appeal is approved and any conditions necessary to retain eligibility for registration and financial aid.

Reinstatement
Students who have been suspended from financial aid eligibility may be reinstated after an appeal has been approved or the minimum cumulative GPA and completion percentage standards have been achieved. Students suspended from the College may be reinstated to enroll for classes after an appeal or after the suspension period of one year has passed, but may not be eligible for financial aid until they’ve met the conditions of their appeal for financial aid reinstatement.
Definitions

Credits: The unit by which academic work is measured.

Registered (Attempted) Credits: The total number of credits for which a student has officially enrolled at the end of the registration drop/add period each term.

Cumulative Registered Credits: Cumulative registered credits are the total number of credits registered for all terms of enrollment at the College, including summer terms and terms for which the student did not receive financial aid.

Earned Credits: Earned credits include the grades of A, B, C, D, AH, BH, CR and P. They are successfully completed credits that count toward the required percentage of completion (66.6 percent) as defined by the quantitative measure.

Attempted, NOT Earned: Grades of F, FN, FW, I, NC, W, Z (or a blank/missing grade) will be treated as credits attempted but NOT successfully completed (earned).

Academic Forgiveness: Credits for which a student has been granted academic forgiveness WILL be included in all financial aid satisfactory progress measurements.

Audited Courses: Audited courses are not financial aid-eligible courses and are not included in any financial aid satisfactory academic progress measurements.

Consortium Credits: Consortium credits are those credits for which a student is registered at another college/university, which are accepted in transfer by this College and are included for purposes of processing financial aid at this College. These credits are included in all satisfactory academic progress measurements.

Developmental Credits: Developmental credits are those awarded for remedial course work (below 1000 level). Students may receive financial aid for developmental credits up to a maximum of 30 credits (excluding ELL). These credits are included in all satisfactory academic progress measurements. However, up to 30 developmental credits are excluded from the maximum timeframe calculation.

Incompletes: The grade of “I” (incomplete) is a temporary grade which is assigned only in exceptional circumstances. It will be given only to students who cannot complete the work of a course on schedule because of extraordinary circumstances beyond their control. An “I” grade will automatically become an “F” grade at the end of the next term (not including summer sessions) if requirements to complete course work have not been satisfactorily met. Faculty have the option of setting an earlier completion date for the student. A grade of “I” is not included when calculating grade point average or earned credits. Thus, it does not impact GPA but does negatively impact earned credits and, therefore, negatively impacts the student’s percent of completion.

Repeat Credits: Repeat credits are awarded when a student repeats a course in order to improve a grade. A student may repeat a class as allowed by the College. The College will determine, based on its Repeating Courses Policy, which grade will become the grade calculated in the GPA. All repeated credits are included in the percent of completion and maximum time frame calculations.

Transfer Credits: Transfer credits are credits earned at another institution which are accepted by this College. Transfer credits which are accepted by M State and are applicable to the student’s program of study shall be counted as credits attempted and completed for calculation of completion percentage and maximum time frame. Grades associated with these credits are not included in calculating GPA.

Withdraw: The grade/mark of “W” (withdrawal) is assigned when a student withdraws from a class after the drop period. It is not included in calculating grade point average or earned credits. Thus, it does not impact GPA but is counted as attempted credits, therefore negatively impacts the student’s percentage of completion.

Academic Appeals

Students may appeal any academic issue and discuss it with the appropriate employee(s) and/or administrator(s) as established by College policy or procedure. Students have the right to seek remedy through the College’s designated academic appeal process. Students should use available informal means (direct conversation) to resolve disputes before filing an appeal. There will be no retaliation of any kind against students, faculty or staff who participate in the appeal process. For more information about filing an academic appeal, contact Student Services.

Student Grievances

Students have the right to file a grievance in writing if they have allegations of improper, unfair, arbitrary or discriminatory action by an employee involving the application of a specific provision of a college rule or regulation. Students should use available informal means to have decisions reconsidered before filing a grievance. No retaliation of any kind shall be taken against a student for participation in a complaint or grievance. These procedures shall also protect data privacy rights. For more information on filing a grievance, contact your campus Director of Student Services.

Program Interruption

The academic calendar of M State is subject to modification or interruption due to occurrences such as fire, flood, labor disputes, interruption of utility services, acts of God, civil disorder and war. In the event of any such occurrences, the College will attempt to accommodate students. The College will not, however, guarantee that courses of instruction, extracurricular activities or other college programs or events will be completed or rescheduled.

Financial

Tuition

Tuition for all students is set annually by the Minnesota State Colleges and Universities Board of Trustees and charged on a per credit basis. All applicable tuition charges are billed to the student and are payable on or before the tuition and fee due date. Tuition not paid by this date as defined by the registration cancellation for non-payment policy (listed below) will result in the cancellation of all courses.

Drop for Non-payment

Minnesota State Colleges and Universities policy requires that minimum payment criteria must be met one week prior to the first day of each semester to avoid an administrative drop of all courses a student is enrolled in for the term. To ensure courses are not canceled, a student must have one of the following payment criteria in place one week prior to the first day of classes.

1. Pay in full using cash, check or credit card.
2. Create a payment plan. The student has made a down payment of 15 percent of tuition and fees charges or $300, whichever is less, and an active payment plan with FACTS Management Company is in place.
3. Apply for federal financial aid. Once the student has applied for financial aid and M State has received the application (FAFSA) results from the Department of Education, courses will be confirmed. To access the FAFSA application, go to www.fafsa.ed.gov.
4. Submit a scholarship or third-party authorization. As soon as M State has received payment in the form of scholarships, third-party authorizations or tuition waivers that meet the minimum down payment of 15 percent or $300, courses will be confirmed.

5. Apply for Veteran’s Education Benefits and complete the Veteran’s Sign-Up form.

6. For international students, an active I-20 or DS20.19 is on file.

Create an Active File
Students can manage their account online at SpartanNet by clicking on the E-Services link. Once student tuition and fee bills are posted, there will be messages to indicate whether the payment criteria to avoid an administrative drop have been met. If any known payment or financial aid information does not appear on the online screens, students should contact Student Services for resolution as early as possible.

Students who register and later change their plans for attendance should not rely on the cancellation for nonpayment (drop for non-payment) process to complete administrative drops for them. Students who do not wish to be enrolled must drop their courses via the online registration process and officially withdraw from M State for accurate determination of their financial obligation to the College, if any.

Tuition Reciprocity
Reciprocity agreements exist between the state of Minnesota and the states of North Dakota, South Dakota, Wisconsin, Michigan, Missouri and Nebraska. Students of these states and the province of Manitoba are permitted to pay tuition at a rate below the nonresident rate. Reciprocity application forms are available from high school counselors, online or see Student Services for assistance.

Non-resident Tuition
M State allows students from states other than Minnesota and from states that do not have reciprocity agreements to attend and pay resident tuition rates.

General Fee for Senior Citizens
As defined in Minnesota Statutes §135A.51, senior citizens who have reached 62 years of age before the beginning of any term, or a person receiving a railroad retirement annuity who has reached 60 years of age before the beginning of the term, can pay an administrative fee of $20 per semester credit to be enrolled in credit courses on a space-available basis after all students who pay regular fees have been accommodated.

Residency
Students who seek to qualify for in-state tuition must first meet the following threshold requirements:

- Students must have resided in Minnesota for at least one calendar year immediately prior to applying for in-state tuition.
- Residence in Minnesota must not be merely for the purpose of attending the College.

Each of the following additional facts and circumstances will be considered when responding to a petition for in-state tuition. Not one of these factors is either necessary or sufficient to support a claim for in-state tuition.

- Continuous presence in Minnesota during period when not enrolled as a student
- Sources for financial support are generated within Minnesota

The following circumstances, standing alone, shall not constitute sufficient evidence of domicile to affect eligibility for in-state tuition under these regulations but may be considered as part of the demonstration of the facts and circumstances listed above.

- Voting or registration for voting
- The lease of living quarters
- A statement of intention to acquire a domicile in Minnesota
- Domicile of student’s spouse in Minnesota
- Automobile registration
- Other public records, e.g. birth and marriage records

College Fees
Various fees will be assessed to students depending upon enrollment status, courses attempted and services offered by the campus attended. The following is a list of the fees that may be assessed. Fees unique to a program or a class offering are detailed in the course requirement list. Fees shall be established annually by the president. A fee schedule is available from the campus business office for the current academic year. Fees may vary based on the campus where the student is enrolled.

Application Fee
All students entering the College will be assessed a one-time, non-refundable application fee.

Art Fee
All students in studio art courses are assessed a fee to partially cover the cost of studio materials.

Athletic Fee
Students in varsity courses may be assessed a fee to cover the costs of travel uniforms and road trip expenses.

Clinical Makeup Fee
In the event that a student is absent from excessive clinical time, he or she will be required to make up some or all of that time. Because this is extra time for the faculty and extra expense for the College, this fee will be assessed to the student.

CNA/HHA Testing Fee
Any nursing assistant or home health aide student wishing to take the certification test through the College is assessed this fee. The fee is used to pay for the cost of scoring the exam.

Credit by Examination Fee
When a student wishes to test out of a course through credit by examination, a credit by examination fee shall be assessed.

Culinary Arts Fee
All students in the chef training program are assessed a fee to cover meals the student consumes during the courses.
Equine Fee
All courses taught at Red Horse Ranch require a fee to cover the costs of tack and the use of ranch horses.

Golf Green Fee
Students taking golf will be assessed a fee to pay for the green fees at the community golf courses.

Late Payment Fee
Late payment fees will be assessed on the 21st day of each semester to any student who has not paid tuition, when no proof of financial aid or other funding is provided. The fee is based on the number of credits for which a student is registered.

Nursing Application Deposit
A deposit is required of all students applying for the nursing programs. The deposit is returned to the applicant if he or she is not accepted into one of the College’s nursing programs. If the student is accepted, the deposit is credited toward the student’s first term tuition.

Parking/Common Area Fee
Parking fees will be assessed on a per credit basis. The proceeds from this fee are used to upgrade and maintain the College parking facilities.

Pottery Clay Fee
Students taking the pottery course will be creating and keeping clay projects throughout the course. Each student will be assessed a fee to pay for the cost of the clay projects.

Private Music Lessons
Students wishing to take private vocal or instrumental music lessons will be assessed a fee for the lessons.

Pre-Test Assessment Fee
All nursing students are required to take an initial assessment of skills when entering the program. This fee is used to pay for the analysis of the assessment.

Post-Test Assessment Fee
In order to ensure that the nursing students have a firm understanding of the curriculum that has been delivered to them, each student is required to take a post-test assessment exam. This fee is used to pay for the analysis of the assessment.

Professional Liability Fee
Professional liability fees will be assessed to students enrolling in courses requiring clinical/internship experience. This fee is used to purchase professional liability insurance on the student’s behalf.

Replacement of Student Identification Card
Each student will receive a student identification card at no charge. In the event the card needs to be replaced, a fee will be assessed to the student.

Technology Fee
Technology fees shall be assessed on a per credit basis as outlined in the technology fee plan. Proceeds from this fee shall be used to upgrade and maintain the technical infrastructure of the College and to assist in the staffing of technology-related positions.

Student Activity Fee
A student activity fee shall be charged to students. The activity fee is allocated to Student Life activities.

Student Association Fee
All students shall be assessed a fee which is passed on to the Minnesota State College Student Association for College membership dues. This fee shall be assessed on a per credit basis.

Uniform Deposit Fee
This fee will be assessed to all students who rent a uniform from the College. The deposit is charged to ensure all uniforms are returned to the College in the same condition they were received (less ordinary wear). The fee is refundable at the end of the year if all uniforms are returned undamaged.

Uniform Rental Fee
This fee is assessed to students in programs that require student uniform rental. The fee is used to pay for the rental of the uniform.

Add Wellness Fee (Moorhead campus only)
This fee is assessed to students enrolled in courses on the Moorhead campus. The fee is used to operate the M State Fitness Center located on the Moorhead campus.

Student Payments
All tuition and fees are due on the tuition and fee due date which will be established annually by the College. All courses will be cancelled unless the student has met the payment definition outlined in the Drop for Non-Payment section of the College Catalog or Student Handbook.

In the event that the student does not receive enough financial aid, scholarship or third-party agency payment to cover all charges, the account will be considered delinquent. Also, if the student does not stay current with the agreed-upon payment plan, the account will be considered delinquent.

In the event that the account becomes delinquent, a written notice will be sent to the student which will make the student aware of the delinquency and notify him or her that payment in full must be received immediately.

Any student who does not make payment after the above notice is received will be sent a State of Minnesota 20-day letter. This letter will inform the student that the account will be turned over to the Minnesota Collection Entity if payment is not received.

In addition, no student with an outstanding account will be allowed to register for future courses, and his or her College transcript will be held until payment in full has been received.

Deferment/Payment Plan
In accordance with MnSCU policy 5.8 Minnesota M State has the ability to grant deferments and payment plans to students demonstrating the need for such arrangements.
A deferment is defined as an agreement between the College and the student to delay payment until financial aid, which is sufficient to cover all student charges, arrives at the College. Financial aid, for this purpose is described as grants, loans, scholarships or third-party authorizations. Deferments may be granted from authorized representatives of the financial aid or business offices.

M State has made arrangements with FACTS Tuition Management Services which allows students to pay for their charges throughout the term. To access these services, go to our website at www.minnesota.edu and click on the e-Cashier link. All payment plans must be paid in full before students will be allowed to register for future terms. Failure to stay current with a payment plan will put a student’s account in a delinquent status, and collection efforts will begin.

**Tuition Refund**

Tuition will be refunded to students canceling their registration at the College through a formal withdrawal process and in accordance with MnSCU policy. Refunds are only applicable to complete withdrawals from the College. The following refund schedule is for students who do an official complete withdrawal from the College. To constitute a complete withdrawal, a student must withdraw from all courses for which he or she is registered in the term.

Refund for fall and spring term courses (at least 10 weeks in length):
- Withdrawal from 1st through 5th instructional day: 100% refund
- Withdrawal from 6th through 10th instructional day: 75% refund
- Withdrawal from 11th through 15th instructional day: 50% refund
- Withdrawal from 16th through 20th instructional day: 25% refund
- Withdrawal after the 20th instructional day: 0% refund

Refund for summer session courses (at least three weeks in length):
- Withdrawal from 1st through 5th instructional day: 100% refund
- Withdrawal from 6th through 10th instructional day: 50% refund
- Withdrawal after 10th instructional day: 0% refund

Courses that start after the fifth instructional day of the term or courses that are less than three weeks in length will have a 100 percent refund of tuition if the student withdraws prior to the end of the first business day following the first class meeting. If the withdrawal request is made on the second or third business day following the first class meeting AND the withdrawal results in 100 percent course withdrawal, the student is entitled to a 50 percent refund. There is no refund for withdrawal from such short-term courses after the second or third business day following the first class meeting.

Federal pro rata refund will apply to federal financial aid recipients enrolled for the first time at the College.

**Financial Aid and Satisfactory Academic Progress**

In addition to meeting and maintaining the standards set forth in the college Satisfactory Academic Progress Policy, student recipients of financial aid must complete their degree, diploma or certificate within a maximum allowable period of time.

**Measuring the time period:** All students must complete their degree, diploma or certificate within 150 percent of the published length of the program (e.g. 60 credit programs must be completed within 90 attempted credits). When it becomes clear that a student cannot complete the program within the maximum allowable period, the student becomes ineligible for financial aid.

Seeking a second degree, diploma or certificate: The credits a student has earned in the successful completion of a degree, diploma or certificate program shall not be counted in the maximum time period calculation for a subsequent program, excepting for those credits which apply to both programs.

Changing programs prior to completion: Students who change programs (majors) without successfully completing a program shall remain subject to the 150 percent rule.

**Appeals:** Students may appeal the suspension of financial aid for exceeding the maximum allowable time frame based on special circumstances. The appeal form can be found on the forms page of the M State website.

**Student Information**

**Academic Advising**

Academic advising is a teaching and learning process focused on student success. Students partner with their academic advisor to develop a plan for achieving their academic and career goals. The desired outcome of academic advising is that students learn to make informed and increasingly independent decisions about their educational plans and other academic issues.

Academic planning is a continual process during a student’s enrollment at M State. Current students meet at least once each semester with their academic advisor to review their Degree Audit Report (DARS), discuss educational goals, determine progress towards graduation and receive their access code to register for the next semester. Students should
schedule an appointment with their assigned academic advisor and bring a copy of their DARS report and sample schedule to their advising session.

There are two types of academic advisors at M State, program advisors and professional advisors. Each admitted student is assigned an advisor based on their program of study.

Program advisors
• Faculty members advise students who are enrolled in technical/career programs

Professional advisors
• Advise all Liberal Arts & Sciences - Associate in Arts (AA) students
• Advise students completing the Minnesota Transfer Curriculum (MnTC)
• Advise candidates for programs with selective admission (e.g., criminal justice, dental assisting, dental hygiene, nursing and radiological technology)
• Advise Engineering - Associate in Science (AS) students
• Advise students who are undecided or undeclared

Detroit Lakes:
Karen Buboltz: Radiologic Technology candidates, Liberal Arts & Sciences AA, Registered Nursing candidates, Online RN Mobility candidates (218) 846-3670
Sarah Hofmann: Practical Nursing candidates (218) 846-3670
Mark Nelson: Accounting, Paralegal, Early Childhood & Paraprofessional Education (DL and White Earth), Carpentry (White Earth) (218) 846-3670

eCampus:
Joni Massie: Liberal Arts & Sciences AA Online, Operations Management Online, Undecided Online, PSEO Online (218) 299-6590

Fergus Falls:
Jennifer Bieniek: Liberal Arts & Sciences AA, Post Secondary Enrollment Option (PSEO), Biological Sciences AS, Engineering AS, Environmental Science AS, (218) 736-1533

Moorhead:
John Edmonds: Nursing candidates (218)-299-6880
Penny Brynildson: Dental Assisting candidates, Dental Hygiene candidates, Liberal Arts & Sciences AA (Last Names A-I), PSEO, Social Sciences Emphasis AA (Last Names A-K) (218) 299-6880
Amanda LeGare: Criminal Justice candidates, Engineering, International Students (Last Names L-Z), Liberal Arts & Sciences AA (Last Names M-Z), Social Sciences Emphasis AA (Last Names L-Z) (218) 299-6880
Kate Johnson: English Language Learners, International Students (Last Names A-K), Liberal Arts & Sciences AA (Last Names J-L) (218) 299-6880
Claudia Simon: Dual-Enrolled and Course Exchange, (218) 299-6880

Wadena:
Christian Breczinski: Nursing candidates (A-M), Liberal Arts & Sciences AA (A-M) (218) 631-7800
Suzie Rethemeier: Nursing candidates (N-Z), Liberal Arts & Sciences AA (N-Z), PSEO (218) 631-7800

Bookstores
Each M State campus has a bookstore where students can purchase textbooks, school-related supplies and M State apparel. Bookstores are usually open Monday through Friday during the academic year, with special hours during the first week of each semester and holidays. Credit cards and personal checks are accepted.

Textbook Return Information
Students may return texts and items within 10 business days from the date of sale, or by the fifth day of the semester, whichever is later. Items must be in new, salable condition. A sales receipt is required, and returns are subject to these conditions:
• For books for courses that are less than 10 days in length, books returned within the 10-day window will be considered used.
• Full credit will be given if no markings have been made in or on the book.
• Tool/supply kits must be complete.
• New books, if marked, are considered used and will be refunded at 50 percent if the book will be used in future semesters. If the book will not be used again, a refund will not be issued.
• Books purchased used may be returned for full credit.
• Flawed books or materials may be returned for full credit with a receipt, with the exception of computer software. The Computer Help Desk at the campus must validate that the software is faulty in order to be returned.
• Returns are subject to the discretion of the bookstore coordinator and do not include clearance items.

In addition to processing returns, each campus bookstore offers book buybacks at the end of fall and spring semesters.

Please contact your campus bookstore with specific questions:
Detroit Lakes: 218-846-3727
Fergus Falls: 218-736-1556
Moorhead: 218-299-6570
Wadena: 218-631-7825
eCampus: 218-736-1569

Bulletin Boards
Bulletin boards are specified on each campus for general use, while others are for office or faculty use only. All bulletins are to be placed on regular bulletin boards only. Check the bulletin boards for announcements of meetings, activities and part-time job opportunities.

Campus Dining
Each College campus offers dining services to provide students and guests with a variety of snacks, light meals and entrees. Food items are served Monday through Friday during the regular academic year. Students may ask campus dining about options to pre-pay. Campus dining services may also cater events upon request. Vending machines are also available for the convenience of students and guests.

Child Care
Child care resource information may be available from the Student Services office at each campus. Contact Child Care Resource and Referral for information about child care options in specific communities. Minnesota
Consumer Information

The College, in compliance with Title IV of the Educational Amendments of 1976 to the Higher Education Act and subsequent federal legislation, will provide and disseminate consumer information to all prospective and enrolled students. This information shall include but not be limited to the following: admission requirements, financial aid programs, costs, job placement, probation/suspension policy and refund policy.

Counseling Services

M State counselors assist in the total development of each student and his or her personal and life-career planning goals. College counselors strive to provide an accepting environment in a confidential setting. They can assist with career guidance, career selection, transfer process information, personal and life-career planning resources, short-term individual counseling and in making referrals.

Campus Counselors

Fergus Falls campus: Lon Laager 218.736.1539
Moorhead campus: Tom Dubbels 218.299.6516, Maronda Robertson 218.299.6618

Disabilities

M State complies fully with the provisions for the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, which prohibits discrimination in employment and public educational services on the basis of an individual’s disability. An individual with a disability is one who has or is regarded as having a physical or mental impairment which substantially limits one or more of that individual’s major life activities.

All M State campuses are accessible by ramps or doorways. Designated handicapped parking spaces are located near main entrances. Vehicles bearing a state handicapped license, permit or College issued handicapped parking pass are the only vehicles allowed to park in these spaces. Temporarily disabled students (e.g. broken leg) may obtain handicapped permits for a limited time from the campus director of student services. Students need a letter of verification from a doctor for all temporarily handicapping conditions (this letter must state the approximate length of the handicapping condition) to obtain a campus issued handicapped parking pass.

Assistive technology devices are available, see Disability Services for specific needs. Tape-recorded books, adapted testing and tutoring are provided. Information on note taking, study skills and time management plus developmental courses in math and composition is available. The College is equipped to serve students with various physical challenges.

In order to ensure equal access to the full range of collegiate experiences in the most integrated setting possible, the College provides a wide range of supplemental services. Students who provide the College with a recent assessment documenting a disability and apply for services, may receive the following special services:

- Support, counseling and information about assessment and referral services;
- Academic assistance for documented disabilities may include: testing assistance, note takers, use of assistive devices, and tutoring;
- Advocacy services that may include assistance from a disability services coordinator for students needing services, assistance in working individually with faculty and administrators, intervention procedures and grievance procedures.

Disability Services Coordinators:

Detroit Lakes Campus: Sara Hofmann 218-847-3734
Fergus Falls Campus: Jon Kragness 218-736-1595
Moorhead Campus: Claudia Simon, 218-299-6882
Wadena Campus: Mike Heino: 218-631-7870

Emergency/Weather Closings and Drills

If a weather emergency situation develops, campus officials will consult with local authorities, including law enforcement officials, to determine whether to cancel classes or to close a campus. Campus closings or class cancellations are announced at www.minnesota.edu and on local and regional television and radio stations. For campus-specific information, contact Student Services.

Emergency drills are held periodically during the school year. Information regarding emergency evacuation of buildings is posted throughout each campus. In the case of a tornado warning, please go immediately to an area that has been designated as a “Safe Area.”

The Star Alert wireless emergency notification system alerts students and staff if a campus is closed or if classes are delayed or cancelled. It will be in place at every MnSCU institution, so students who attend more than one campus may choose to receive Star Alerts from each. Sign up for Star Alert at SpartanNet.

Employment Information

Students seeking part-time employment on campus are urged to contact the financial aid office. Off-campus employers provide information to each campus about part-time opportunities available for students. The information is posted on the college website. Each student who is planning to work is cautioned to carefully consider his/her college course load so that the workload does not interfere with academics.

Health Services/Insurance

Students are encouraged to carry some type of health coverage while attending school. Group health insurance is available to all M State students. (NOTE: Students should check coverage within their family insurance programs.) Information and applications for student health and dental insurance may be obtained from Student Services. International students are required to purchase an MnSCU International Student Medical Insurance Policy. Health and accident insurance is the responsibility of the student. Student injuries that occur during class time are the responsibility of the student, not the College.

The College does not assume responsibility for any illness or accident to a student. The student is responsible for making financial arrangements for costs that are incurred at any health care facility.

All accidents are reported. If there is an accident or illness in a classroom or laboratory, an ambulance may be called to transport the student to a local emergency room. All campus laboratories are equipped with first aid kits, eyewash and showers for first aid treatment of minor injuries.

Laptops

Student in some M State majors and programs must possess adequate computing resources. The requirement can be met with a student-owned laptop or a laptop procured through a lease with a vendor; however, the minimum hardware specifications and general software requirements must be met to accommodate communication, research and general and specific program computing activities.
Anually, the College Information Technology Services Department identifies a minimum hardware specification and required general software to meet all programs and majors. These specifications are available from each campus Computer Help Desk. In addition, the specifications are posted to the College website. Due to the changing nature of curriculm, software and course sequencing, the College will not endorse an alternate specification. Students interested in using an alternate specification are strongly advised to consider the numerous changing variables that will affect their computing needs throughout the program of study prior to leasing or purchasing an alternate specification.

**All students are required to:**

- On request, produce proof of licensure for all software installed on the computer, and
- Register, upon request, with a Computer Help Desk.

All students using their own laptop computers or campus computer labs are subject to the rights and responsibilities of M State Acceptable Use of Computers and Information Technology Resources Policy.

**Library Services**

The four M State libraries located on the Detroit Lakes, Fergus Falls, Moorhead and Wadena campuses contain thousands of books and hundreds of magazines, journals, videos, DVDs and CD-ROMs. The library catalog can help students find books and other resources on all four M State campuses and at all state colleges and universities. Several private college library catalogs and the University of Minnesota library catalog can be accessed using the M State library catalog. It also provides access to thousands of full textbooks online. The electronic periodical databases on the library page provide access to thousands of full text periodicals. Both the library catalog and electronic periodical databases can be accessed off campus. The library catalog can also be used to renew library materials and check on accounts.

**Lost and Found**

The lost and found service is located at the reception desk on each campus. Please turn in any found item to the reception desk.

**Representing the College**

When a student appears in public, the College is judged by that student’s conduct. Care must be taken that a student or student groups not imply or state that the student or group represents the College unless specifically authorized to do so.

**Software and Printing**

M State participates in the Microsoft Student Selection Option campus agreement. Students may purchase the following Microsoft products (includes DVD media) at a reduced rate through their campus bookstore. Technical assistance and installation support is also available through the Campus Help Desk.

- A. Windows 7 Pro Upgrade 32-bit and 64-bit OS
- B. Microsoft Office 2010 Professional
- C. Microsoft Office 2011 for the Mac

At the start of each semester, each student will receive a printing credit of $12.50 added to his or her network account. The printing credit provides students with a limited amount of free printing to the campus networked printers. If a student uses the $12.50 free printing credit and needs additional printing, additional printing can be purchased at the printing kiosks on each campus. Printing costs are 5 cents for black & white and 25 cents for color. Student printing balances can be viewed on the SpartanNet portal.

**SpartanNet**

SpartanNet is a one-stop personal portal to College resources, e-services, desire2learn (D2L), student email, Star Alert and more. Students can contact their campus Help Desk if they have any problems logging in to or using SpartanNet.

**Student Clubs and Activities**

The M State philosophy is that student activities and organizations promote the complete development of the individual. Activities and organizations also help motivate students to enroll in and continue in school. Through the number and variety of activities and organizations, all students have the opportunity to participate in extracurricular programs. The student life budget supports the expenses of approved student body activities.

All student club membership and activities are governed by the Student Code of Conduct. Anyone interested in establishing a student organization should contact the dean of student success.

**Student Clubs**

**ADN (Nursing) Organization – Fergus Falls**

The ADN Organization is an extracurricular group that serves as a support group for students in the ADN Program. In addition to socializing and supporting one another, this group serves M State through various fundraisers and service projects.

**Athletics – Fergus Falls**

The Fergus Falls campus has a strong tradition of exciting, successful athletic teams. The College is a member of the Minnesota Community College Conference (MCCC) and Region XIII of the National Junior College Athletic Association (NJCAA). Men’s athletic teams represent the College in football, basketball, golf and baseball. Women’s teams compete in softball, volleyball, golf and basketball. Athletic competition includes teams from Minnesota, South Dakota, North Dakota, Michigan and Wisconsin.

**Architectural Technology Student Association – Detroit Lakes**

ATSA is comprised of students in the Architectural Technology program. The mission of the organization is to promote a greater understanding of architectural practice through construction and design tours. Students in this organization will have the opportunity to work on actual design projects for individuals and/or organizations.

**Auto Tech Club – Detroit Lakes and Moorhead**

The Auto Tech Club is composed of students who have an interest in the automotive industry. The purpose of the club is to build camaraderie among the automotive students and to work together to organize fund raising events. With the funds raised, an annual trip is taken to a location of the students’ choice. The club strives to improve the program by allocating funds for equipment and scholarships for the improvement of the program.
Automotive Technology Club – Detroit Lakes
The Automotive Technology Club is primarily for students who are interested in the automotive field.

Business Professionals of America – Moorhead
Business Professionals of America is a national career and technical student organization that serves students enrolled in business programs. The mission of BPA is to contribute to the preparation of world-class workforce through the advancement of leadership, citizenship, academic and technological skills. Members are involved in leadership, community service projects at the local level, and competitions at the state and national levels.

Civil Engineering Club – Detroit Lakes
The Civil Engineering Club is primarily for students who are interested in the Civil Engineering field.

College Ambassadors – Fergus Falls
College Ambassadors is a service group that helps facilitate and promote all major events and activities on campus. In addition to serving as ushers for plays and concerts, college ambassadors reach out to the student body and community through planning events and occasional half-time entertainment at athletic events.

Cultural Activities Can Touch US – Fergus Falls
CACTUS is a student organization designed primarily to celebrate diversity on campus. All students are welcome to participate.

Circle K – Fergus Falls
Circle K is an international collegiate service organization that promotes fellowship, leadership and volunteer service. M State’s Circle K engages students in volunteer activities throughout the community while providing leadership and management training to members. Sponsored by the two local Kiwanis chapters, Noon Kiwanis and Otter Risers, Circle K members also have the opportunity to work side-by-side with community leaders and mentors in the Kiwanis family.

College Ambassadors – Fergus Falls and Moorhead
Ambassadors is an organization whose purpose is to represent and promote M State. Students have the opportunity to develop and strengthen their leadership, communication public relations and organizational skills.

Creative Minds Connection – Student Art Organization – Moorhead
CMC is an Art/Humanities student organization that is open to all students at M State. This organization supports the creation and display of art on campus and in the public.

Criminal Justice Association – Moorhead
The Criminal Justice Association is primarily for those students who are interested in the criminal justice program.

Diesel Club – Moorhead
Diesel Club is composed of students interested in Diesel Technology. This organization promotes camaraderie within the group and works together to raise funds to take a bi-annual Diesel Club trip. The students work on projects in their field of study after class to gain knowledge and earn the needed money to pay for the trip.

F2CO (Chemistry Organization) – Fergus Falls
The purpose of F2CO is to promote chemistry interest both in the student population of M State Fergus Falls and the general public; to better understand the impact that chemistry has in our lives on a daily basis, and in improving the environment.

Ignite – Fergus Falls
Ignite is the weekly meeting of Campus Crusade for Christ on the M State Fergus Falls Campus. Ignite exists to give students an opportunity to explore issues pertaining to faith, spirituality, and Christianity.

Intramural Athletics
Each semester the College offers sports and activities such as baseball, football, basketball, bowling, softball, table tennis, darts, racquetball, volleyball and tennis, plus others as interest dictates.

Music Organizations – Fergus Falls
The Concert Choir, Voice Ensemble, Area Chorale and the Jazz Ensemble provide excellent opportunities for participation in vocal and instrumental music. One semester credit is given to students enrolled in these group activities and in private vocal or instrumental lessons. Approximately 20 scholarships are awarded to participants in music groups each year.

Mu Alpha Theta – Fergus Falls
Mu Alpha Theta is a math honor society that allows students the opportunity to explore their interest in mathematics. In addition to honing their own skills, Mu Alpha Theta members serve the math community through tutoring and coaching elementary math teams.

Phi Theta Kappa – Detroit Lakes, Fergus Falls and Moorhead
Phi Theta Kappa is the national honor society for two-year colleges. The Fergus Falls chapter, Omicron (Tulice), was chartered in 1966.

Practical Nursing Organization and Associate Degree Nursing Student Organization – Fergus Falls and Wadena
The organization is for students enrolled in the nursing programs. Each organization promotes student activities, both professional and social, for its members.

Pride Alliance – Moorhead
Pride Alliance is a student organization created by lesbian, gay, bisexual, and transgender (LGBT) students and their allies. The group serves as a source of information and a safe zone for all LGBT students and their allies. It promotes positive social and interactive experiences.

Skills USA-VICA – Detroit Lakes, Moorhead and Wadena
Vocational Industrial Clubs of America is the official organization of vocational education. It is open to all students enrolled in education throughout the world and is intended to develop an appreciation for the world of work. Competition in VICA is on both state and national levels.
Student American Dental Hygienists’ Association – Moorhead
SADHA is composed of students of the Dental Hygiene program. This organization promotes the art and science of dental hygiene, represents the common interests of the members of the dental hygiene profession and contributes toward the improvement of the oral health of the public.

Student Human Resources Organization – Moorhead
SHRO is a cocurricular organization designed to acquaint students considering a future in business within the field of human resource management and/or labor relations. Students increase their knowledge of new developments in the human resource field and develop leadership and content competencies through interaction with human resource professionals and participation in college and community events. SHRO is a chartered student organization with the Society for Human Resource Management. Students are able to join the society for Human Resource Management as student members, allowing further development of their professional skills.

Students in Free Enterprise – Fergus Falls
Students in Free Enterprise is an organization dedicated to the preservation of America’s free enterprise system.

Student Government Association
The Student Government Association is the students’ voice with the administration, faculty and the Minnesota State College and Universities system, promoting the needs and concerns of the students and the College.

United for Africa – Moorhead
United for Africa is committed to improving the lives of women and children in refugee camps in Africa, especially Darfur, Sudan, by promoting social, educational, health and basic needs through donations and fundraising.

Volunteerism Club – Fergus Falls
Circle K is the collegiate chapter of the International Kiwanis Service Organization. Their mission statement is much the same, which is to serve the college and community through volunteering and fundraising.

Student Email
Students are automatically issued an email address once they are registered to admitted. Students are expected to check their email on a daily basis, as the College uses email to send information about financial aid, registration, student services and other important topics. Students can check their M State email from off campus, as well. Student email account addresses will be in the format of firstname_lastname@my.minnesota.edu. Contact your campus Computer Help Desk as soon as possible with email questions or activation problems.

Student Housing
Each campus may maintain information about community and on-campus housing options. However, the individual student does the actual inquiry and selection of proper housing. The individual campus communities offer many types of housing which are available to college students. Please contact the appropriate campus for more information.

M State Housing - Fergus
On-campus housing is available on the Fergus Falls campus. Students wishing to live on campus can choose between two different apartment style complexes, College Manor or Williams Hillside Village. Both complexes are furnished and house four students to each apartment. The College recommends on-campus living as a positive college experience. These facilities are “no-alcohol,” and the College shares in the management of both facilities.

Student Identification Cards
The student identification card is the required form of identification for M State students. The College issues a photo identification card to students attending on-campus courses. The College issues student identification cards after students complete their initial registration. Students must show their identification cards for admission to various College events, to vote in student elections, to check out library materials, to conduct transactions in the Business Office and for other purposes as required by the College. If an identification card needs to be replaced for any reason, students may obtain a replacement identification card for a fee.

Student Lockers
Lockers are available to students on the Detroit Lakes and Wadena campuses. Locker services are extended as a convenience to students. Students must keep lockers in good condition. Students may place a lock on the locker at their expense. The College reserves the right to inspect lockers at any time. If the College needs to enter a locker when the student is not available or does not wish to be available, the College reserves the right to remove the lock at the lock owner’s expense. The College is not responsible for lost or stolen articles/items. Contact Student Services for questions about locker services.

Student Right To Know
It is the policy of the College to annually prepare and make available to all enrolled and prospective students, statistics on completion or graduation rates, transfer-out rates and employment, pursuant to the Student Rights To Know Act of 1990. This information is made available through appropriate publications, mailings and the College website.

Student Services Appeals
Students should contact the Student Services Office to initiate the Student Services appeal process.

Spartan Official Team Colors
The official team colors are blue, gold and white. All intercollegiate teams and organizations carry the name of “Spartans.”

Theater
The College Theater Department on the Fergus Falls campus produces two plays a year ranging from period to comedy to contemporary drama. The music and drama departments cooperatively produces a Renaissance madrigal once a season.

Transcript Requests
Official transcript requests are fulfilled at no charge. The Transcript Request to Self/Another Institution form is available at www.minnesota.edu.
for privacy reasons, this form must be completed and electronically signed by the student in order for transcript request to be processed.

**Travel Abroad**

The College offers students a study/travel abroad program through which students register for selected spring semester courses that are tied to a trip overseas at the end of spring semester. The credits taken for both the spring semester course work and the field experience apply to the transfer portion of the Associate in Arts degree. The courses and the cost of the program are announced during the fall semester.

**Visual Arts**

The Fergus Falls campus has long been committed to the visual arts through course offerings, exhibits in the Waage Gallery and the Charles Beck Gallery, and a permanent collection of more than 400 works displayed prominently throughout the campus. The collection began when faculty member Charles Beck encouraged students to leave a work of art for the College. Through budgeted funds and gifts to Fergus Area College Foundation, the College also has purchased the work of regional artists for its permanent collection.

The Moorhead campus Art Fund was created in 2006 as part of a State College and University Awards for Excellence faculty award to M State Art Instructor Pamela Sund. The focus of the collection on the Moorhead campus is to acquire art works that represent a variety of art traditions from the Western world, especially American traditions, and world traditions that represent diverse cultures, especially those cultures represented by the M State student population and the multicultural populations in our region.
 Minnesota State Community and Technical College has formed articulation agreements with a number of public and private institutions to assist students with their transfer goals. These agreements facilitate credit transfer and provide a smooth transition from one related program to another. Please see a transfer specialist for additional information. Additional general education credits will likely be required to complete a degree. The number of credits that transfer may vary depending on the program. Note: Students are free to explore transfer to any college, including colleges not listed in the following table; however, the number of credits that transfer may be more limited. View articulation agreements online at www.mntransfer.org. Enter the “Student portal,” select “Transfer Planning” and then “Articulation Agreements.”

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<th>Program</th>
<th>Degree 1</th>
<th>Degree 2</th>
<th>Institution</th>
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<td>Land Surveying and Mapping Science</td>
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<td>Manufacturing Management</td>
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<td>Early Childhood and Paraprofessional Education</td>
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<td>Administration</td>
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<td>Minnesota State University, Moorhead</td>
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<td>Computer Information Systems BS</td>
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All campuses listed may not offer all of the degrees listed for a specific program, please check www.minnesota.edu for programs you are interested in attending to find out what degrees are offered.

**Degrees:**

**Associate in Arts (AA)** degree is designed for transfer to a four-year institution. The AA degree requires students to complete the Minnesota Transfer Curriculum. Ask a college admissions counselor for details about your choice of major.

**Associate in Science (AS)** degree is awarded for the successful completion of a program which transfers to a baccalaureate major in a scientific or technical field. Program includes a minimum of 30 general education courses.

**Associate in Applied Science (AAS)** degree is a combination of technical credits and a minimum of 15 general education credits. M State has articulation agreements with some four-year institutions that allow transfer of a wide range of credits.

**Associate in Fine Arts (AFA)** degree is designed to provide a means for music and visual art students to pursue a path with seamless transition to a four-year music or visual arts degree and to be best prepared for a degree and/or career in music or the visual arts.

**Diploma** is the vocational degree awarded upon completion of a technical program. Studies include technical credits with 3-9 general education credits.

**Certificate** is awarded upon completion of a program requiring 30 or fewer credits.

*Program pending MnSCU approval.*
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AA (Associate in Arts)

Associate in Arts

Liberal Arts and Sciences AA ............................................ 46-48

Liberal Arts and Sciences -
Social Work Emphasis AA ...............................................49

Liberal Arts and Sciences -
Sociology Emphasis AA ...................................................49
Associate in Arts (AA) Degree:

**REQUIREMENTS**

The Associate in Arts degree can be used to fulfill freshman-sophomore general education requirements in all the state universities in Minnesota, and at several colleges within the University of Minnesota. The degree is the basic graduation award toward which most students will work if they intend to transfer. It emphasizes a broad general education. In order to obtain an AA degree, students must complete the following uniform requirements:

- Successful completion of a minimum of 60 semester credits numbered 1000 or above.
- Achieve an overall GPA of 2.0 and a GPA of 2.0 within Minnesota Transfer Curriculum.
- Earn at least 20 of the 60 credits at M State.

Complete a minimum of 40 credits of Minnesota Transfer Curriculum.

Complete a minimum of 6 credits from the following list. At least one course must include a lab ( * denotes non-lab courses ).

**AREA 2: Critical Thinking**

Complete a minimum of 6 credits from any two of the following discipline areas:

**ART 1107 Foundations of Art, 2-D**
**ART 1117 Printmaking I**
**ART 1123 Global Art History: Asian, Islamic, African, Mesoamerican**
**ART 2111 Drawing II**
**ART 2121 Painting II**
**ART 214 Photographic Art I**
**BIOL 1104 Biology of Human Concerns**
**BIOL 1107 Environmental Science Issues**
**BIOL 1108 Env Science Issues Lab**
**BIOL 1122 General Biology I**
**BIOL 2203 Principles of Nutrition**
**CHEM 1100 Fund Concepts Chemistry**
**CHEM 1111 General Inorganic Chemistry I**
**CHEM 1115 Introduction to Organic and Biochemistry**
**CHEM 2224 Organic Chemistry I**
**CHEM 2225 Organic Chemistry II**
**COMP 1130 Small Group Communication**

**COMM 1100 Interpersonal Communication**
**COMM 2240 Family Communication**
**ECON 1105 Principles of Economics**
**ECON 2210 Microeconomics**
**ECON 2222 Microeconomics**
**ECON 2500 Environmental Economics**
**ENGL 2300 Introduction to Literature, Native American Focus**
**ENGL 2322 Banned Literature**
**ENGL 2323 Horror and Supernatural Fiction**
**ENGL 2324 Children's Literature**
**ENGL 2374 The Poetics of Rock Lyrics**
**HUM 1110 Native American Culture**
**HUM 2210 Introduction to Film**
**HUM 2236 Technology in the Humanities**
**HUM 2300 Science, Class and Culture - Conceptual Wars**
**HUM 2303 A Conceptual Mosaic: Love and Sex**
**HUM 2304 Rational, Sophistic and the Truth**
**ILS 110 Integrative Learning Seminar I**
**ILS 210 Integrative Learning Seminar II**
**MATH 1100 World of Math**
**MATH 1102 Finite Math**
**MATH 1114 College Algebra**
**MATH 1115 Functions/Trigonometry**
**MATH 1116 College Trigonometry**
**MATH 1118 Precalculus**
**MATH 1122 Applied Calculus and Linear Algebra II**
**MATH 1134 Calculus I**
**MATH 1135 Calculus II**
**MATH 1207 Elementary Statistics**
**MATH 2210 Intro to Statistical Theory**
**MATH 2212 Principles of Probability**
**PHIL 1101 Ethics**
**PHIL 2202 Philosophy of Communications**
**PHIL 2204 Philosophy of Religion**
**PHIL 2225 Bioethics**
**PHIL 2230 Existentialism**
**POL 2206 Global Politics**
**PSYC 1101 Human Interaction**
**PSYC 2226 Behavior and Environmental Management**
**SOCI 1111 Intro to Sociology**
**SOCI 2215 Social Psychology**

**AREA 3: Natural Sciences**

Complete a minimum of 6 credits from the following list. At least one course must include a lab (* denotes non-lab courses ).

**ANTH 1400 Physical Anthropology**
**BIOL 1102 Introduction to Horticulare**
**BIOL 1104 Biology of Human Concerns**
**BIOL 1107 Environmental Science Issues**
**BIOL 1108 Env Science Issues Lab**
**BIOL 1115 Introduction to Biotechnology**
**BIOL 1122 General Biology I**
**BIOL 1123 General Biology II**
**BIOL 1125 Food Science**
**BIOL 1161 Introduction to Freshwater Biology I,3**
**BIOL 2200 General Ecology**
**BIOL 2202 Principles of Nutrition**
**BIOL 2220 General Microbiology**
**BIOL 2222 Prin of General Microbiology**
**BIOL 2260 Human Anatomy and Physiology I**

**BIOL 2262 Human Anatomy and Physiology II Lab 1**
**BIOL 2263 Human Anatomy and Physiology II Lab 2**
**CHEM 1101 General Inorganic Chemistry I**
**CHEM 1112 General Inorganic Chemistry II**
**CHEM 1115 Intro to Organic and Biochemistry**
**CHEM 1116 Organic Chemistry I**
**CHEM 2224 Organic Chemistry II**
**GLST 1510 Global Studies: Natural Science**
**PHYS 1104 Fundamental Concepts in Physics**
**PHYS 1106 Fund of Physics - Mechanics**
**PHYS 1107 Physics of Music**
**PHYS 1120 Introduction to Astronomy**
**PHYS 1200 College Physics I**
**PHYS 1401 College Physics II**
**PHYS 1402 Physics of Light**

**AREA 4: Mathematics/Logical Reasoning**

Complete a minimum of 3 credits

**MATH 1100 World of Math**
**MATH 1102 Finite Math**
**MATH 1114 College Algebra**
**MATH 1115 Functions/Trigonometry**
**MATH 1116 College Trigonometry**
**MATH 1118 Precalculus**
**MATH 1122 Applied Calculus and Linear Algebra II**
**MATH 1134 Calculus I**
**MATH 1135 Calculus II**
**MATH 2210 Intro to Statistical Theory**
**PHIL 1101 Ethics**
**PHIL 2202 Philosophy of Communications**
**PHIL 2204 Philosophy of Religion**
**PHIL 2225 Bioethics**
**PHIL 2230 Existentialism**
**POL 2206 Global Politics**
**PSYC 1101 Human Interaction**
**PSYC 1102 General Psychology**
**PSYC 1500 Positive Psychology**
**PSYC 2220 Abnormal Psychology**
**PSYC 2222 Social Psychology**
**PSYC 2226 Behavior and Environmental Management**
**SOCI 1111 Intro to Sociology**
**SOCI 2200 Personality Psychology**
**SOCI 2210 Social Deviance**
**SOCI 2213 Sociology of the Family**
**SOCI 2215 Criminology**
**SOCI 2216 Minority Group Relations**
**SOCI 2217 Rural Sociology**
**SOCI 2220 Food, Culture and Society**
### AREA 6: The Humanities and Fine Arts
Complete a minimum of 9 credits selected from the 3 different discipline areas.

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<td>HUM 2301</td>
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<td>HUM 2293</td>
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### AREA 7: Human Diversity
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Minnesota State Community and Technical College

Course Catalog 2013-2014
Liberal Arts & Sciences — Associate in Arts Degree (AA) — 60 credits
Minnesota Transfer Curriculum (MnTC) — 40 credits

The AA and/or the MnTC satisfy the general education requirements of Minnesota State Colleges and Universities (MnSCU).

**Associate in Arts Degree (AA)**
- Requires completion of all 10 goal areas below with a minimum of 40 credits from MnTC and elective credits to bring the total to 60. A degree is awarded after successful completion of the 60 required credits.

**For certification of Minnesota Transfer Curriculum (MnTC)**
- Requires completion of all 10 goal areas below with the 40 credit minimum from MnTC. Additional electives are not required. While a degree is not awarded at the completion of the 40 credits, a student's transcript will indicate completion of the MnTC.

<table>
<thead>
<tr>
<th>Area 1: Communication (9 credits)</th>
<th>Area 7: Human Diversity (3 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1101 (3 cr)</td>
<td></td>
</tr>
<tr>
<td>ENGL 1205, 1210 or 1215 (3 cr)</td>
<td></td>
</tr>
<tr>
<td>COMM 1120, 1130 or 1140 (3 cr)</td>
<td></td>
</tr>
</tbody>
</table>

**Area 2: Critical Thinking** (select 6 credits from 2 disciplines)

| Area 3: Natural Sciences (6 credits, at least one course must include a lab) |
|----------------------------------|-----------------|
|                                  |                 |
|                                  |                 |
|                                  |                 |

**Area 4: Mathematics/Logical Reasoning (3 credits)**
- Prep courses may be needed; see your advisor.

| Area 5: History and the Social and Behavioral Sciences (9 credits from 2 or more disciplines) |
|----------------------------------|-----------------|
|                                  |                 |
|                                  |                 |
|                                  |                 |

**Area 6: The Humanities and Fine Arts** (9 credits from 3 different disciplines. A maximum of 3 Fine Arts credits may be used. Fine Arts credits are denoted as 6F on the schedule.)

<table>
<thead>
<tr>
<th>Elective Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Credits</td>
</tr>
<tr>
<td>Total Credits (60 required)</td>
</tr>
</tbody>
</table>

**Subtotal**

A minimum of 40 credits required to this point. *Important: Fulfilling the minimum requirements for each area will total 36 credits only. 4 additional credits in Areas 1-10 are required.

**Notes**
### Associate in Arts Degree - Social Work emphasis

**AA  60 Credits**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN Transfer Electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Global Perspective Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Humanities and Fine Arts Electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Natural Science Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOL1104  Biology of Human Concerns</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM1120  Introduction to Public Speaking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON1150  Essentials of Economics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL1101  College Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>* ENGL1205 Writing About Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or ENGL1210 Writing About Current Issues</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or ENGL1215 Professional and Technical Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>POLS1120  American National Government</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSYC1200  General Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSYC2222  Developmental Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC1111   Introduction to Sociology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SW2250    Introduction to Social Work/Social Welfare</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

* Take three credits from the specified courses.

### Associate in Arts Degree - Sociology emphasis

**AA  72 Credits**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN Transfer Electives</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Global Perspective Electives</td>
<td>3</td>
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<tr>
<td>Humanities and Fine Arts Electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Mathematics/Logical Reasoning Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural Science Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>People and the Environment Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOL1104  Biology of Human Concerns</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM1120  Introduction to Public Speaking</td>
<td>3</td>
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* Take three credits from the specified courses.
Agriculture and Natural Resources

Equine Science

Equine Science AAS .................................................................52
Equine Science Diploma .........................................................52

Golf Management

Golf Management Diploma
See Business, Office and Entrepreneurship Section ............58

Food

Culinary Arts

Culinary Arts Diploma ...............................................................52

Wine Studies

Wine Studies Certificate ................................................................52

Science

Biotechnology

Biotechnology AAS .....................................................................53

Environmental Science

Environmental Science AS ........................................................53
Equine Science

AAS 61 Credits

This program will build upon the introductory skills gained from the Equine Science diploma program at M State and Red Horse Ranch. Additional academic theory and general education transfer courses will be taken online while the student works at an approved internship site. This degree and internship experience will give the student the finished skills necessary for careers in stable management, breeding, training, judging, riding instruction and related occupations.

Course # Course Title Crds
ACCT1012 Principles of Bookkeeping ................................................. 3
ENGL1101 College Writing .................................................................... 3
EQSC1001 Introduction to Equine Science........................................... 1
EQSC1050 Equine Anatomy ................................................................. 3
EQSC1060 Equine Reproduction and Nutrition ................................. 3
EQSC1130 Stable Operations I ............................................................. 1
EQSC1131 Stable Operations II ............................................................ 2
EQSC1140 Western Horsemanship ..................................................... 3
EQSC1150 Fundamentals of Riding Instruction ................................. 2
EQSC1160 English Equitation ........................................................... 3
EQSC1170 Introduction to Horse Training ................................ .......... 2
EQSC1180 Equine Evaluation ............................................................. 2
EQSC1190 Farrier Science ................................................................. 2
EQSC1200 Equine Events Management ............................................. 2
EQSC1250 Equine Internship .............................................................. 6
SOC2222 Sociology of Agriculture .................................................... 3

Equine Science Diploma 31 Credits

F

This program will provide a unique blend of transferable college credit courses along with specific academic and hands-on equine courses. This diploma will give students the introductory skills necessary for careers in stable management, horse training, horse judging, riding instruction or other related occupations. In addition, this program can serve as a starting point for a bachelor's degree program in equine science, a pre-veterinary program or a pre-veterinary technology program. Students in this program may also wish to use it as a foundation for a life-long equine learning experience as a horse owner/rider. Courses are taught at the M State campus and at Red Horse Ranch Arena, a world-class training/boarding/events facility located six miles northeast of Fergus Falls. Students will have the opportunity to learn and practice their skills at a busy private equine business facility. This gives M State students a unique advantage when entering the job market since they will possess a diploma that reflects a combination of academic learning and real-life application.

Course # Course Title Crds
ACCT1012 Principles of Bookkeeping ................................................. 3
EQSC1001 Introduction to Equine Science........................................... 1
EQSC1050 Equine Anatomy ................................................................. 3
EQSC1060 Equine Reproduction and Nutrition ................................. 3
EQSC1130 Stable Operations I ............................................................. 1
EQSC1131 Stable Operations II ............................................................ 2
EQSC1140 Western Horsemanship ..................................................... 3
EQSC1150 Fundamentals of Riding Instruction ................................. 2
EQSC1160 English Equitation ........................................................... 3
EQSC1170 Introduction to Horse Training ................................ .......... 2
EQSC1180 Equine Evaluation ............................................................. 2
EQSC1190 Farrier Science ................................................................. 2
EQSC1200 Equine Events Management ............................................. 2
SOC2222 Sociology of Agriculture .................................................... 3

Culinary Arts

Diploma 64 Credits

M

The mission of the Culinary Arts program is to provide quality education to students who wish to pursue a career of excellence in culinary and hospitality occupations. The program is designed to meet the current and future needs of the food service industry. Demand for employment is high in the industry, which accounts for more than 9 million jobs annually in the United States. Students enrolled in the Culinary Arts program receive hands-on practical lab training paired with traditional academic culinary courses that are aligned with industry needs. The program provides a broad base of education in the culinary field.

Course # Course Title Crds
MN Transfer Electives ........................................................................ 6
CULN1102 Introduction to Foodservice Preparation ........................ 4
CULN1104 Soups, Stocks and Sauces ................................................. 2
CULN1106 Salad and Baking Lab ...................................................... 6
CULN1112 Poultry and Seafood ....................................................... 3
CULN1118 Fry and Broiler Lab .......................................................... 5
CULN1120 Kitchen Math and Formulas ............................................. 1
CULN1122 Sanitation Certification ..................................................... 1
CULN1124 Menu Planning and Merchandising ................................. 2
CULN2022 Meats ......................................................................... 2
CULN2204 Breakfast Preparation Lab .............................................. 5
CULN2206 Buffet and Garde Manger Lab ......................................... 3
CULN2214 Quantity Food Preparation and Butcher Lab ............. 6
CULN2222 Production and Planning Supervision Lab .................. 6
CULN2228 Food Cost Control .......................................................... 3

Wine Studies

Certificate 9 Credits

M

The Wine Studies program provides training for a variety of occupations in the hospitality and food service industry, as well as for private social settings. Students enrolling in this program learn to study wine varietals and styles with specific attention to their food compatibilities and will be involved in extensive tasting of wine and food while focusing on the specific elements of interaction between the two. Discover creative ways to improve menu and wine list compatibilities. Explore the best equipment for professional wine service, including glasses, ice buckets, corkscrews and more. Explore the characters of the world’s top classic varieties and review their histories and food compatibilities. Acquire a comprehensive wine vocabulary using professional terms and learn to describe your sensory impressions and evaluation of a wine in words. Students will also develop an understanding of the natural elements as well as the human controlled elements of terroir. The program requires the ability to work as part of a team and communicate well with others. Tact, courtesy and a pleasant personality are important, as are a keen sense of taste and smell.

Course # Course Title Crds
WINE1100 Introduction to Wine ..................................................... 3
WINE201 Food and Wine Pairing ..................................................... 3
WINE1500 Old World Wines and New World Wines .................. 3
Biotechnology

Biotechnology
AAS  63 Credits
M

The Biotechnology curriculum is intended to meet the increasing demand for laboratory technicians skilled in a variety of techniques commonly used in biotechnology. The program objectives are designed to prepare graduates to serve as research assistants and technicians in laboratory and industrial settings and as quality control/quality assurance technicians.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL1115</td>
<td>Introduction to Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL1122</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL1123</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL2220</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOT2207</td>
<td>Nanobiotechnology and Nanobiomedicine</td>
<td>3</td>
</tr>
<tr>
<td>BIOT2210</td>
<td>Biotechnology Methods I</td>
<td>3</td>
</tr>
<tr>
<td>BIOT2220</td>
<td>Biotechnology Methods II</td>
<td>3</td>
</tr>
<tr>
<td>BIOT2230</td>
<td>Fundamentals of Bioprocessing</td>
<td>3</td>
</tr>
<tr>
<td>BIOT2231</td>
<td>Industry Experience</td>
<td>2</td>
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<tr>
<td>CHEM1111</td>
<td>General Inorganic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM1112</td>
<td>General Inorganic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1101</td>
<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1215</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MATH1114</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH1213</td>
<td>Introduction to Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL2225</td>
<td>Bioethics</td>
<td>3</td>
</tr>
</tbody>
</table>

Environmental Science

Environmental Science
AS  60 Credits
F

The AS in Environmental Science is designed to provide students an avenue to a four-year environmental science degree, preparing them for a career in an environmental field. The program emphasizes a broad background in natural sciences and mathematics, ensuring students are properly prepared for further study at an advanced level.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL1107</td>
<td>Environmental Science Issues</td>
<td>3</td>
</tr>
<tr>
<td>BIOL1108</td>
<td>Env Science Issues Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL1122</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL1123</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM1111</td>
<td>General Inorganic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM1112</td>
<td>General Inorganic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>ENGL1101</td>
<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1205</td>
<td>Writing About Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1210</td>
<td>Writing About Current Issues</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1215</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MATH1114</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH1115</td>
<td>Functions/Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>MATH1134</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH1213</td>
<td>Introduction to Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS1401</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>SOC1111</td>
<td>Intro to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC1113</td>
<td>Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

* Take three credits from the specified courses.
### Accounting

- Accounting AAS .................................................. 56
- Accounting AS .................................................. 56
- Accounting Diploma ............................................. 56
- Accounting Clerk Diploma ..................................... 56
- Payroll Specialist Diploma ....................................... 56

### Business

- Business AS ........................................................... 57
- Business Management AAS* .................................. 57
- Business Management AS ....................................... 57
- Business Management Certificate* .......................... 57

### Entrepreneurship

- Business Entrepreneurship AAS ............................. 58
- Business Management/Ownership Diploma ............... 58
- Entrepreneur Essentials Certificate* ....................... 58
- Entrepreneurial Logistics Certificate* ....................... 58
- Entrepreneurship Certificate .................................. 58

### Golf Management

- Golf Management Diploma ..................................... 58

### Health Information Technology and Medical Office Careers

- Health Information Technology AAS ........................ 59
- Health Information Technology Specialist Certificate ... 59
- Medical Administrative Assistant AAS ..................... 60
- Medical Coding and Insurance Diploma .................... 60
- Medical Office Assistant Diploma ............................ 60
- Medical Receptionist Diploma ................................ 60
- Medical Transcription Diploma ............................... 60

### Marketing

- Business: Management, Marketing and Sales AAS ...... 61
- Business: Management, Marketing and Sales Diploma .. 61
- Marketing AAS .......................................................... 61
- Professional Sales Skills Certificate .......................... 61
- Sales and Marketing Diploma ................................... 61

### Office Management

- Administrative Assistant AAS ................................. 62
- Administrative Management Technology AAS ............ 62
- Administrative Support Diploma ............................... 62
- Virtual Office Professional Certificate ......................... 62

*Pending MnSCU approval*
Accounting

Accounting AAS
AAS 72 Credits
D M E

This major provides the knowledge and skills necessary to examine, analyze, interpret and present financial statements, budgets, forecast accounting reports, payroll reports and individual state and federal income tax returns. Computerized accounting concepts are included in this area of study.

Course # | Course Title | Crds
---|---|---
ACCT1101 | Payroll | 1
ACCT1108 | Business Math/Calculators | 3
ACCT1120 | Business Law | 3
ACCT1124 | Spreadsheet Applications | 3
ACCT2201 | Financial Accounting I Lab | 1
ACCT2202 | Financial Accounting II Lab | 1
ACCT2203 | Managerial Accounting Lab | 1
ACCT2211 | Financial Accounting I | 3
ACCT2212 | Financial Accounting II | 3
ACCT2213 | Managerial Accounting | 3
ACCT2216 | QuickBooks | 3
ACCT2217 | Microsoft Dynamics GP | 3
ACCT2255 | Income Tax-Individual | 3
* ACCT2256 | Income Tax-Business | 3
or ACCT2630 | Fund/Nonprofit Accounting | 3
or ACCT2643 | Accounting Internship | 3
or ACCT2800 | Accreditation Council for Accountancy and Taxation Exam Review | 3
ACCT2620 | Intermediate Accounting I | 4
ACCT2622 | Intermediate Accounting II | 4
COMM1120 | Introduction to Public Speaking | 3
CPRM104 | Intro to Computer Tech | 3
ECON2210 | Macroeconomics | 3
ENGL1101 | College Writing | 3

* Take six credits from the specified courses.

Accounting AS 60 Credits
F E

The AS in Accounting is a two-year degree designed for both the student who wants to enter the workforce upon graduation and the student who plans to transfer to a four-year college or university. The program offers a balance of general education courses and courses specific to preparing the student for a career in accounting.

Course # | Course Title | Crds
---|---|---
ACCT1108 | Business Math/Calculators | 3
or BUS1146 | Personal Finance | 3
ACCT2211 | Financial Accounting I | 3
ACCT2212 | Financial Accounting II | 3
ACCT2213 | Managerial Accounting | 3
ACCT2215 | Computerized Accounting Applications | 3
ACCT2255 | Income Tax-Individual | 3
BUS1120 | Spreadsheet and Database Concepts | 3
BUS2150 | Legal Environment of Business | 3
BUS2204 | Principles of Management | 3
BUS2206 | Principles of Marketing | 3
COMM1120 | Introduction to Public Speaking | 3
ECON2210 | Macroeconomics | 3
ECON2222 | Microeconomics | 3
ENGL1101 | College Writing | 3
MATH1114 | College Algebra | 4
PHIL1201 | Ethics | 3
* PSYC1200 | General Psychology | 3
or SOC1111 | Intro to Sociology | 3

* Take three credits from the specified courses.

Accounting Diploma 64 Credits
D M E

This major provides the knowledge and skills necessary to examine, analyze, interpret and present financial statements, budgets, forecast accounting reports, payroll reports and individual state and federal income tax returns. Computerized accounting concepts are included in this area of study.

Course # | Course Title | Crds
---|---|---
ACCT1101 | Payroll | 3
ACCT1108 | Business Math/Calculators | 3
ACCT1124 | Spreadsheet Applications | 3
ACCT2201 | Financial Accounting I Lab | 1
ACCT2202 | Financial Accounting II Lab | 1
ACCT2203 | Managerial Accounting Lab | 1
ACCT2211 | Financial Accounting I | 3
ACCT2212 | Financial Accounting II | 3
ACCT2213 | Managerial Accounting | 3
ACCT2216 | QuickBooks | 3
ACCT2217 | Microsoft Dynamics GP | 3
ACCT2255 | Income Tax-Individual | 3
* ACCT2256 | Income Tax-Business | 3
or ACCT2630 | Fund/Nonprofit Accounting | 3
or ACCT2643 | Accounting Internship | 3
or ACCT2800 | Accreditation Council for Accountancy and Taxation Exam Review | 3
ACCT2620 | Intermediate Accounting I | 4
ACCT2622 | Intermediate Accounting II | 4
COMM1120 | Communication and Effective Human Relations | 3
CPRM104 | Intro to Computer Tech | 3
PDEV1102 | Contemporary Career Search | 3

* Take six credits from the specified courses.

Accounting Clerk Diploma 33 Credits
D M E

This major provides the knowledge and skills necessary to perform routine calculating, journalizing, posting and verifying duties to maintain accounting records, prepare payroll reports and individual state and federal tax returns. Both manual and computerized accounting concepts and applications are included.

Course # | Course Title | Crds
---|---|---
ACCT1101 | Payroll | 3
ACCT1108 | Business Math/Calculators | 3
ACCT1124 | Spreadsheet Applications | 3
ACCT2201 | Financial Accounting I Lab | 1
ACCT2202 | Financial Accounting II Lab | 1
ACCT2211 | Financial Accounting I | 3
ACCT2212 | Financial Accounting II | 3
ACCT2216 | QuickBooks | 3
ACCT2255 | Income Tax-Individual | 3
* ACCT2256 | Income Tax-Business | 3
or ACCT2630 | Fund/Nonprofit Accounting | 3
or ACCT2643 | Accounting Internship | 3
or ACCT2800 | Accreditation Council for Accountancy and Taxation Exam Review | 3
ACCT2620 | Intermediate Accounting I | 4
ACCT2622 | Intermediate Accounting II | 4
COMM1120 | Communication and Effective Human Relations | 3
CPRM104 | Intro to Computer Tech | 3
PDEV1102 | Contemporary Career Search | 3

Payroll Specialist - Pending MnSCU Approval
Diploma 33 Credits
D M E

This major provides the knowledge and skills necessary to perform routine calculating, journalizing, posting and verifying duties to maintain accounting records, prepare payroll reports and returns, and employee records. Both manual and computerized accounting concepts and applications are included.

Course # | Course Title | Crds
---|---|---
ACCT1101 | Payroll | 3
ACCT1108 | Business Math/Calculators | 3
ACCT1124 | Spreadsheet Applications | 3
ACCT2201 | Financial Accounting I Lab | 1
ACCT2202 | Financial Accounting II Lab | 1

* Take three credits from the specified courses.
Business

AS 60 Credits

This is a flexible degree designed for students who want to continue their education or enter the workforce in a business-related career. The degree is 60 credits in length, including 30 semester credits in general education from six of the 10 goal areas of the Minnesota Transfer Curriculum, and 30 technical credits. Students completing this degree may further advance their education by obtaining a degree through articulation agreements with baccalaureate degree-granting institutions. Emphasis is on contemporary business practices through coursework in management, marketing, economics, accounting, technology, and communications.

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<td>ACCT2212</td>
<td>Financial Accounting II</td>
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<tr>
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<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS1120</td>
<td>Spreadsheet and Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>BUS2204</td>
<td>Principles of Management</td>
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<tr>
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<tr>
<td>BUS2220</td>
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</tr>
<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
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<td>ECON2210</td>
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<td>ECON2221</td>
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<tr>
<td>ENGL1205</td>
<td>Writing About Literature</td>
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<tr>
<td>ENGL1210</td>
<td>Writing About Current Issues</td>
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<tr>
<td>MATH1114</td>
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<tr>
<td>MATH1213</td>
<td>Introduction to Statistics</td>
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<tr>
<td>PSYC1200</td>
<td>General Psychology</td>
<td>3</td>
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</table>

*Take three credits from the specified courses.*

Business Management - Pending MnSCU Approval

AAS 60 Credits

The AAS in Business Management is a two-year degree designed to prepare students for a career in business at the junior level of management. The degree is designated for the student who wishes to enter the workforce upon graduation. The program offers some general education courses, but is concentrated on courses specific to preparing the student for a career in business management.

Course Listing:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRES1130</td>
<td>Benefits Administration</td>
<td>3</td>
</tr>
<tr>
<td>CPTR1104</td>
<td>Intro to Computer Tech</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2216</td>
<td>QuickBooks</td>
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<td>ACCT2211</td>
<td>Financial Accounting I</td>
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</tr>
<tr>
<td>ACCT2212</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2213</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2215</td>
<td>Computerized Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2255</td>
<td>Income Tax-Individual</td>
<td>3</td>
</tr>
<tr>
<td>BUS1120</td>
<td>Spreadsheet and Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>BUS1143</td>
<td>Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BUS1146</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>BUS2204</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS2206</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS2220</td>
<td>Mgmt Information Sys</td>
<td>3</td>
</tr>
<tr>
<td>BUS2221</td>
<td>Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS2222</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>BUS2223</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS2224</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS2225</td>
<td>Income Tax-Individual</td>
<td>3</td>
</tr>
<tr>
<td>BUS2250</td>
<td>Legal Environment of Business</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Management

AS 60 Credits

F

The AS in Business Management is a two-year degree designed to prepare students pursuing a career in business at the junior level of management. The degree is designed to suit the student who wishes to enter the workforce upon graduation, as well as the student who plans to transfer to a four-year college or university. The program offers a balance of general education courses and courses specific to preparing the student for a career in business management.

Course Listing:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT1108</td>
<td>Business Math/Calculators</td>
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<tr>
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<td>ACCT2212</td>
<td>Financial Accounting II</td>
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</tr>
<tr>
<td>ACCT2213</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2215</td>
<td>Computerized Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2255</td>
<td>Income Tax-Individual</td>
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</tr>
<tr>
<td>BUS1120</td>
<td>Spreadsheet and Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>BUS1143</td>
<td>Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BUS1146</td>
<td>Personal Finance</td>
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</tr>
<tr>
<td>BUS2204</td>
<td>Principles of Management</td>
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<td>BUS2206</td>
<td>Principles of Marketing</td>
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<tr>
<td>BUS2220</td>
<td>Mgmt Information Sys</td>
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</tr>
<tr>
<td>BUS2221</td>
<td>Financial Accounting II</td>
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<tr>
<td>BUS2223</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS2224</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS2225</td>
<td>Income Tax-Individual</td>
<td>3</td>
</tr>
<tr>
<td>BUS2250</td>
<td>Legal Environment of Business</td>
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</tbody>
</table>

Business Management Certificate 30 Credits

F

This is a one-year certificate in Business Management designed for the student who wants to prepare for an introductory level position in the business world. This will give students the opportunity to explore the fields of business through select courses.

Course Listing:

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT1108</td>
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</tr>
<tr>
<td>ACCT2211</td>
<td>Financial Accounting I</td>
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</tr>
<tr>
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<td>Financial Accounting II</td>
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</tr>
<tr>
<td>ACCT2215</td>
<td>Computerized Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>ACCT2255</td>
<td>Income Tax-Individual</td>
<td>3</td>
</tr>
<tr>
<td>BUS1120</td>
<td>Spreadsheet &amp; Database Concepts</td>
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</tr>
<tr>
<td>BUS1143</td>
<td>Office Procedures</td>
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<td>BUS1146</td>
<td>Personal Finance</td>
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</tr>
<tr>
<td>HRES1130</td>
<td>Benefits Administration</td>
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www.minnesota.edu

Minnesota State Community and Technical College
Course Catalog 2013-2014
Entrepreneurship

Business Entrepreneurship
AAS 60 Credits

Entrepreneurs create their own path to success and work to make their dreams a reality. This program teaches the skills and behaviors that contribute to personal and business success. It also prepares students to assess new enterprise opportunities, obtain financial resources, prepare a business plan and market a venture for success. Students will gain the confidence and skills to launch a new venture in an area of expertise, grow an existing business or pursue an advanced degree.

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Crds</th>
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<tbody>
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<td>ADMS116</td>
<td>Business Communications I</td>
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<td>BUS2204</td>
<td>Principles of Management</td>
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<td>BUS2206</td>
<td>Principles of Marketing</td>
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<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
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<td>ENGL1101</td>
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<td>ENTR100</td>
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<tr>
<td>ENTR400</td>
<td>Opportunity Analysis</td>
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<tr>
<td>ENTR2200</td>
<td>Entrepreneurial Field Studies</td>
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<tr>
<td>ENTR2220</td>
<td>Business Ethics/Professionalism</td>
<td>3</td>
</tr>
<tr>
<td>ENTR2222</td>
<td>Business Plan Development</td>
<td>3</td>
</tr>
<tr>
<td>MKTG1110</td>
<td>Customer Service</td>
<td>3</td>
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</tbody>
</table>

Business Management/Ownership
Diploma 33 Credits

The primary purpose of this program is to prepare men and women for management or ownership of a small business. The program will not only prepare students for business management, but also enable them to better manage their personal affairs. It will especially help individuals who may have some of the skills and competencies needed, but lack the organization and understanding of business management that is necessary to be successful. Upon completing the classroom work, students will be assisted in finding jobs with business firms offering employment suited to their individual career objectives or in starting their own businesses. This program requires a genuine interest in people, a strong desire to be your own boss and a willingness to expend above-average time and energy toward goal accomplishment.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
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<tbody>
<tr>
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<td>BUS2204</td>
<td>Principles of Management</td>
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<td>Principles of Marketing</td>
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<td>ENTR1100</td>
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<td>ENTR400</td>
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<td>Entrepreneurial Field Studies</td>
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<tr>
<td>MKTG1110</td>
<td>Customer Service</td>
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Entrepreneur Essentials - Pending MnSCU Approval
Certificate 9 Credits

Entrepreneurs create their own path to success and work to make their dreams a reality. This program teaches the students the necessary skills and behaviors that contribute to launching and managing a new business with a strong focus on business ethics. Students will learn to assess new enterprise opportunities, enhance management skills and prepare a business plan.

<table>
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<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
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<tr>
<td>ENTR1100</td>
<td>Introduction to Entrepreneurship</td>
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</tr>
<tr>
<td>ENTR2220</td>
<td>Business Ethics/Professionalism</td>
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</tbody>
</table>

Entrepreneurial Logistics - Pending MnSCU Approval
Certificate 9 Credits

Entrepreneurs create their own paths to success and work to make their dreams a reality. This certificate teaches the students the necessary skills and behaviors that contribute to launching a new business. Students will learn to assess new venture opportunities, obtain financial resources, understand the importance of customer service, and prepare a business plan.

<table>
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<td>ENTR2222</td>
<td>Business Plan Development</td>
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Entrepreneurship
Certificate 18 Credits

Entrepreneurs create their own paths to success and work to make their dreams a reality. This certificate teaches the students the necessary skills and behaviors that contribute to launching a new business. Students will learn to assess new enterprise opportunities, obtain financial resources, prepare a business plan and market a venture for success.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
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<tbody>
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<td>BUS2206</td>
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<td>ENTR1100</td>
<td>Intro to Computer Tech</td>
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</tr>
<tr>
<td>ENTR2222</td>
<td>Business Plan Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Golf Management

Golf Management
Diploma 60 Credits

The diploma in Golf Management provides students with skills necessary for employment or advancement as entry level golf course employees and prepares students for a variety of positions in the golf industry. In this program, students are prepared to manage golf course operations, oversee the maintenance of golf facilities and equipment, as well as promote the play of golf as a lifelong pastime, skill and social outlet. Students earning the certificate may also choose to continue their study toward an associate, baccalaureate or advanced degree.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>ACCT1012</td>
<td>Principles of Bookkeeping</td>
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<td>ACCT2211</td>
<td>Financial Accounting I</td>
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</tr>
<tr>
<td>ACCT1108</td>
<td>Business Math/Calculators</td>
<td>3</td>
</tr>
<tr>
<td>BIOL1107</td>
<td>Environmental Science Issues</td>
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</tr>
<tr>
<td>BUS2206</td>
<td>Principles of Marketing</td>
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<tr>
<td>BUS2210</td>
<td>Legal Environment of Business</td>
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<td>BUS2204</td>
<td>Principles of Management</td>
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<tr>
<td>ENTR1100</td>
<td>Intro to Public Speaking</td>
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<td>ENGL1101</td>
<td>College Writing</td>
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<td>GOLF1100</td>
<td>Rules of Golf</td>
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<td>GOLF1101</td>
<td>Golf Club Repair</td>
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<td>GOLF1102</td>
<td>Tournament Operations</td>
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<td>GOLF1200</td>
<td>Introduction to Golf Fundamentals and Methods</td>
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<td>GOLF1300</td>
<td>Pro Shop Operations and Management</td>
<td>3</td>
</tr>
<tr>
<td>GOLF2200</td>
<td>Turf Management</td>
<td>3</td>
</tr>
<tr>
<td>GOLF2402</td>
<td>Golf Internship</td>
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<tr>
<td>GOLF2500</td>
<td>Fundamentals of Golf Instruction</td>
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<tr>
<td>LAND1102</td>
<td>Intro to Landscape/Horticulture</td>
<td>3</td>
</tr>
</tbody>
</table>

* Take three credits from the specified courses.
** Take six credits from the specified courses.
Human Resources

Human Resources
AAS 60 Credits
M E

Human Resources programs prepare students to provide support to companies and individual employees in the area of human resources. Associate of Applied Science graduates may assume duties in the following areas: communication with employees, employee data record-keeping, policies and administration, employee and labor relations, employee recruitment, selection and employment, training and development, wage and salary and benefit administration.

Health Information Technology and Medical Office Careers

Health Information Technology
AAS 64 Credits
E

The health information technician is an important member of the health care team who secures, analyzes, integrates and manages health information for patient care, reimbursement, planning, marketing, legal aspects and research. This information steers the health care industry. The program is designed to combine general education courses with the technical courses for a well-rounded and functional education. To further the student’s classroom coursework with practical hands-on experience, time is spent in health care facilities. Upon successful completion of the Health Information Technology program, students receive the eligibility to write the American Health Information Management Association’s Registered Health Information Technician (RHIT) credentialing exam.

Human Resources
AS 60 Credits
M E

Human resources programs prepare students to provide support to companies and to individual employees in the area of human resources. Associate of Science graduates may assume duties in the following areas: communication with employees, employee data record keeping, policies and administration, employer and labor relations, employee recruitment, selection and employment, training and development, wage and salary and benefit administration. The AS program is specifically designed for more efficient course transfer to partner universities for students wishing to continue with more efficient education.

Course # | Course Title | Crds
--- | --- | ---
ADMS1110 | Technical Electives | 9
COMM1120 | Introduction to Computer Tech | 3
ENGL1101 | College Writing | 3
HRES1122 | Human Resource Management | 3
HRES1126 | Employee Processes | 3
HRES1134 | Training and Development | 3
HRES2204 | Policy Administration | 3
HRES2212 | Wage/Salary Administration | 3
HRES2224 | Employee/Labor Relations | 3
HRES2254 | Human Resource Systems and Portfolio Evaluation | 3
PHIL1201 | Ethics | 3
PHIL1200 | Applied and Professional Ethics | 3
SOC1111 | Intro to Sociology | 3

* Take three credits from the specified courses.

Course # | Course Title | Crds
--- | --- | ---
ADMS1110 | Technical Electives | 9
COMM1120 | Introduction to Computer Tech | 3
ENGL1101 | College Writing | 3
HRES1122 | Human Resource Management | 3
HRES1126 | Employee Processes | 3
HRES1134 | Training and Development | 3
HRES2204 | Policy Administration | 3
HRES2212 | Wage/Salary Administration | 3
HRES2224 | Employee/Labor Relations | 3
HRES2254 | Human Resource Systems and Portfolio Evaluation | 3
PHIL1201 | Ethics | 3
PHIL1200 | Applied and Professional Ethics | 3
SOC1111 | Intro to Sociology | 3

* Take three credits from the specified courses.
Medical Administrative Assistant
AAS 60 Credits
M W E

The Medical Administrative Assistant AAS program prepares students to work in a variety of medical settings, handling all types of administrative duties for private practice, hospitals and clinics. This program offers a broad foundation of knowledge and skills, expanding the traditional role of the medical secretary through the addition of liberal arts classes as preparation for leadership roles. Graduates of this program are highly-trained office specialists who are prepared to accept responsibility for the coordination of medical office functions and patient billing processes. Successful medical administrative assistants have excellent communication skills and exhibit a high degree of professionalism. All courses in the program incorporate the skills needed for employment in the medical administrative assistant profession.

Medical Coding and Insurance
Diploma 50 Credits
M W E

The Medical Coding and Insurance diploma program prepares students in many of the procedures associated with billing for medical services. Students receive training in medical billing processes including patient account management, diagnosis and procedure coding and medical insurance claim completion and processing. The program focuses on coding and insurance procedures for the medical office. Medical coding involves using nationally recognized coding systems to classify procedures and diagnoses related to medical treatment. The codes provide information that is used in insurance claims processing. Many different types of insurance programs are handled in the medical office. Students are trained in claims processes of many insurance programs/plans such as Medicare, Medicaid, Tricare, profit and nonprofit third-party payers, workers compensation packages and disability coverage. Courses in this program incorporate the skills needed for employment in the coding and insurance departments of medical facilities. Graduates of the program are eligible to take several of the national certification exams. The American Academy of Professional Coders (AAPC) offers the Certified Professional Coder (CPC), Certified Professional Coder-Hospital (CPC-H), Certified Professional Coder - Payor (CPC-P), and Certified Professional Biller (CPCB).

Medical Office Assistant
Diploma 44 Credits
M W E

Medical office assistants are highly-trained office specialists who participate in the coordination of medical office functions including patient appointment scheduling, telephone communications, medical record maintenance, medical transcription and patient billing processes. Successful medical office assistants have excellent communication skills and exhibit a high degree of professionalism. All courses in the program incorporate the skills needed for employment in the medical office assistant profession.

Medical Receptionist
Diploma 34 Credits
M W E

This program prepares individuals to work in a medical office setting. Medical receptionists greet patients, arrange appointments and provide informational services to patients. They possess excellent communication and technology skills. This position requires an excellent command of medical terminology, anatomy and physiology, as well as expertise in medical office procedures.

Medical Transcription
Diploma 40 Credits
M W E

A medical transcriptionist is a medical language specialist who prepares a variety of medical reports and documents for inclusion in patient medical records. Medical transcriptionists must possess a vast knowledge of the medical field and its associated terminology, as well as a high degree of computer and written communication skills. All courses in the program incorporate the skills needed for employment as a medical transcriptionist and are derived from the National Marketing Accreditation Board Model Curriculum competencies. Graduates of this program will be eligible to write the national exam for registered medical transcriptionists.
Marketing

Business: Management, Marketing and Sales
AAS 70 Credits

M

The Business: Management, Marketing and Sales AAS major includes business courses as well as general education courses. This degree is designed to provide students with the skills necessary for success in a variety of careers in the sales, marketing and management fields. Curriculum includes instruction in areas such as sales, marketing research, customer service and small business planning. Emphasis is on developing skills in management decision-making, communication, problem solving and technology.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
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<tbody>
<tr>
<td>ACCT1108</td>
<td>Business Math/Calculators</td>
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</tr>
<tr>
<td>ACCT1120</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS2204</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS2206</td>
<td>Principles of Marketing</td>
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</tr>
<tr>
<td>COMMM111</td>
<td>Introduction to Public Speaking</td>
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<tr>
<td>ECON1150</td>
<td>Essentials of Economics</td>
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<tr>
<td>ENGL1100</td>
<td>College Writing</td>
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<tr>
<td>MKTG1106</td>
<td>Professional Selling</td>
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<tr>
<td>MKTG1110</td>
<td>Customer Service</td>
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<tr>
<td>MKTG1116</td>
<td>Advertising and Promotion</td>
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</tr>
<tr>
<td>MKTG2218</td>
<td>Advanced Professional Selling</td>
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</tr>
<tr>
<td>MKTG2219</td>
<td>Retail Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG2222</td>
<td>Human Resource Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>MKTG2234</td>
<td>Computer Marketing Applications</td>
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<td>MKTG2236</td>
<td>Small Business Mgmt</td>
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<tr>
<td>MKTG2404</td>
<td>Management Strategy</td>
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</tbody>
</table>

Business: Management, Marketing and Sales
Diploma 70 Credits

M

This diploma places an emphasis on business courses. The program is designed to prepare students to succeed in their careers and to provide students with the essential skills necessary in the sales, marketing and management fields. Curriculum includes instruction in areas such as sales, marketing research, customer service and small business planning. Emphasis is on developing skills in management decision-making, communication, technology and problem-solving. Students have the opportunity to apply concepts they have learned.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
</tr>
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<tbody>
<tr>
<td>ACCT1102</td>
<td>Principles of Bookkeeping</td>
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<td>ACCT1108</td>
<td>Business Math/Calculators</td>
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</tr>
<tr>
<td>ACCT1120</td>
<td>Business Law</td>
<td>3</td>
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<td>BUS2204</td>
<td>Principles of Management</td>
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<td>ECON1150</td>
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<td>Customer Service</td>
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<td>Advertising and Promotion</td>
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</table>

Marketing
AAS 68 Credits

D

The Marketing AAS provides the practical knowledge and skills related to planning, managing and performing sales and marketing activities to meet organizational objectives. The major includes marketing, social marketing, management, sales, marketing research and other related business courses as well as general education courses. This program is designed to prepare students for a wide variety of sales and marketing careers. Emphasis is placed on developing the skills to apply marketing knowledge, management and leadership skills, communication and interpersonal skills, problem solving and technology skills.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
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<td>MKTG1211</td>
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<td>BUS1141</td>
<td>Introduction to Business</td>
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<td>BUS2204</td>
<td>Principles of Management</td>
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<td>COMMM112</td>
<td>Introduction to Public Speaking</td>
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<td>Intro to Computer Tech</td>
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<td>MKTG1116</td>
<td>Advertising and Promotion</td>
<td>3</td>
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<td>MKTG2200</td>
<td>Introduction to Social Media</td>
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<td>MKTG2214</td>
<td>Search Engine Optimization</td>
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<td>MKTG2290</td>
<td>Supervised Occup Exp I</td>
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<td>PSYC1200</td>
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<td>SOC1111</td>
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<table>
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<tr>
<th>Course #</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ACCT1108</td>
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<td>CPT1104</td>
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<td>MKTG2218</td>
<td>Advanced Professional Selling</td>
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<td>MKTG2234</td>
<td>Computer Marketing Applications</td>
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<td>MKTG2236</td>
<td>Small Business Mgmt</td>
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<tr>
<td>MKTG2400</td>
<td>Marketing Management</td>
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</tbody>
</table>

Professional Sales Skills - Pending MnSCU Approval
Certificate 9 Credits
D E CT

This certificate prepares students to enhance their selling, customer service and speaking skills. It is also designed to provide new sales professionals with the foundational skills for success. This certificate includes courses in public speaking, selling strategies and customer service.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
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<tbody>
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<td>ACCT1120</td>
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<td>Business Communications I</td>
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<td>ADMT2222</td>
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<td>PSYC1200</td>
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<tr>
<td>SOC1111</td>
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</tbody>
</table>

Sales and Marketing
Diploma 33 Credits
D

This program prepares graduates to enter sales and marketing careers. Positions are available in marketing, merchandising, selling, retailing and service businesses. This major includes courses in computer technology, selling strategies, customer service, tele-marketing and retailing and marketing concepts.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
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<tbody>
<tr>
<td>ACCT1108</td>
<td>Business Math/Calculators</td>
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<tr>
<td>MKTG2200</td>
<td>Introduction to Social Media</td>
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</tr>
<tr>
<td>MKTG2218</td>
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<td>Small Business Mgmt</td>
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</tr>
<tr>
<td>MKTG2400</td>
<td>Marketing Management</td>
<td>4</td>
</tr>
</tbody>
</table>

* Take three credits from the specified courses.
Office Management

Administrative Assistant

AAS 60 Credits

M

The AAS in Administrative Assistant prepares the student for employment in a business office setting. Administrative assistant personnel are needed in virtually every type of business and are essential in helping offices run efficiently and efficiently. The graduate will have achieved a broad base of both specialized skills and general education knowledge, which will contribute to growth in an office environment. The general education courses will also benefit students who may wish to transfer to another program or institution to advance their education. Throughout this program, students will develop the office skills, knowledge, and attitudes required by today's employers. Students will develop strong verbal, listening and writing skills; interpersonal skills and the ability to keep confidences; technology skills using and integrating a variety of software applications; organizational, time management, team building, customer service and soft skills and critical thinking and problem-solving skills to create a positive office environment.

Administrative Management Technology

AAS 60 Credits

D

This program is designed to teach students strong administrative, computer and interpersonal skills, promoting greater efficiency in the office. The administrative professional industry has evolved to require a wide range of technical and interpersonal skills which provide employment opportunities ranging from front-office support and customer service representatives to event planners, project managers and other administrative professional-related employment. In addition, graduates may continue their study in baccalaureate degree programs in careers such as computers, operations management or business administration. This degree is also designed for students who wish to enhance their computer skills in today's business world via international industry certifications and to develop strong verbal, listening and writing skills; interpersonal skills and the ability to keep confidences; technology skills using and integrating a variety of software applications; organizational, time management, team building, customer service and soft skills and critical thinking and problem-solving skills to create a positive office environment.

Course # | Course Title | Crds
--- | --- | ---
ACCT1102 | Principles of Bookkeeping | 3
ADMS1112 | Desktop Publishing | 3
ADMS1116 | Business Communications I | 3
ADMS1120 | Office Procedures | 3
ADMS1128 | Records/Database Management | 3
ADMS1130 | Office Software Applications | 3
ADMS1200 | Keyboarding III/Keyboarding II | 3
ADMS1300 | Word Processing/Advanced Word Processing | 4
ADMS2124 | Computer Technology Information | 3
ADMS2212 | Integrated Office Software Applications | 3
ADMS2216 | Business Communications II | 3
COMM1120 | Introduction to Public Speaking | 3
ENGL1101 | College Writing | 3

*Take three credits from the specified courses.

Virtual Office Professional Certificate 29 Credits

D E

The Virtual Office Professional (VOP) is much like a project manager, office administrator and personal assistant wrapped into one independent proprietor. The VOP works out of his or her own fully-equipped home office. VOPs offer a variety of services to clients depending on their experience, training and market conditions. These services include word processing, presentation and publication development, Internet research, data collection and input and spreadsheet preparation. This certificate is designed to supplement existing work experience or education to help the student become a home-based independent contractor.

Course # | Course Title | Crds
--- | --- | ---
ACCT1124 | Spreadsheet Applications | 3
ADMS1110 | Word Processing | 3
ADMT2236 | Administrative Project Management | 3
ADMT2300 | Office Graphics and Presentations | 3
ADMT2600 | Trends in Office Technology | 3
BMGT1112 | Business Plan Development | 3
CPTTR104 | Intro to Computer Tech | 3
ENTR1100 | Introduction to Entrepreneurship | 3

*Take three credits from the specified courses.
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE

Computer

Computer Science

Cisco Networking Certificate ..................................................66
Computer Network Security AAS .............................................66
Computer Network Security Certificate ....................................66
Computer Programming AAS ....................................................66
Health Information Technology AAS
See Health Information and Medical Office Careers ...............59
Health Information - Technology Specialist Certificate
See Health Information and Medical Office Careers ...............59
IT Systems Support AAS .........................................................66
IT Systems Support Diploma ....................................................67
IT Systems Support Certificate ................................................67
Information Technology AAS ..................................................67
Information Technology AS .....................................................67
Information Technology Diploma .............................................67
Management Information Systems AS .................................67
Network Technology Administration AAS ..............................68
Network Technology Administration Diploma ..........................68
Voice and Video Over Internet Protocol Certificate ..............68

Computer Graphics and Visualization Careers

Digital Photography and Imaging Certificate .......................68
Graphic Design Technology AAS ............................................68
Graphic Design Technology Certificate ..................................69
Web Development AAS .........................................................69
Web Development Diploma ....................................................69
Web Development Certificate ................................................69
Cisco Networking
Certificate 12 Credits
D W E

This 12-credit certificate will prepare students to take the Cisco Certified Network Associate (CCNA) certification and also the CompTIA Network+ certification. The coursework includes Cisco semesters 1-4. Skill development covers LAN/WAN networking technology and concepts, networking math, routing, diameter routing and cabling and security concepts. Students will be able to take the Cisco CCNA and CompTIA Network+ certification exams offered through VUE or Prometric testing centers.

Computer Networking Security
AAS 67 Credits
D

This program will prepare students to enter the high-demand field of information technology networking and security. With the increase of viruses, spyware/adware and hacking incidents, companies need professionals skilled in protecting data and equipment from internal and external security threats. Students gain hands-on experience in Local Area Network and Wide Area Network technologies utilizing current hardware and software. Emphasis is on identifying and implementing appropriate security policies and procedures that meet the unique and dynamic needs of information systems in business. Students will use system virtualization products supporting green technology. Because new information security threats continue to escalate demand for workers in this specialized field, job growth is expected to climb at a faster-than-average rate. The computer networking and security skills students acquire in this program help graduates obtain a rewarding career in this highly challenging field.

Computer Networking Security
Certificate 12 Credits
D E

This major provides the skills to support and maintain computer network systems in a business environment. Computer skill development covers the hardware and software systems of current computer technology. Networking skills include switching, routing, server operating system and directory services and security. Application software skills include software selection, customization, training and support. Many classes are built around specific industry certifications. Students are encouraged to complete the requirements for vendor certification.

Computer Programming
AAS 70 Credits
M E

This program provides the programming skills needed in computer application development, database management, computer systems and data communications. Students learn to design, write, code, document and implement computer programs for various computer platforms. They learn at least one operating system, one command-level language, one database management system and other high-level programming languages. The program prepares students to design and develop computer software systems as well as design information management systems. It includes the study of languages, software design, information flow and processing. Students study the design of mathematical and simulation models and large-scale programs used for processing and retrieving information.

IT Systems Support
AAS 66 Credits
D E

IT systems support personnel interact with individuals in business, industry, education and government. They provide technical solutions to customer-critical problems related to software applications and relevant hardware. An information technology systems support person may also provide network software and hardware support. This is accomplished through problem analysis using phone service support, direct client service and a variety of electronic means to achieve high-level customer satisfaction and to accomplish the goals of the organization. An information technology systems support person may develop and create technical and procedural documentation and other training materials. They may also plan and conduct actual end-user training sessions. This program prepares students to accomplish these goals through knowledge of installation and maintenance for computer hardware and software, network hardware and software and various peripherals. Students are also trained in customer service and business skills and provided with many opportunities to strengthen their troubleshooting skills. Students in the program have a wide range of employment opportunities including self-employment and employment in the private, education and government sectors.
IT Systems Support
Diploma 34 Credits

IT systems support personnel interact with individuals in business, industry, education and government by providing technical solutions to customer-critical problems related to software applications and relevant hardware. This is accomplished through problem analysis using phone service support, direct client service and a variety of electronic means to achieve high-level customer satisfaction and to accomplish the goals of the organization.

Information Technology
AAS 60 Credits

This program prepares students to work in information technology. Students learn to select appropriate systems, create necessary solutions, apply existing systems, integrate a variety of systems and administer systems to help people. This career program prepares students to fulfill a variety of roles within the information technology field.

Information Technology
AS 60 Credits

The Information Technology AS degree prepares students to continue to work toward a bachelor’s degree or enter the workforce. Students learn to use various hardware and software systems to solve problems for people and organizations. Students work with networking technologies, applications, Web technologies and database technologies. Students focus on the selection, application and administration of information technologies. The degree minimizes the number of credits required at selected institutions to complete a bachelor’s degree. The degree is an ideal mix of practical experience and general education for a field that is constantly evolving.

Management Information Systems
AS 60 Credits

The AS in Management Information Systems is a two-year degree designed to prepare students pursuing a career in business in the specialty of computer information management systems. The degree is designed to suit the student who wishes to enter the workforce upon graduation as well as the student who plans to transfer to a four-year college or university. The program offers a balance of general education courses and courses specific to preparing the student for a career in accounting/business.
* Take three credits from the specified courses.

Network Technology Administration
Diploma 33 Credits

This major provides entry-level skills to support and maintain computer network systems in a business environment. Computer skill development covers the hardware and software systems of current computer technology. Networking skills include an introduction to network components, server and client operating systems, and computer security principles and practice. Students use Microsoft Office products including Microsoft Access Database. This program is an excellent opportunity to gain employment or improve skills in the areas of administrative support, office management, telecommunications technician, technology specialist, help desk support and other careers.

<table>
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<td>CPTR1106</td>
<td>Microcomputer Databases</td>
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<td>CPTR1108</td>
<td>CISCO 1</td>
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<tr>
<td>CPTR1118</td>
<td>CISCO 2</td>
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<tr>
<td>CPTR1125</td>
<td>IT Essentials</td>
<td>3</td>
</tr>
<tr>
<td>CPTR1148</td>
<td>Microcomputer Operating System</td>
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<tr>
<td>CPTR2236</td>
<td>Network Security</td>
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<tr>
<td>CPTR2272</td>
<td>Network Operating Systems</td>
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</tr>
<tr>
<td>SOC1111</td>
<td>Intro to Sociology</td>
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</tbody>
</table>

Technical Electives 6

Network Technology Administration
AAS 66 Credits

This major provides the skills to support and maintain computer network systems in a business environment. Computer skill development covers the hardware and software systems of current computer technology. Networking skills include switching, routing, server operating systems, directory services, and security. Application software skills include software selection, customizing, training, and support. Many classes are built around specific industry certifications. Students are encouraged to complete the requirements for vendor certification.

<table>
<thead>
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<td>Microcomputer Databases</td>
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<td>CPTR1108</td>
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<td>CPTR1110</td>
<td>Visual Basic Program I</td>
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<td>CPTR1118</td>
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<td>CPTR1125</td>
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<tr>
<td>PHIL1201</td>
<td>Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

* Take three credits from the specified courses.

Voice and Video Over Internet Protocol
Certificate 15 Credits

This certificate includes a series of courses specifically chosen to provide training for telecommunications or Computer Networking students or industry professionals in Voice over Internet Protocol and Video over Internet Protocol. The student will learn to configure, test, install, analyze traffic, troubleshoot and maintain Voice over Internet Protocol, Video over Internet Protocol and converged networks. After completion of the certificate, students can enter into a variety of cutting-edge fields in network communication.

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Crds</th>
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<tbody>
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<td>Voice, Video and Data Convergence</td>
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<td>CVNP2212</td>
<td>Voice Over IP and IP Telephony</td>
<td>4</td>
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<tr>
<td>CVNP2220</td>
<td>Video Over Internet Protocol</td>
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<tr>
<td>CVNP2222</td>
<td>Voice Video Over IP Systems Project</td>
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</tbody>
</table>

Computer Graphics and Visualization Careers

Digital Photography and Imaging
Certificate 18 Credits

This program is intended for students with a strong interest in photography and image manipulation. Successful students will have a basic knowledge of photography and must demonstrate an understanding of imaging fundamentals. They will build a strong portfolio of photographic and illustrated images for a wide range of practical business applications and artistic and technical skills. Students will work primarily in the digital realm of photography and imaging.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
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<tbody>
<tr>
<td>CPTR1102</td>
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<td>GDC1126</td>
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<td>GDC1246</td>
<td>Advanced Photography and Imaging</td>
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</table>

Graphic Design Technology
AAS 60 Credits

Graphic design technology is a highly competitive and rewarding career field for those with a talent and/or interest in the graphic arts. Graphic design technology does not focus on the fine arts of painting and art history, but on the integration of technology with graphic design to create communication materials (stationery, brochures, annual reports, newsletter layout, etc.) for print production. Within two years of training, individuals develop creatively and technically as they learn skills in photography, illustration, design and pre-press production. Students become task-oriented by learning to meet deadlines, problem-solve and work efficiently. Our graduates are expected to be self-motivated and apply the skills they learn in the classroom outside of instruction time to strengthen their abilities. The Graphic Design Technology program prepares students for entry-level positions in the graphic design technology industry.

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tr>
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<td>College Writing</td>
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<td>Macintosh Production Processes</td>
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<td>Design and Layout I</td>
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<tr>
<td>GDC1115</td>
<td>Design and Layout II</td>
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<td>Digital Photography</td>
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<td>GDC1144</td>
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<tr>
<td>GDC1150</td>
<td>Process Printing Theory</td>
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<tr>
<td>GDC1203</td>
<td>Electronic Image Manipulation</td>
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</tr>
<tr>
<td>GDC2212</td>
<td>Design and Layout III</td>
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</tr>
<tr>
<td>GDC2214</td>
<td>Integrated Graphic Design</td>
<td>3</td>
</tr>
</tbody>
</table>

* or

Register Today!
**Web Development**

**Certificate 30 Credits**

The Web Development Certificate provides students with the opportunity to use both creative and technical skills. Using current best practices, students will be prepared to create and manage customer-friendly interactive websites for individuals, small businesses and large corporations.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tbody>
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<td>INTD1113</td>
<td>Dreamweaver</td>
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<td>INTD1124</td>
<td>Cascading Style Sheets</td>
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<tr>
<td>INTD2213</td>
<td>Flash</td>
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</table>

* Take three credits from the specified courses.

**Program Profiles**

**Graphic Design Technology**

**Certificate 30 Credits**

Graphic design technology is a highly competitive and rewarding career for those with a talent and/or interest in the graphic arts. Graphic design technology does not focus on the fine arts of painting and art history, but on the integration of technology with graphic design to train students to create communication materials (stationery, brochures, annual reports, newspaper layout, etc.) for print production. Within two years of training, individuals develop creatively and technically as they learn skills in photography, illustration, design and pre-press production. Students become task-oriented by learning to meet deadlines, problem-solve and work efficiently. Our graduates are expected to be self-motivated and apply the skills they learn in the classroom outside of instruction time to strengthen their abilities. The Graphic Design Technology program prepares students for entry-level positions in the graphic design technology industry. Students work on their own Macintosh laptops to complete coursework, so there is never a need to wait for an available computer. Owning individual laptops also allows each student to be mobile and work from anywhere at any time. Students begin with foundation-level work that includes learning about Macintosh technology, basic drawing, print process theories, technical computer illustration and basic design theories. They progress to higher levels of design theory and application, advanced illustration, photo manipulation using image editing software and page layout skills in a page layout computer application. Class curriculum consists of lectures, demonstrations, hands-on application, industry tours and lab work. Students are guided in how to behave and work as a professional in our industry. Instructors teach from real-world experience and as a result students are prepared to produce industry-level design work that meets technical criteria for print production, as well as integrate professional expectations of meeting deadlines and being organized. The final result of a student’s study is a comprehensive portfolio that showcases the student’s technical and design skills. With the student’s skills and portfolio, the job market is open to receiving him or her as an efficient graphic design technology employee. The Graphic Design certificate is designed as a "fast track" for students with past work experience in the creative industry and for students who have an advanced degree in a similar area of study, both of whom wish to polish existing skills or add to their skill set in the graphics industry.

**Web Development**

**Diploma 62 Credits**

A Web developer facilitates information exchange by coordinating, compiling and converting various media into an Internet standard format to provide accessible information and effective communication for an organization. Graduates of the Web Development program will develop and manage websites on the Internet and corporate intranets. They will be prepared to create and manage customer-friendly interactive websites for individuals, small businesses and large corporations.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>INTD1100</td>
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<td>INTD1124</td>
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<tr>
<td>INTD2213</td>
<td>Flash</td>
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</table>

* Take three credits from the specified courses.

**Technical Electives**

The following courses are open to receiving him or her as an efficient graphic design technology employee. The Graphic Design certificate is designed as a "fast track" for students with past work experience in the creative industry and for students who have an advanced degree in a similar area of study, both of whom wish to polish existing skills or add to their skill set in the graphics industry.

<table>
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<td>INTD1126</td>
<td>Digital Photography</td>
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<td>INTD1134</td>
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<td>INTD2238</td>
<td>Design Studio</td>
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<tr>
<td>INTD2258</td>
<td>Graphic Design Professional Practices</td>
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</table>

Take three credits from the specified courses.
Architecture

Architectural Technology AAS ................................................72

Carpentry

Carpentry AAS ..............................................................................72
Carpentry Diploma .....................................................................72
Carpentry Assisting Certificate ...............................................72

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Civil Engineering Technology AAS ........................................73

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Construction Electricity - Industrial Maintenance Diploma .............74

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HVAC - Heating, Ventilation and Air Conditioning Diploma ............74
Refrigeration and Air Conditioning Diploma ................................74

Plumbing

Plumbing Technology AAS ......................................................75
Plumbing Technology Diploma ................................................75
Architecture

Architectural Technology
AAS 72 Credits

Students completing this program will be prepared to obtain employment with architectural and engineering firms, contractors and a variety of manufacturing and distributing companies related to the construction industry. Computer-aided drafting is an important tool for the construction industry and the design professions and is an important part of the Architectural Technology program. This program teaches students the principles of residential and commercial building technology, as well as the drafting skills to apply them. Students will also be enrolled in general education courses selected to complement their technical education.

<table>
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<td>ARCH2226</td>
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<td>ARCH2232</td>
<td>Civil and Structural Integration</td>
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<td>ARCH2236</td>
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<td>ARCH2244</td>
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<td>ARCH2248</td>
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<td>ARCH2250</td>
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<td>COMM1108</td>
<td>Principles of Estimating</td>
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<td>Building Systems</td>
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</tr>
<tr>
<td>ENGR1134</td>
<td>Office Systems and Equipment</td>
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</table>

Carpentry
AAS 67 Credits

The Carpentry program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework includes a mix of technical education, general studies, theory and hands-on learning experiences. The student in this program progresses from basic skills to those required of a carpenter. General areas of study include building codes, blueprint reading and sketching, estimating, site layout, concrete, framing, interior and exterior finish, cabinet making and installation and decks. The Carpentry AAS program prepares graduates with skills required of a carpenter in a variety of building construction settings common in both rural and metropolitan areas.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<td>BLDG1120</td>
<td>Construction Estimating I</td>
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<tr>
<td>CARP1102</td>
<td>Pin of Framing</td>
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<tr>
<td>CARP1104</td>
<td>Framing I</td>
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<td>CARP1108</td>
<td>Interior Finish I</td>
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<td>Introduction to Cabinet Building</td>
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<td>CARP1112</td>
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<td>CARP2202</td>
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<td>CARP2220</td>
<td>Carpentry Internship</td>
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<tr>
<td>CARP2224</td>
<td>Advanced Cabinets</td>
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</tr>
<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
<td>3</td>
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</tbody>
</table>

Carpentry Assisting
Certificate 29 Credits

The Carpentry Assisting program prepares students with the skills and knowledge for a career in residential carpentry. The program coursework provides a mix of technical education, general studies, theory and hands-on learning experiences. The student in this program progresses from basic skills to those required of a carpenter. General areas of study include building codes, blueprint reading and sketching, estimating, site layout, concrete, framing, interior and exterior finish, cabinet making and installation and decks. The Carpentry certificate program prepares graduates with the skills required of a carpenter in a variety of building construction settings common in both rural and metropolitan areas.

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tr>
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</table>

Carpentry
Diploma 60 Credits

M

The Carpentry program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework includes a mix of technical and general education, theory and hands-on learning experiences. The student in this program progresses from basic skills to those required of a carpenter. General areas of study include building codes, blueprint reading and sketching, estimating, site layout, concrete, framing, interior and exterior finish, cabinet making and installation and decks. The Carpentry diploma program provides graduates with skills required of a carpenter in a variety of building construction settings common in both rural and metropolitan areas.

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<td>CARP2224</td>
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</table>

ENGL1101 | College Writing                                      | 3    |
PHLL1201 | Ethics                                               | 3    |
PSYC1200 | General Psychology                                   | 3    |

Minnesota State Community and Technical College
Course Catalog 2013-2014

1.877.450.3322
Civil Engineering

Civil Engineering Technology
AAS 72 Credits
D
Students completing the Civil Engineering Technology program are prepared for employment in the civil engineering field. Civil engineering technicians plan, design, monitor construction and maintain public or private works systems with the collaboration and direction of engineers. They gather preliminary data, plan, budget, survey, design, prepare construction documents and administer contracts to provide safe and convenient facilities including highways, bridges, airports, structures, water treatment and distribution systems and waste water collection and treatment systems. Opportunities are available with state and county government public works departments, as well as consulting engineering firms. Students will learn graphic communication skills, advanced surveying techniques and a variety of skills related to engineering technologies. Students will also be enrolled in general education classes selected to build a foundation for their technical courses. This AAS degree can prepare students to continue their education in a number of baccalaureate programs at four-year institutions.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<td>Introduction to Civil Engineering Technology</td>
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<td>CIVL1102</td>
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<td>CIVL1119</td>
<td>Survey II: Land Surveys</td>
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<td>Utility Design</td>
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<td>CIVL2338</td>
<td>CADD III: Project Design</td>
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<td>CIVL2340</td>
<td>Survey III: Global Positioning System Technology and Equipment</td>
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<td>CIVL2247</td>
<td>Introduction to Hydrology</td>
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<td>Engineering Graphics</td>
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<tr>
<td>ENGL1134</td>
<td>Office Systems and Equipment</td>
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<tr>
<td>POLS1130</td>
<td>State and Local Government</td>
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</tr>
</tbody>
</table>

*Take three credits from the specified courses.

Construction Management
AAS 72 Credits
M
Construction and construction-related activities comprise the largest segment of our nation’s Gross National Product. The construction industry makes an important contribution to society and represents progress and the future. This AAS program represents a combination of skills in construction, architecture, business and management areas. The skills learned in these areas can enable a graduate to pursue a variety of careers in construction: safety, supervision, management, estimating, inspection or testing.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>* ACCT1012</td>
<td>Principles of Bookkeeping</td>
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<tr>
<td>or ACCT1101</td>
<td>Payroll</td>
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<tr>
<td>or ACCT1200</td>
<td>Business Law</td>
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<tr>
<td>or BLDG1114</td>
<td>Blueprint Reading I.</td>
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<tr>
<td>or BUS2204</td>
<td>Principles of Management</td>
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<tr>
<td>or HRES2224</td>
<td>Employee/Labor Relations</td>
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<td>CADD1102</td>
<td>Fundamentals of CADD</td>
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<td>CONM1102</td>
<td>Site/Building Layout</td>
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</table>

*Take three credits from the specified courses.

Electrical Lineworker

Electrical Lineworker Technology
AAS 72 Credits
W
The Electrical Lineworker program provides trained personnel for the power industry. Coursework provides both theory and practical hands-on experience in all phases of power line construction and maintenance. Coursework includes electrical math, national electrical safety codes, construction of overhead and underground distribution systems, conductor applications, over-voltage and over-current protection, grounding and pole grounding. The 90-acre training field located near the campus provides a site for hands-on experience in pole setting. The successful graduate is eligible for employment in rural electric and municipal utilities or with private contractors.

<table>
<thead>
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<td>Introduction to Electric Circuit Theory</td>
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<tr>
<td>ELWT1102</td>
<td>Electrical Line Worker Theory</td>
<td>4</td>
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<tr>
<td>ELWT1104</td>
<td>Electrical Structure Installation</td>
<td>5</td>
</tr>
<tr>
<td>ELWT1106</td>
<td>Climbing Electrical Structure</td>
<td>4</td>
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<tr>
<td>ELWT1108</td>
<td>Construction of Overhead Structures</td>
<td>3</td>
</tr>
<tr>
<td>ELWT1110</td>
<td>Line Worker Theory</td>
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<tr>
<td>ELWT1112</td>
<td>Transformers</td>
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<tr>
<td>ELWT1114</td>
<td>Line Construction Reports</td>
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</tr>
<tr>
<td>ELWT1116</td>
<td>Pole Top and Bucket Rescue</td>
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<tr>
<td>ELWT1118</td>
<td>Field Construction I.</td>
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<tr>
<td>ELWT1120</td>
<td>Field Construction II</td>
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<tr>
<td>ELWT1122</td>
<td>Field Construction III</td>
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<tr>
<td>or ELWT1132</td>
<td>Electrical Line Worker Internship</td>
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<td>ENGL1101</td>
<td>College Writing</td>
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<td>ENST2001</td>
<td>Fundamentals of Utilities</td>
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<td>ENST2002</td>
<td>Energy Safety Principles</td>
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<td>ENST2222</td>
<td>Blueprint Reading for Energy Industry</td>
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<td>ENST2223</td>
<td>GPS Mapping</td>
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<tr>
<td>MATH1114</td>
<td>College Algebra</td>
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<tr>
<td>PHYS1105</td>
<td>Fundamental Concepts in Physics</td>
<td>3</td>
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<tr>
<td>PSYC1101</td>
<td>Human Interaction</td>
<td>3</td>
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<tr>
<td>SUPL1118</td>
<td>Lead and Facilitate Teams</td>
<td>3</td>
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</tbody>
</table>

*Take three credits from the specified courses.

Electrical Lineworker Technology
Diploma 36 Credits
W B
The Electrical Lineworker program provides trained personnel for the power industry. Coursework provides both theory and practical hands-on experience in all phases of power line construction and maintenance. Coursework includes electrical math, national electrical safety codes, construction of overhead and underground distribution systems, conductor applications, over-voltage and over-current protection, grounding and pole grounding. The 90-acre training field located near the campus provides a site for hands-
on experience in pole setting. The successful graduate is eligible for employment in rural electric and municipal utilities or with private contractors.

## Electrical Technology

### Construction Electricity

**Diploma 74 Credits**

**M/W**

This diploma program is designed to prepare the student to build, install, maintain and repair electrical systems that provide heat, light or power for residential, commercial and industrial structures. Courses provide students with a mix of theory and hands-on application in classroom and lab settings and at job sites. This comprehensive program includes maintenance of electrical equipment, wiring methods, blueprint reading, material selection, programmable controllers and National Electric Code.

<table>
<thead>
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<th>Course #</th>
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<td>CONE1100</td>
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<td>Introduction to Electric Circuit Theory</td>
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<td>CONE1104</td>
<td>Introduction to National Electrical Code</td>
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<td>CONE1107</td>
<td>Introduction to Residential Wiring</td>
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<tr>
<td>CONE1108</td>
<td>Electrical Circuit Theory</td>
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<tr>
<td>CONE1110</td>
<td>Electric Motors and Generators</td>
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<td>CONE1112</td>
<td>Residential Wiring</td>
<td>3</td>
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<tr>
<td>CONE1114</td>
<td>National Electrical Code</td>
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<tr>
<td>CONE1116</td>
<td>Conduit/Tool Applications</td>
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<tr>
<td>CONE1118</td>
<td>Electrical Services</td>
<td>3</td>
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<tr>
<td>CONE1122</td>
<td>Introduction to Electrical Materials</td>
<td>1</td>
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<tr>
<td>CONE1124</td>
<td>Introduction to Electrical Blueprint Reading</td>
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<tr>
<td>CONE1130</td>
<td>Electrical Blueprints</td>
<td>3</td>
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<tr>
<td>CONE2202</td>
<td>Heating/Cooling Controls</td>
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<td>CONE2205</td>
<td>Introduction to Commercial Wiring</td>
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<tr>
<td>CONE2206</td>
<td>Introduction to Motor Control Applications</td>
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<td>CONE2208</td>
<td>Programmable Logic Controllers</td>
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<td>CONE2211</td>
<td>Electronic Motor Control</td>
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<td>CONE2212</td>
<td>Commercial Wiring</td>
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<td>CONE2214</td>
<td>Industrial Wiring</td>
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<td>CONE2216</td>
<td>Motor Control Application</td>
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<td>CONE2225</td>
<td>Transformers</td>
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<td>CONE2228</td>
<td>Electrical Troubleshooting</td>
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<td>CONE2234</td>
<td>Hydraulics/Pneumatics</td>
<td>2</td>
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<tr>
<td>CONE2236</td>
<td>Industrial Motor Maintenance</td>
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<tr>
<td>CONE2246</td>
<td>Advanced Electronics</td>
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</tr>
<tr>
<td>MATH1000</td>
<td>Technical Mathematics</td>
<td>3</td>
</tr>
</tbody>
</table>

### HVAC - Heating, Ventilation and Air Conditioning

**Diploma 36 Credits**

**W**

The Heating, Ventilation and Air Conditioning graduate will be able to design residential and light commercial central heating and air conditioning systems according to load requirements. Graduates will be able to install, troubleshoot and repair residential and light commercial heating and air conditioning equipment; design, fabricate and install forced air and water distribution systems using sheet metal, duct board, copper tubing, PEX tubing, PVC and other accepted materials; install a wide variety of oil and gas boilers and forced-air furnaces; and design, fabricate and install home and light commercial ventilation systems, including both exhaust and fresh air make-up exchanges.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>HVAC1102</td>
<td>Duct Fitting Construction</td>
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<tr>
<td>HVAC1103</td>
<td>Electricity for HVAC</td>
<td>4</td>
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<tr>
<td>HVAC1104</td>
<td>Heating, Ventilating and Air Conditioning Controls</td>
<td>3</td>
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<tr>
<td>HVAC1128</td>
<td>Heating, Ventilating and Air Conditioning Design and Installation</td>
<td>5</td>
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<tr>
<td>HVAC2202</td>
<td>Gas and Oil Heating</td>
<td>3</td>
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<tr>
<td>HVAC2205</td>
<td>Advanced Duct Fitting Construction</td>
<td>3</td>
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<tr>
<td>HVAC2220</td>
<td>Heat Pump Theory</td>
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<tr>
<td>HVAC2290</td>
<td>Heating, Ventilating and Air Conditioning Internship</td>
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<tr>
<td>MATH1000</td>
<td>Technical Mathematics</td>
<td>3</td>
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<tr>
<td>REFR1110</td>
<td>Refrig, A/C and Heat Pump</td>
<td>3</td>
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<tr>
<td>REFR1112</td>
<td>Refrig. A/C and Heating Lab</td>
<td>3</td>
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</tbody>
</table>

### Refrigeration and Air Conditioning

**Diploma 67 Credits**

**M**

Students in this program work with both commercial and residential heating, ventilating, air conditioning and refrigeration equipment. This comprehensive background, together with shop skills in layout, estimating, installation and repair, qualifies graduates to enter one of the world’s fastest-growing industries. Employment exists with manufactur-
ers, engineers, contractors and specialized service firms. Students learn to research and develop applications of more efficient, cost-effective equipment and procedures. Many new, exciting and energy-saving innovations are being developed. Technicians train in this industry to provide the technology to control the environment in any enclosed area, from a home to a space capsule. This includes controlling indoor air quality by utilizing mechanical means to remove pollutants and maintain desired humidity and temperature settings. The knowledge to design, install and maintain these special environments for people, products and perishables is essential today.

PLUMBING TECHNOLOGY

The Plumbing Technology program prepares the student to begin a career in plumbing and pipe fitting. Coursework provides the student with technical understanding and skills development and integrates theory with practical experience. Through the program, the student develops skills in piping techniques and procedures, plumbing and piping systems, residential and commercial system installations, blueprint reading and isometric interpretation. The successful graduate is eligible for 800 hours on his or her apprenticeship card and employment at an advanced apprenticeship level in a variety of businesses found in rural and metropolitan areas.

Course # | Course Title | Crds
--- | --- | ---
COMM1120 | Introduction to Public Speaking | 3
MATH1000 | Technical Mathematics | 3
REFR1102 | Refrigeration Principles | 3
REFR1104 | Refrigeration Lab | 4
REFR1106 | Electrical Fundamentals | 3
REFR1108 | Electrical Lab | 3
REFR1110 | Refrig, A/C and Htg Pricn | 3
REFR1112 | Refrig, A/C and Heating Lab | 3
REFR1115 | Refrigeration Electrical Circuits Fundamentals | 3
REFR1140 | Gas Heating | 2
REFR2202 | Commercial Refrigeration and Air Conditioning Principles | 4
REFR2204 | Commercial Refrigeration and Air Conditioning Lab | 3
REFR2206 | Commercial Electrical Principles | 3
REFR2208 | Commercial Electrical Lab | 3
REFR2211 | Advanced Refrigeration Principles | 4
REFR2212 | Advanced Refrigeration Lab | 3
REFR2213 | Advanced Electrical Theory | 3
REFR2215 | Advanced Electrical Applications | 3
*REFR2216 | Refrigeration Internship | 3
or
REFR1130 | Refrigeration Management | 2
REFR2220 | HVAC Troubleshooting | 3
SOC1111 | Intro to Sociology | 3

* Take three credits from the specified courses.
Manufacturing and Technology

Drafting

Mechanical Drafting and Design AAS..........................78
Mechanical Drafting and Design Diploma..........................78

Manufacturing

Industrial Maintenance Diploma..................................78

*Pending MnSCU approval
Design technicians use a graphic language to communicate ideas or products that must be processed, manufactured or constructed. Students draw layouts of assembly processes and make freehand sketches and rough layouts of machine equipment and parts. They may study costs as they relate to the usefulness of designs and translate the ideas of the engineer into the working plans used in making or installing a product. They convey the engineer's ideas and design to the draftsperson who will make the products. Technicians work under the immediate supervision of a mechanical engineer. They perform operational tasks of a technical nature following well-defined standards using a CAD system and electronic mail.

### Mechanical Drafting and Design

**Diploma 60 Credits**

**M**

Design technicians use a graphic language to communicate ideas or products that must be processed, manufactured or constructed. Students draw layouts of assembly processes and make freehand sketches and rough layouts of machine equipment and parts. They may study costs as they relate to the usefulness of designs and translate the ideas of the engineer into the working plans used in making or installing a product. They convey the engineer's ideas and design to the craftsworker who will make the products. Technicians work under the immediate supervision of a mechanical engineer. They perform operational tasks of a technical nature following well-defined standards using a CAD system and electronic mail.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>CADD1102</td>
<td>Fundamentals of CAD</td>
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<tr>
<td>CADD1114</td>
<td>Intro to Solids and Parametric Modeling</td>
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<tr>
<td>CADD2214</td>
<td>Advanced Solids and Parametric Modeling</td>
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<tr>
<td>CPTTR104</td>
<td>Intro to Computer Tech</td>
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<tr>
<td>ENGR1118</td>
<td>Engineering Applications</td>
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<tr>
<td>MCDD1102</td>
<td>Mech Engineering Drawing I</td>
<td>3</td>
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<tr>
<td>MCDD1106</td>
<td>Mech Engineering Drawing II</td>
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<td>MCDD1114</td>
<td>Manufacturing Process</td>
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<tr>
<td>MCDD1120</td>
<td>Drafting Practices</td>
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<tr>
<td>MCDD1124</td>
<td>Mechanical Drafting Applications I</td>
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<td>MCDD2122</td>
<td>Geometric Dimensioning and Tolerancing</td>
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<td>MCDD2204</td>
<td>Mech Engineering Drawing III</td>
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<td>MCDD2230</td>
<td>Rapid Prototyping</td>
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<tr>
<td>MCDD2246</td>
<td>Tool Design</td>
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<td>MCDD2248</td>
<td>CNC Application</td>
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<tr>
<td>MCDD2252</td>
<td>Mechanical Drafting Applications II</td>
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### Mechanical Drafting and Design

**AAS 72 Credits**

**M**

Design technicians use a graphic language to communicate ideas or products that must be processed, manufactured or constructed. Students draw layouts of assembly processes and make freehand sketches and rough layouts of machine equipment and parts. They may study costs as they relate to the usefulness of designs and translate the ideas of the engineer into the working plans used in making or installing a product. They convey the engineer's ideas and design to the craftsworker who will make the products. Technicians work under the immediate supervision of a mechanical engineer. They perform operational tasks of a technical nature following well-defined standards using a CAD system and electronic mail.

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<thead>
<tr>
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<th>Course Title</th>
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<td>CADD1102</td>
<td>Fundamentals of CAD</td>
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<tr>
<td>CADD1114</td>
<td>Intro to Solids and Parametric Modeling</td>
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<td>CADD2214</td>
<td>Advanced Solids and Parametric Modeling</td>
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<td>ECON2210</td>
<td>Macroeconomics</td>
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<td>College Writing</td>
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<td>Mech Engineering Drawing I</td>
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<td>Mech Engineering Drawing II</td>
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<td>MCDD2204</td>
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<td>Tool Design</td>
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<td>MCDD2248</td>
<td>CNC Application</td>
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<td>MCDD2252</td>
<td>Mechanical Drafting Applications II</td>
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</tr>
<tr>
<td>SOC1111</td>
<td>Intro to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Manufacturing

#### Industrial Maintenance - Pending MnSCU Approval

**Diploma 31 Credits**

**M CTS**

Modern American manufacturing and industry have become highly complicated, high-speed, high-pressure environments requiring skilled workers who have knowledge beyond the rigid confines of individual trade-based maintenance workers of the past. This program prepares students with a foundation in the theory, application and principles of today's manufacturing and industrial environment. This includes the proper installation, maintenance and troubleshooting of mechanical, electrical, electronic, electromechanical and fluid power equipment. In addition, the Industrial Maintenance program introduces students to computerized maintenance management systems, current and emerging predictive/preventive maintenance technologies, and root cause failure analysis. This program emphasizes hands-on learning with realistic labs and equipment.
MINNESOTA STATE COMMUNITY AND TECHNICAL COLLEGE

Nursing and Health Service

Dental

Dental Assisting AAS ................................................................. 82
Dental Assisting Diploma .......................................................... 82
Dental Hygiene AAS ................................................................. 82

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See Health Information and Medical Office Careers .......... 59
Health Information - Technology Specialist Certificate
See Health Information and Medical Office Careers .......... 59

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Medical Laboratory Technician

Medical Laboratory Technology AS ........................................... 83

Nursing

Nursing - Generic Option AS .................................................... 83
Nursing - Mobility Option AS .................................................... 83
Practical Nursing AAS ............................................................. 83
Practical Nursing AAS ............................................................. 83

Pharmacy

Pharmacy Technology AAS .................................................... 84
Pharmacy Technology Diploma ................................................. 84

Phlebotomy

Phlebotomy Technician Certificate ......................................... 84

Radiography

Radiologic Technology AAS .................................................... 85
### Dental

#### Dental Assisting

##### AAS 63 Credits

The Dental Assisting program provides the knowledge necessary for the dental assistant to assist in performing general clinical assisting and support functions, intraoral clinical procedures, business office procedures and laboratory tasks. The curriculum includes content in general studies; biomedical, dental and clinical sciences; clinical practice; and additional intraoral clinical functions. Certain biomedical and dental science courses offered in the curriculum are common to both Dental Assisting and Dental Hygiene majors. Graduates are eligible to write the Dental Assisting National Board Certification Exam and the Minnesota State Board of Dentistry Registration Exam.

<table>
<thead>
<tr>
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<th>Course Title</th>
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<td>Principles of Nutrition</td>
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<td>BIOL2260</td>
<td>Human Anatomy and Physiology I</td>
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<td>BIOL2262</td>
<td>Human Anatomy and Physiology II</td>
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<td>BIOL2267</td>
<td>Medical Microbiology</td>
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<tr>
<td>CHEM1100</td>
<td>Fund Concepts Chemistry</td>
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<td>DENT1100</td>
<td>Biomatериалы</td>
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<td>DENT1102</td>
<td>Dental Anatomy</td>
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<td>DENT1103</td>
<td>Introduction for Dental Health Care Providers</td>
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<td>DENT1104</td>
<td>Dental Health Care Providers I</td>
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<td>DENT1106</td>
<td>Dental Radiology Lecture</td>
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<td>DENT122</td>
<td>Dental Ethics and Jurisprudence</td>
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<td>Head and Neck Anatomy</td>
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<td>Oral Histology and Embryology</td>
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<td>DNHY1109</td>
<td>Radiology Lab</td>
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### Dental Hygiene

#### AAS 88 Credits

M State’s Dental Hygiene program provides knowledge and skills to perform critical dental services that detect, prevent and treat diseases of the mouth while working as part of a dental team. Students who complete the program will leave with the skills to provide current, comprehensive dental hygiene services and may find employment in a variety of settings, such as in private dental offices, schools, hospitals, clinics, public health agencies and more. Students interested in an advanced degree in dental hygiene or a related field have a number of transfer options to four-year colleges and universities.

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### Massage Therapy

#### Diploma 34 Credits

Massage therapists specialize in professional massage treatments designed to support the health and well-being of clients. Skillful massage also assists clients in recovery from physical ailments and reduces the negative effects of stress. Massage therapy students learn the fundamental techniques needed to perform effective massage treatments, as well as the theory behind delivering professional massage.

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Medical Laboratory Technician

Medical Laboratory Technology
AS 60 Credits

F

In cooperation with affiliate hospitals, the college offers a two-year program for training medical laboratory technicians. The curriculum includes three semesters of general education, science and medical laboratory technician courses and 20 weeks in a clinical experience at an affiliate hospital laboratory. Upon completion of the program, students are prepared for the MLT National Board of Registry certification exam and employment in hospitals, clinics, commercial labs, blood donor facilities, instrument sales and education, and research facilities. Graduates may articulate to a four-year institution to receive a Bachelor of Science degree in medical laboratory science.

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Nursing

Nursing - Generic Option
AS 64 Credits

D F W

The Associate Degree Nursing program is designed to prepare registered nurses to deliver nursing care in a variety of settings. The graduating nurse will be able to provide nursing care in hospitals, long-term care facilities, and other health-related facilities. Upon completion of the nursing program, an Associate of Science degree is awarded by the college. Nursing graduates may apply to take the National Council Licensing Exam-RN (NCLEX-RN) following graduation. Students entering the program must complete an annual background check required by the Minnesota Human Services licensing division.

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Nursing - Mobility Option
AS 32 Credits

D F M W

The LPN to Associate Degree RN advanced standing option is designed for licensed practical nurses seeking to become registered nurses. This option is offered on all four M State campuses. Accepted students take a two-credit Role Transition course in the semester prior to the start of their program and then join the Generic Associate Degree nursing students in the second year of the nursing program. The Associate Degree Nursing Program is designed to prepare registered nurses to deliver nursing care in hospitals, long-term care facilities. The graduating nurse will be able to provide nursing care in the hospital, long-term care facilities, clinics, community health and other health-related facilities. Upon completion of the nursing program, an Associate of Science degree is awarded by the college. Nursing graduates may apply to take the National Council Licensing Exam-RN (NCLEX-RN) following graduation. Students entering the program must complete an annual background check required by the Minnesota Human Services licensing division.

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Practical Nursing
AAS 62 Credits

D F M W

The Practical Nursing program prepares the student to practice within the scope of practical nursing under the supervision of a registered nurse. The student is taught to use the nursing process at the practical nurse level in the maintenance of health and prevention of illness, the observation and nursing care of persons experiencing changes in health status, and administration of prescribed medication and treatments. The student will receive supervised learning experience in caring for individuals in a variety of health care settings such as hospitals, long-term care facilities and physician clinic settings. M State offers an Associate in Applied Science degree in practical nursing on all four campuses. Students may choose to complete the diploma in practical nursing track on the Detroit Lakes, Fergus Falls and Wadena campuses. After successful completion of either track, graduates are eligible to apply to take the National Council Licensure Examination for the Practical Nurse. The Minnesota Board of Nursing has officially approved the Practical Nursing program on all four campuses of M State.

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Pharmacy Technology
AAS 60 Credits
E

The pharmacy technician works as an assistant to a registered pharmacist, assisting or relieving the pharmacist in routine technical and clerical duties and functioning in strict accordance with standard written procedures and guidelines under the supervision of the professional pharmacist. AAS graduates have enhanced potential for upward progression in the career of pharmacy, as the general education component gives the student a well-rounded foundation of knowledge. Students, using their own laptop computers, learn how to access patient profiles, input drug orders and print prescription labels. They learn how to fill prescriptions and aseptic technique for intravenous drug admixture in the college's state-of-the-art teaching lab. The work done by pharmacy technicians allows pharmacists to spend more time with patients on medication management. Individuals entering the program must complete a background check required by the Minnesota Human Services Licensing Division. Individuals who do not receive a clear background check may participate in the program but may not be allowed to participate in clinical and/or field experience courses.

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Phlebotomy

Phlebotomy Technician
Certificate 11 Credits
F

The Phlebotomy Technician program prepares students to properly perform phlebotomy (venipuncture and capillary blood) collection and processing in a professional manner. This program also trains students to become proficient and multi-skilled in point-of-care (bedside) testing, computer skills and communication skills. Nurse assistant home health aide training enhances the student's knowledge of patient care and increases his/her marketability in the health care field. Phlebotomy technicians are employed by hospital and clinic laboratories, insurance companies, donor blood facilities and home health agencies.

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* Part of the required course load.
Radiography

Radiologic Technology
AAS 89 Credits

The Radiologic Technology program prepares individuals to perform various radiologic procedures. The radiologic technologist instructs and positions patients, manipulates radiographic equipment, adjusts exposure factors, provides radiation protection for patient and self, develops radiographic images, evaluates the quality of finished radiographs and carries out activities associated with quality control. The student radiologic technologist carries out these functions under the supervision or upon the direction of a registered radiologic technologist.

Graduates of the Radiologic Technology program are eligible for the national certification exam administered by the American Registry of Radiologic Technologists. Successful completion of this exam qualifies the graduate as a Registered Radiologic Technologist.

The selection of students into the Radiologic Technology program is done on a point system using the Application Assessment Sheet to rank applicants comparatively based on course grades and GPA. Individuals entering the program must complete a background check required by the Minnesota Human Services licensing division. Individuals who do not receive a clear background check may participate in the program but may not be allowed to participate in clinical and/or field experience courses.

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<td>HLTH1116</td>
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<td>MATH1114</td>
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<td>PHYS1105</td>
<td>Fundamental Concepts in Physics</td>
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<td>RADT1108</td>
<td>Introduction to Radiologic Technology and Patient Care</td>
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<tr>
<td>RADT1114</td>
<td>Radiographic Procedures I</td>
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<tr>
<td>RADT1124</td>
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<tr>
<td>RADT1132</td>
<td>Principles of Radiobiology</td>
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<td>RADT1140</td>
<td>Radiographic Imaging</td>
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<td>RADT1144</td>
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<td>RADT1148</td>
<td>Radiographic Clinical I</td>
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<td>RADT1168</td>
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<td>RADT2222</td>
<td>Imaging Equipment</td>
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<td>RADT2244</td>
<td>Legal and Ethical Issues in Radiologic Technology</td>
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<td>RADT2248</td>
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<td>RADT2258</td>
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<td>RADT2280</td>
<td>Board Review</td>
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</tbody>
</table>
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### Child Care

#### Child Care and Education

**Certificate 24 Credits**

D W

This program includes coursework in child development (birth through age 8), behavior guidance, development of environments and curriculum for young children and relationships with families, as well as on-site experiences in a variety of programs.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
<tr>
<td>CDEV1105</td>
<td>Development/Guidance</td>
<td>3</td>
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<tr>
<td>CDEV1107</td>
<td>Introduction to Early Education</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2200</td>
<td>Integrating Play</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2229</td>
<td>Imaginative Learning</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2236</td>
<td>Occupational Experience</td>
<td>1</td>
</tr>
<tr>
<td>CDEV2244</td>
<td>Parent Professional Relations</td>
<td>1</td>
</tr>
<tr>
<td>CDEV2246</td>
<td>Foundations in Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CPR1104</td>
<td>CPR-First Aid</td>
<td>1</td>
</tr>
<tr>
<td>PDEV1102</td>
<td>Contemporary Career Search</td>
<td>1</td>
</tr>
</tbody>
</table>

**Early Childhood and Paraprofessional Education**

**AS 60 Credits**

D W

This program includes coursework in child development for ages birth through 8, behavior guidance, children with special needs, development of environments and curriculum for infant/toddler, preschool- and primary school-age children and the role of the paraprofessional, as well as on-site experiences in a variety of programs. Graduates will independently provide a healthy, safe and developmentally appropriate learning environment in support of families. Child development courses in combination with general education courses comprise the 60-credit degree program for students. The program meets the educational requirements for assistant teacher and paraprofessional in an educational setting as well as assistant teacher and teacher in a child care setting and/or family child care provider and group family child care provider (based on program) as listed in Minnesota Department of Human Services Rules Number 9932 and 9933. Work experience, in addition to educational coursework, is required by Rule 3 for teacher positions in licensed child care facilities. Individuals entering the program must complete a background check required by the Minnesota Department of Human Services licensing division. Individuals with any prior record of child maltreatment or crime of violence may participate in the program, but the student will not be allowed to participate in lab or field experience coursework.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART1110</td>
<td>Intro to Art.</td>
<td>5</td>
</tr>
<tr>
<td>CDEV1105</td>
<td>Development/Guidance</td>
<td>3</td>
</tr>
<tr>
<td>CDEV1107</td>
<td>Introduction to Early Education</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2200</td>
<td>Integrating Play</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2229</td>
<td>Imaginative Learning</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2236</td>
<td>Occupational Experience</td>
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</tr>
<tr>
<td>CDEV2241</td>
<td>Observing and Assessing</td>
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</tr>
<tr>
<td>CDEV2242</td>
<td>Infant/Toddler Program</td>
<td>3</td>
</tr>
<tr>
<td>CDEV2244</td>
<td>Parent Professional Relations</td>
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<tr>
<td>CDEV2246</td>
<td>Foundations in Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CMMI1200</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1101</td>
<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL1215</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>PSYC1200</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC1111</td>
<td>Intro to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

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### Cosmetology

#### Cosmetology

**Diploma 58 Credits**

W

Cosmetology is the art, science and business of beauty care and thus offers students a variety of career opportunities. Students completing the program can choose to be general cosmetologists or to excel in an area of expertise such as perming and cutting, hair care and coloring, or skin and nail care. This program welcomes both men and women. Students of the Cosmetology program will receive a combination of classroom and laboratory work with the opportunity to practice their skills on mannequins and actual customers in the campus clinic/salon. Accrued cosmetology hours or credits earned and documented from other licensed colleges, whether in- or out-of-state, may be accepted upon approval of the Minnesota Board of Cosmetologists. Graduates holding a valid cosmetology license are also eligible for employment on tourist ships and in other unique employment settings. Academically, courses in chemistry, English, math and business are necessary in preparing for a career in cosmetology. The Board of Cosmetologists, which is the cosmetology licensing body, requires 1,550 hours of clinical time in order to become licensed in the State of Minnesota. Upon completion of 1,550 hours and passing of the state exam, a license will be issued.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSM1000</td>
<td>Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>COSM1117</td>
<td>Principles of Hair Design</td>
<td>1</td>
</tr>
<tr>
<td>COSM1173</td>
<td>Chemistry and Electricity</td>
<td>1</td>
</tr>
<tr>
<td>COSM1177</td>
<td>Infection Control</td>
<td>1</td>
</tr>
<tr>
<td>COSM1179</td>
<td>Minnesota Cosmetology Laws and Rules</td>
<td>1</td>
</tr>
<tr>
<td>COSM2000</td>
<td>Artistry in Hair Styling</td>
<td>1</td>
</tr>
<tr>
<td>COSM2100</td>
<td>Chemical Texture Services</td>
<td>1</td>
</tr>
<tr>
<td>COSM2200</td>
<td>Manicuring/Pedicuring</td>
<td>1</td>
</tr>
<tr>
<td>COSM2300</td>
<td>Anatomy of the Head, Face and Neck</td>
<td>1</td>
</tr>
<tr>
<td>COSM2400</td>
<td>Advanced Nail Techniques</td>
<td>1</td>
</tr>
<tr>
<td>COSM2500</td>
<td>Salon Business</td>
<td>1</td>
</tr>
<tr>
<td>COSM2600</td>
<td>Professional Image</td>
<td>1</td>
</tr>
</tbody>
</table>

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#### Manicurist

**Certificate 16 Credits**

W

The Manicurist program is designed to give students a thorough knowledge of dermatology, the structure, growth and health of the nail and chemistry as it relates to manicuring, as well as sanitation and safety procedures related to the practice of manicuring. Instructors will cover applied studies and skills in cleaning, conditioning, shaping, reinforcing, coloring and enhancing nails, as well as the application and removal of artificial nails. The Board of Cosmetologists, which is the cosmetology licensing body, requires 350 hours of clinical time in order to become licensed in the State of Minnesota. Upon completion of 350 hours and passing of the state exam, a license will be issued.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSM1000</td>
<td>Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>COSM1117</td>
<td>Principles of Hair Design</td>
<td>1</td>
</tr>
<tr>
<td>COSM1116</td>
<td>Nail Structure and Growth</td>
<td>1</td>
</tr>
<tr>
<td>COSM1179</td>
<td>Minnesota Cosmetology Laws and Rules</td>
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<tr>
<td>COSM2000</td>
<td>Artistry in Hair Styling</td>
<td>1-18</td>
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<tr>
<td>COSM2200</td>
<td>Manicuring/Pedicuring</td>
<td>1</td>
</tr>
<tr>
<td>COSM2400</td>
<td>Advanced Nail Techniques</td>
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</table>
Criminal Justice

Correctional Officer
Certificate 25 Credits

M

Students interested in a criminal justice career other than law enforcement may enroll in the Correctional Officer certificate program. The certificate program is designed to provide pre-employment education for the student who desires a position as a correctional officer. The program also provides continuing education for employed correctional officers. Students who complete the certificate program articulate into the two-year Criminal Justice AS degree for peace officer licensing.

Criminal Justice
AS 60 Credits

M

The AS degree in Criminal Justice prepares students for careers in law enforcement. M State’s Criminal Justice program has been designated a Professional Peace Officer Education Program by the Minnesota Board of Peace Officer Standards and Training. Students seeking a career in law enforcement will be prepared for and offered the opportunity to complete all educational and practical requirements necessary to apply for peace officer licensing. The internship program provides students with comprehensive training to develop additional skills in critical thinking, communications and practical application. Criminal Justice faculty have extensive academic and practical experience within the field. Students seeking an AS in Criminal Justice are required to declare that intention prior to the second semester of coursework.

Acceptance into the program is contingent on the student’s:
• Completion of at least 12 credits of required general education courses.
• Achievement of a cumulative grade point average of 2.5 or higher.
• Completion of at least 12 credits of required general education courses.
• Successful completion of a personality assessment provided and evaluated through M State.

Note that expenses listed in brackets above and marked by an "^" are not eligible for financial aid.

If there are more applicants who meet the above criteria than the program can accommodate, applicants will be selected based on program application date. Registration to some Criminal Justice courses is restricted to AS degree students unless approved by the program coordinator.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tr>
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<td>Principles of Bookkeeping</td>
<td>3</td>
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<tr>
<td>CPT1100</td>
<td>Fund Computer Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CRJU1101</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CRJU1108</td>
<td>Physical Control Tactics for Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CRJU1109</td>
<td>Law Enforcement Behavioral Science</td>
<td>3</td>
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<tr>
<td>CRJU2201</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>CRJU2206</td>
<td>Police Report Writing</td>
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<tr>
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<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>SOC2216</td>
<td>Minority Group Relations</td>
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</table>

Esthetics
Certificate 21 Credits

W

Esthetics is the non-medical treatment of the skin, its disorders and function. Instruction includes the sciences of anatomy, dermatology and chemistry as related to skin care; electricity light therapy; sanitation and safety procedures; Minnesota statutes and laws which pertain to the regulation of the practice of skin care; and elementary service skills. The Board of Cosmetologists, which is the cosmetology licensing body, requires 600 hours of clinical time in order to become licensed in the State of Minnesota. Upon completion of 600 hours and passing of the state exam, a license will be issued.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tr>
<td>COSM1000</td>
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<tr>
<td>COSM1157</td>
<td>Histology of the Skin</td>
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<tr>
<td>COSM1159</td>
<td>Facials, Make-Up and Hair Removal</td>
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<tr>
<td>COSM1179</td>
<td>Minnesota Cosmetology Laws and Rules</td>
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</tbody>
</table>

Fire Service

Fire Department Company Officer
Certificate 22 Credits

E

The Fire Department Company Officer program is designed for individuals who have a minimum of two years experience as fire service personnel. The program prepares individuals for the role of company officer, the individual who organizes, coordinates and controls a fire response team. The Fire Company Officer program presents critical subject matter to students who, upon completion of the certificate, would be prepared to serve as a fire department supervisor. Program graduates receive a fire company officer certificate of credit. The program meets qualification standards for state certification in the state in which the student resides.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENGL1101</td>
<td>College Writing</td>
<td>3</td>
</tr>
<tr>
<td>FIRE1180</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FIRE2020</td>
<td>Fire and Emergency Services Administration</td>
<td>3</td>
</tr>
<tr>
<td>FIRE2030</td>
<td>Fire Inspector I</td>
<td>2</td>
</tr>
<tr>
<td>FIRE2040</td>
<td>Fire Protection Systems</td>
<td>3</td>
</tr>
<tr>
<td>FIRE2050</td>
<td>Fire Prevention</td>
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<tr>
<td>FIRE2060</td>
<td>Strategy and Tactics</td>
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<tr>
<td>FIRE2080</td>
<td>Fire Service Leadership and Management</td>
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</tbody>
</table>

Fire Service Preparation
Certificate 30 Credits

M

This certificate program provides an opportunity for individuals interested in a career in the fire service with the minimum requirements necessary to meet national and Minnesota state qualifications. This program is designed to meet all National Fire Protection Association standards in the following functions: Standard for Firefighter Professional Qualifications, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, Standard for Professional Qualifications for Fire Inspector and Plan Reviewer, Standard for Professional Qualifications for Public Fire and Life Safety Educator, Standard on Operations and Training for Technical Search and Rescue Incidents and the Standard for Technical Rescue Professional Qualifications. Participants in the Fire Service Preparation program will be actively involved with technical hands-on training to ensure that they are familiar with all entry-level aspects of fire service. Upon completion of the certificate, students will be eligible to take the national testing requirements for emergency medical technician, International Fire Service Accreditation Congress and Proboard. Students will also be eligible for the State of Minnesota firefighter license after employment with a career fire department.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Crds</th>
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<tbody>
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<td>ENGL1101</td>
<td>College Writing</td>
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<tr>
<td>FIRE1180</td>
<td>Building Construction for Fire Protection</td>
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<td>FIRE2020</td>
<td>Fire and Emergency Services Administration</td>
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</tr>
<tr>
<td>FIRE2030</td>
<td>Fire Inspector I</td>
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<tr>
<td>FIRE2040</td>
<td>Fire Protection Systems</td>
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<td>FIRE2050</td>
<td>Fire Prevention</td>
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<tr>
<td>FIRE2060</td>
<td>Strategy and Tactics</td>
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</tr>
<tr>
<td>FIRE2080</td>
<td>Fire Service Leadership and Management</td>
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<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMM1140</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
</tbody>
</table>
**Sign Language**

**American Sign Language Studies**  
Certificate 15 Credits

The American Sign Language Studies certificate provides students with a basic knowledge of American Sign Language and Deaf culture. The curriculum provides a foundation for entry into a career in a deafness-related field and prepares students for continued educational studies in more advanced preparation for ASL Interpreter Certification. This program does not prepare students to become interpreters.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL1111</td>
<td>American Sign Language and Deaf Culture I</td>
<td>3</td>
</tr>
<tr>
<td>ASL1112</td>
<td>American Sign Language and Deaf Culture II</td>
<td>3</td>
</tr>
<tr>
<td>ASL1113</td>
<td>American Sign Language and Deaf Culture III</td>
<td>4</td>
</tr>
<tr>
<td>ASL1114</td>
<td>American Sign Language and Deaf Culture IV</td>
<td>4</td>
</tr>
<tr>
<td>ASL1115</td>
<td>American Sign Language and Deaf Culture V</td>
<td>3</td>
</tr>
<tr>
<td>ASL2000</td>
<td>Advanced Fingerspelling, Numbers and Classifiers</td>
<td>3</td>
</tr>
<tr>
<td>ASL2000</td>
<td>Linguistics of American Sign Language</td>
<td>3</td>
</tr>
<tr>
<td>COMM1120</td>
<td>Introduction to Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>CPTTR100</td>
<td>Fund Computer Concepts</td>
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<td>ENGL1101</td>
<td>College Writing</td>
<td>3</td>
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<tr>
<td>IPP1111</td>
<td>Introduction to Interpreting</td>
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</tr>
<tr>
<td>IPP1112</td>
<td>Beginning ASL to English</td>
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<td>IPP1113</td>
<td>Beginning English to American Sign Language</td>
<td>3</td>
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<tr>
<td>IPP2112</td>
<td>Advanced ASL to English</td>
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<td>IPP2113</td>
<td>Advanced English to American Sign Language</td>
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<td>IPP2114</td>
<td>Educational Interpreting</td>
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<td>IPP2215</td>
<td>Topics in Interpreting</td>
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<tr>
<td>IPP2216</td>
<td>Practicum</td>
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<td>IPP2217</td>
<td>Interpreting Internship</td>
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<td>IPP2218</td>
<td>Internship Seminar</td>
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</tr>
<tr>
<td>PSYC1200</td>
<td>General Psychology</td>
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</tr>
</tbody>
</table>

* Take three credits from the specified courses.

**Sign Language Interpreter Preparation**  
AAS 65 Credits

The Sign Language Interpreter Preparation program prepares individuals to work as interpreters facilitating and mediating communication between deaf/hard of hearing and hearing people. Students will gain sign language skills, an understanding of Deaf culture, knowledge of the interpreter’s role and skill development for the profession of sign language interpreting. Students will experience a variety of learning environments, including classroom work, laboratory practice and field placement.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL1111</td>
<td>American Sign Language and Deaf Culture I</td>
<td>3</td>
</tr>
<tr>
<td>ASL1112</td>
<td>American Sign Language and Deaf Culture II</td>
<td>3</td>
</tr>
<tr>
<td>ASL1113</td>
<td>American Sign Language and Deaf Culture III</td>
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</tr>
<tr>
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<td>Introduction to Public Speaking</td>
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<tr>
<td>CPTTR100</td>
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<td>Topics in Interpreting</td>
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<tr>
<td>PSYC1200</td>
<td>General Psychology</td>
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</tbody>
</table>

* Take three credits from the specified courses.

* Take six credits from the specified courses.

---

**Paralegal**

**Paralegal**  
AAS 66 Credits

This program prepares graduates for work under the supervision of an attorney. Students will study theory as it applies to law; research statutes, case law and court rules; and prepare legal documents. The student will also learn to analyze procedural and substantive legal problems, manage caseloads and interview clients.

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<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Creds</th>
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<tbody>
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<td>Sociology Electives</td>
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<tr>
<td>or ACCT2211 Financial Accounting I</td>
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<td>or COMM120 Introduction to Public Speaking</td>
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<td>or CPTTR104 Intro to Computer Tech</td>
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<tr>
<td>or ENGL1101 College Writing</td>
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<tr>
<td>or HRER122 Human Resource Management</td>
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<tr>
<td>or PARA1101 Introduction to Paralegal</td>
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<tr>
<td>or PARA1102 Research and Writing I</td>
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<tr>
<td>or PARA1104 Civil Law for Paralegals</td>
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<td>or PARA1105 Criminal Law for Paralegals</td>
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<td>or PARA1106 Will, Trusts and Probate</td>
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<td>or PARA2202 Research and Writing II</td>
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<td>or PARA2204 Real Property</td>
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<td>or PSCI1130 State and Local Government</td>
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* Take three credits from the specified courses.

* Take six credits from the specified courses.
Transfer

Art

AFA in Art ................................................................. 94
AFA in Music ............................................................... 95

Associate in Arts

See Associate in Arts .................................................. 46
See Associate in Arts - Social Work emphasis .............. 49
See Associate in Arts - Sociology emphasis ................. 49

Biology

Biological Science AS .................................................. 94

Criminal Justice

Criminal Justice AS
See Service ................................................................. 89

Engineering

Engineering AS Moorhead ............................................ 94
Engineering AS - Fergus Falls ..................................... 95

Environmental Science

Environmental Science AS
See Agriculture, Foods, Natural Resources and Science .... 53

Human Resources

Human Resources AAS
See Business, Office and Entrepreneurship ..................... 59

Music

Music AFA ................................................................. 95
Biology

Biological Sciences

AS 60 Credits

M

This degree is designed for students interested in the various fields of biological sciences such as cell biology, bioengineering, environmental science, fish and wildlife management, forestry, genetics and microbiology. Students majoring in biological sciences may also be interested in the following program areas: biochemistry, chemistry, pre-chiropractic, pre-dentistry, pre-medicine, pre-medical technology, pre-optometry, pre-pharmacy and pre-veterinary medicine. The curriculum listed below should be used as a guide since required courses vary considerably among the four-year institutions and professional schools. Students planning a degree in biological sciences or one of the above fields should contact the biology department and work with an advisor. A visit to the intended transfer institution by the spring of the first year is highly recommended.

Course # Course Title Crds

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<td>ENGL1210</td>
<td>Writing About Current Issues</td>
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<td>or</td>
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</table>
| * Take three credits from the specified courses.

Engineering

Engineering

AS 60 Credits

M

The AS in Engineering consists of the sequential math, physics and other science courses which will transfer to either a BS in physics or to diverse engineering programs at many four-year colleges and universities. An AS in Engineering will also open an option for technical jobs in the upcoming new energy sector. In general, a degree in engineering has been and will continue to be an excellent platform for success across a wide range of careers in the private sector, government, schools, colleges and universities.

Course # Course Title Crds

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<tr>
<th>Course #</th>
<th>Course Title</th>
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</table>

* Take three credits from the specified courses.
**Engineering - Fergus Falls**

**AS  60 Credits**

The AS in Engineering consists of the sequential math, physics and other science courses which will transfer to either a BS in Physics or to diverse Engineering programs at many four-year colleges and universities. An AS in Engineering will also open an option for technical jobs in the upcoming new energy sector. In general, a degree in engineering has proven to be and will continue to be, an excellent platform for success across a wide range of careers in the private sector, government, schools, colleges and universities.

<table>
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<td>MATH1135</td>
<td>Calculus II</td>
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<tr>
<td>MATH1136</td>
<td>Calculus III</td>
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</table>

* Take two credits from the specified courses.

**Music**

**AFA  68 Credits**

The AFA in Music is designed to provide a means for music students to pursue a path with seamless transition to a four-year music degree and to be best prepared for a degree and/or career in music. The AFA emphasizes a fine arts focus within a discipline area of study and offers students preparation for fine arts study at the university level. The AFA in Music at M State allows for a choral or instrumental emphasis and ensures that students will have the necessary coursework to prepare for advanced studies in music.

<table>
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<td>MUSC2291</td>
<td>Individual Piano Lessons</td>
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<td>MUSC1115</td>
<td>America's Musical Heritage</td>
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<tr>
<td>MUSC1120</td>
<td>Intro to Music Technology</td>
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<td>MUSC1121</td>
<td>Basic Music Theory I</td>
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<td>MUSC1124</td>
<td>Sight Singing / Ear Training II</td>
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<tr>
<td>MUSC2223</td>
<td>Sight Singing / Ear Training III</td>
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* Take three credits from the specified courses.
Transportation Programs

Auto Body Repair

Auto Body Collision Technology AAS ........................................ 98
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Diesel Equipment Technology AAS
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(Truck Option) ...................................................................... 99

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Diesel Equipment Technology Diploma ............................... 100

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Marine Engine Technology Certificate ................................. 101

PowerSports

PowerSports Technology Diploma ....................................... 101
Auto Body Repair

Auto Body Collision Technology
AAS 72 Credits
D

Auto body technicians repair and replace damaged portions of automobile bodies and frames. They straighten bent frames and/or unibody cars, remove and repair dents in body panels and fenders and weld breaks in body metals. They install window glass and windscreens. Technicians also sand and mask repair areas and perform drive train component replacements, wheel alignments and some mechanical and electrical repairs.

Students entering this program should have good mechanical aptitude, good communication skills and the ability to comprehend service literature. Graduates of this program will find opportunities for employment as body repair technicians and may become estimators, service sales persons, service managers or parts managers. Some may move into supervisory positions, start their own repair shops or become insurance company damage appraisers.

<table>
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<th>Course #</th>
<th>Course Title</th>
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<td>ABCT1104</td>
<td>Auto Body Lab I</td>
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<td>ABCT1105</td>
<td>Introduction to Refinishing</td>
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<td>ABCT1110</td>
<td>Panel Replacement</td>
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<td>ABCT1112</td>
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<td>ABCT1114</td>
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<tr>
<td>ABCT1116</td>
<td>Glass and Trim</td>
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<tr>
<td>ABCT1118</td>
<td>Basic Electrical</td>
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<tr>
<td>ABCT2202</td>
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<td>ABCT2216</td>
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</table>

Auto Body Collision Technology
Diploma 66 Credits
D

Auto body technicians repair and replace damaged portions of automobile bodies and frames. They straighten bent frames and/or unibody cars, remove and repair dents in body panels and fenders and weld breaks in body metals. They install window glass and windscreens. Technicians also sand and mask repair areas and perform drive train component replacements, wheel alignments and some mechanical and electrical repairs.

Students entering this program should have good mechanical aptitude, good communication skills and the ability to comprehend service literature. Graduates of this program will find opportunities for employment as body repair technicians and may become estimators, service sales persons, service managers or parts managers. Some may move into supervisory positions, start their own repair shops or become insurance company damage appraisers.

<table>
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<tr>
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<th>Course Title</th>
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<tr>
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Automotive Service Technology
AAS 72 Credits
D M

The automotive service technician works in an exciting and rapidly changing industry. Students in this program will receive training in the many service and diagnostic procedures necessary to maintain our nation on wheels. Students are trained in modern laboratories equipped with current service and testing equipment. Students entering this program should have good mechanical aptitude, good communication skills and the ability to read and comprehend service literature. Graduates of this program will find opportunities including drive line technician, driveability technician, alignment and suspension specialist, transmission specialist, service adviser and manager. Opportunities for advancement may include factory and dealer representatives, management and self-employment.

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<tr>
<td>TRNS1102</td>
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Automotive Service Technology
Diploma 69 Credits
D M

Automotive service technicians work in an exciting and rapidly changing industry. Students in this program will receive training in the many service and diagnostic procedures necessary to maintain our nation on wheels. Students are trained in modern laboratories equipped with current service and testing equipment. Students entering this program should have good mechanical aptitude, good communication skills and the ability to read and comprehend service literature. Graduates of this program will find opportunities including drive line technician, driveability technician, alignment and suspension specialist, transmission specialist, service adviser and manager. Opportunities for advancement may include factory and dealer representatives, management and self-employment.

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# Diesel Equipment Technology

## (Case IH & New Holland Sponsored) - AAS 79 Credits

The Case IH or New Holland diesel equipment technician works in an exciting and rapidly changing industry. Students in this partnership program receive an education in diesel and heavy equipment technology.

**Sponsorship:** Case IH & New Holland

**Forging the Future Partnership**

Sponsorship is granted on interviews, standardized tests and admission to M State. Students who are accepted into the sponsored program may qualify to receive the following:
- Partial reimbursement for tuition costs and tools.
- Employment with Case IH or New Holland during the academic year.
- Employment during the summer after the first year.
- Uniforms for work and school.

To learn more about the Case IH & New Holland Forgiving the Future Partnership program, contact your local Case IH or New Holland dealership. For additional information about Case IH & New Holland go to [http://www.cnh.com](http://www.cnh.com).

Students entering the Forgiving the Future Partnership should have good mechanical aptitude, good communications skills and the ability to comprehend service literature. The program prepares individuals to diagnose and repair components. This includes such items as diesel engines, transmissions, drive lines, differentials, hydraulic systems, electrical systems and electronically-controlled fuel systems and transmissions and involves instruction in the use of a wide variety of tools and diagnostic testing equipment. Students are prepared for careers that require them to inspect, diagnose, repair and maintain Case IH or New Holland agricultural and construction equipment. Instruction includes diagnosing, disassembling, repairing and adjusting systems and parts, including brakes, starting and charging system components, suspension, fuel systems, differential, electronic fuel control, clutch and transmissions, air conditioning and refrigeration. The Case IH & New Holland partnership also requires students to perform supervised occupational work experiences at sponsoring Case IH or New Holland dealerships, which provides on-the-job work experience. Each supervised occupational work experience is 7-8 weeks in length.

### Course # | Course Title | Crds
--- | --- | ---
**BIO1107** or **HUM2326** | Environmental Science Issues | 3
**HUM2326** | Technology in the Humanities | 3
**COMM1120** | Introduction to Public Speaking | 3
**CPR1104** | Intro to Computer Tech | 3
**DCNH1116** | CNH (Case New Holland) Supervised Occupational Experience (SOE) I | 3
**DCNH1118** | CNH (Case New Holland) Supervised Occupational Experience (SOE) II | 3
**DCNH2210** | Mobile Hydraulics | 4
**DCNH2218** | CNH (Case New Holland) Supervised Occupational Experience (SOE) III | 3
**DCNH2238** | Transmissions and Drive Systems | 4
**DCNH2242** | Advanced Engines and Fuel Systems | 6
**DSET1100** | Diesel Equipment Fundamentals | 2
**DSET1106** | Fuel Systems | 2
**DSET1110** | Power Train I | 3
**DSET1112** | Hydraulics I | 4
**DSET1124** | Diesel Shop Management | 1
**DSET1130** | Trans Elect Start/Charge | 3
**DSET1132** | Introduction to Engine Theory | 2
**DSET1134** | Introduction to Engines | 3
**DSET1184** | Electrical Troubleshooting | 3
**DSET2204** | Advanced Electrical and Equipment Systems | 3
**DSET2206** | Electronic Controls | 3
**ECON1150** | Essentials of Economics | 3
**ENGL1101** | College Writing | 3
**HLTH1122** | CPR-First Aid | 1
**PDEV1102** | Contemporary Career Search | 1
**SOCI111** | Intro to Sociology | 3
**TRNS1112** | Heating Ventilation A/C | 3

*Take three credits from the specified courses.

## Diesel Equipment Technology

### (John Deere Sponsored) - AAS 79 Credits

**M**

John Deere Construction & Forestry Specialization

We can jump-start your career! The John Deere Construction & Forestry Technician (C & F Tech) program is a collaboration between John Deere, RDO Equipment Co., Nortrax and Minnesota State Community and Technical College to train future John Deere qualified service technicians.

The first year of this dynamic two-year program will be spent in classes designed to teach the operational concepts of diesel engines, power trains, brakes, electrical and hydraulic systems and shop procedures and safety. The second-year training coursework was designed by John Deere and concentrates on the specific John Deere product line, as well as engine tune-up and troubleshooting, crawler undercarriages, hydrostatic transmissions and failure analysis.

Along with technical expertise, students entering the John Deere partnership program should be eager to partner with John Deere customers to provide long-term service and support. Therefore another component of the John Deere C & F Tech program is the supervised occupational work experiences students perform at sponsoring John Deere dealerships. This 7-8 week opportunity provides invaluable on-the-job work experience.

Sponsorship: RDO Equipment Co. and Nortrax are the John Deere construction & forestry equipment dealers in ND, SD, MT, WI & MN. Dealer sponsorship is based on an application process which includes interviews, a standardized test and admission to M State. Students accepted into the program qualify to receive:

- *$800 in tuition reimbursement.*
- Paid part-time employment opportunities during the school year and full-time the summer after the first year.
- Uniforms for work and school.

To learn more about the John Deere C & F Tech sponsorship program, contact Summer Froemke at RDO Equipment Co. at sfroemke@dtequipment.com or Stacey Johnson at Nortrax at Stacey.Johnson@Nortrax.com. For additional information about the program, go to [www.johndeere.com/tech](http://www.johndeere.com/tech).

### Program Profiles

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<td><strong>TRNS1112</strong></td>
<td>Heating Ventilation A/C</td>
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</table>

*Take three credits from the specified courses.

**Take one credit from the specified courses.

### Diesel Equipment Technology

#### (Truck Option) - AAS 79 Credits

**M**

The diesel equipment technician works in an exciting and rapidly changing industry. Students in this program receive the diagnostic and service training needed to be successful in their chosen field.

Students entering should have good mechanical aptitude, good communication skills and the ability to comprehend service literature. The program prepares individuals to diagnose and repair all components. This includes such items as diesel engines, transmissions, drive
**Program Profiles**

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**Take three credits from the specified courses.**

**Take one credit from the specified courses.**

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### Diesel Equipment Technology

**Diploma 65 Credits**

**M**

The diesel equipment technician works in an exciting and rapidly changing industry. Students prepare individuals to diagnose and repair all components, including diesel engines, transmissions, drive lines, differentials, hydraulic and air brake systems, electrical systems, electronically controlled fuel systems and transmissions. Students receive instruction in the use of a wide variety of tools and diagnostic testing equipment. Students are prepared for careers requiring them to inspect, diagnose, repair and maintain trucks, trailers, farming equipment, diesel and construction equipment, stationary diesel engines in electrical generators and related equipment. Instruction includes diagnosing, disassembling, repairing and adjusting systems and parts, vehicle service, air brake systems, starting and suspension systems, wheel alignment, fuel systems, differential, electronic fuel control, clutch and transmissions, air conditioning and refrigeration. About two-thirds of the instruction time is spent in the diesel lab working on live work and training models. Students learn to diagnose problems and disassemble, recondition and replace faulty parts and they get hands-on training on such components as electrical, transmissions, air conditioning, brakes, fuel system hydraulics and engines. This program is an Association of Diesel Specialists TechSmart program participant.

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Marine Engine

Marine Engine Technology
AAS 69 Credits
D

Curriculum in the Marine Engine Technology AAS is designed to educate individuals to become competent marine technicians along with learning the needed soft skills expected for management and manufacturer positions. The primary focus of the program is the diagnosis, service, and the repair of outboard and stern drive engines and drive all with the understanding that the graduate of this program may need to deal with customers in explaining these various systems. Our students perform these services on modern marine product using special test equipment and tools. Students in this program will learn how to plan and perform repairs according to the various manufacturers' recommended procedures. This course is designed for the individual who is looking towards a long-term goal of management, technical manufacturer service and business ownership to name just a few options.

Course # | Course Title | Crds
---|---|---
TRNS1193 Fuel Systems I Lab | | 1
TRNS1194 Fuel Systems I Theory | | 2
TRNS1197 Fuel Systems I Theory | | 1
TRNS1198 Fuel Systems I Theory | | 2
TRNS2108 Power Hydraulics | | 3

Marine Engine Technology
Diploma 60 Credits
D

Marine engine technicians work in an exciting, rapidly changing and growing industry. The Marine Engine Technology curriculum is designed to educate individuals to become competent marine technicians. The primary focus of this diploma program is the diagnosis, service and repair of outboard and stern drive/inboard engines, drive systems and related systems and components. Students service modern marine equipment using special test equipment and tools. Students in this program will learn how to plan and perform repairs according to the various manufacturers' recommended procedures. Students entering this program should have good mechanical aptitude, communication skills and the ability to comprehend service literature. Graduates of this program are in high demand to fill positions in shipyards as technicians, with many having opportunities to move into management, self-employment and factory representative positions.

Course # | Course Title | Crds
---|---|---
MRNT1104 Drive System Theory | | 3
MRNT1105 Drive System Service | | 4
MRNT2203 Marine Advanced Fuel Systems | | 3
MRNT2207 EFI and Advanced Electrical Systems | | 4
MRNT2210 Engine Service | | 2
MRNT2218 Adv Electrical Diagnosis | | 3
MRNT2222 Transom and Mid-Section Service | | 3
MRNT2231 Engine Performance Rebuild and Diagnostics | | 3
MRNT2238 Marine four-stroke outboard engine service | | 2
TINS1100 Introduction to Shop Technology | | 2
TINS1104 Transportation Electronics | | 3
TINS1125 Starting and Charging Theory | | 2
TINS1126 Starting and Charging Lab | | 2
TINS1193 Fuel Systems Lab | | 2
TINS1194 Fuel Systems I Theory | | 2
TINS1197 Electrical Systems I Lab | | 2
TINS1198 Electrical Systems I Theory | | 2
TINS2306 Snowmobile Drives and Suspensions | | 3
TINS2308 Advanced Snowmobiles | | 2
TINS2310 Motorcycles II | | 3

PowerSports

PowerSports Technology
Diploma 60 Credits
D

Students who wish to become skilled PowerSports mechanics must be capable of diagnosing mechanical failures quickly and accurately if they are to be in a position to repair the job at a fair salary return. Most types of two- and four-cycle small engines that are currently used to power lawn mowers, snow blowers, generators, garden tractors, rototillers, snowmobiles, ATVs and personal watercraft will be covered. Students who perform satisfactorily may find employment as service technicians, sales personnel and factory representatives, or they may wish to enter business for themselves. This program requires a mechanical aptitude and the ability to read and comprehend technical service manuals, understand and perform a variety of diagnostic procedures and work well with fellow employees and customers.

Course # | Course Title | Crds
---|---|---
MRNT1120 Marine Starting and Charging Systems | | 3
MRNT2231 Engine Performance Rebuild and Diagnostics | | 5
PWST2302 Snowmobile I | | 2
PWST2304 Snowmobile Clutching | | 2
PWST2306 Snowmobile Drives and Suspensions | | 3
PWST2308 Advanced Snowmobiles | | 2
PWST2310 Motorcycles II | | 3
PWST2312 Advanced Motorcycle Systems | | 3
TINS1100 Introduction to Shop Technology | | 4
TINS1104 Transportation Electronics | | 3
TINS1193 Fuel Systems Lab | | 1
TINS1194 Fuel Systems I Theory | | 2
TINS1197 Electrical Systems I Lab | | 2
TINS1198 Electrical Systems I Theory | | 2
TINS2108 Power Hydraulics | | 2

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Minnesota State Community and Technical College
Course Catalog 2013-2014

101

PROGRAM PROFILES
### Auto Body Collision Technology

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### Accounting

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**Description:**

- **ABCT 1100 Introduction to Auto Body**: This course is the study of auto body safety, shop operation procedures, power and hand tool use, shop equipment applications, frame measuring instruments, service literature, introduction to estimating guides, general service knowledge, professional work habits, industry standards and expectations.
- **ABCT 1102 Auto Body Off Car Repair**: This course focuses on sheet metal repair processes used for minor auto body repairs. Instruction includes the use of tools and auto body industry equipment. Students learn skills of body filler and fiberglass repair along with corrosion protection. Environmental standards will be introduced.
- **ABCT 1104 Auto Body Lab I**: This is a lab course in which students will build proficiency in the basic auto body skills of welding, sheet metal repair, corrosion protection, rust repair, body filler and fiberglass repair.
- **ABCT 1106 Introduction to Refinishing**: This course teaches students refinishing safety, use of tools and equipment surface preparation and refinishing material application procedures.
- **ABCT 1110 Panel Replacement**: This course covers the replacement of damaged panels using current industry procedures.
- **ABCT 1112 Auto Body Refinishing**: This course teaches the preparation for overall refinishing procedures, paint mixing and color matching. It also teaches skills in spot repair, blending and application of pinstriping and chip guard.
- **ABCT 1114 Auto Body Lab II**: In this lab course, students will build proficiency in the auto body skills of refinishing, corrosion protection, rust repair, glass repair and welding.
- **ABCT 1116 Glass and Trim**: This course teaches students safe procedures for the removal, replacement and repair of movable glass. It also covers the application of various methods of attachments on auto body trim and hardware.
- **ABCT 2202 Unibody/Frame Alignment**: This course focuses on safe repair of unitized and conventional frame vehicles. Students study suspension systems and learn procedures for wheel alignment.
- **ABCT 2204 Body Shop Operations**: Emphasis in this course is on proper shop management procedures including inventory management, parts and repair ordering, payroll procedures, employee/employer relations, hiring/dismissal procedures, customer relations, estimating procedures, insurance procedures and insurance coverages.
- **ABCT 2206 Mechanical Components I**: Students will learn principles of removing and installing mechanical parts in front-wheel and rear-wheel drive vehicles. Students also study principles of air conditioning, evacuate and replace components and change air conditioning systems.
- **ABCT 2208 Major Collision Lab I**: Students build proficiency in their auto body repair skills in this lab course. Emphasis is on major collision repair. Students will also be expected to exhibit the dependability, attitudes and work habits that employers expect of their employees.

**Prerequisites and Corequisites:**

- **ABCT 1100**: None
- **ABCT 1102**: None
- **ABCT 1104**: None
- **ABCT 1106**: None
- **ABCT 1110**: None
- **ABCT 1112**: None
- **ABCT 1114**: None
- **ABCT 1116**: None
- **ABCT 2202**: None
- **ABCT 2204**: None
- **ABCT 2206**: None
- **ABCT 2208**: None

**Corequisites:**

- **ABCT 1100**: TRNS1 102
- **ABCT 1114**: TRNS1102 AND TRNS1118
- **ABCT 2204**: None
- **ABCT 2206**: None
- **ABCT 2208**: None

**Prerequisites:**

- **ABCT 1100**: TRNS1 102
- **ABCT 1114**: TRNS1102
- **ABCT 2204**: None
- **ABCT 2206**: None
- **ABCT 2208**: None

**Description:**

- **ACCT 1000 Business Math**: This course covers commonly occurring business-related calculations and their application to accounting and other business functions.
- **ACCT 1012 Principles of Bookkeeping**: This course covers the basic accounting cycle for service and merchandising businesses. Topics include the analyses of business transactions, recording transactions in a variety of journals, payroll procedures and preparation of financial reports.
- **ACCT 1101 Payroll**: This course covers the various tax laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records and government payroll reports.
- **ACCT 1108 Business Math/Calculators**: This course covers commonly occurring business-related calculations, application of these calculations to accounting and other business functions and use of the touch system on the computer number pad keyboard.
ACCT 2202 Financial Accounting II Lab 1 0/1/0
This course is an introductory lab course associated with Financial Accounting II (ACCT2212). Students must be enrolled in ACCT2212 to enroll in this course. Major content will be the practical application of concepts introduced in the lecture course.
Prerequisite: None
Corequisite: ACCT2212

ACCT 2203 Managerial Accounting Lab 1 0/1/0
This course is the lab course associated with Managerial Accounting (ACCT2213). Students must be enrolled in ACCT2213 to enroll in this course. Major content will be the practical application of concepts introduced in the lecture course.
Prerequisite: ACCT2212
Corequisite: None

ACCT 2211 Financial Accounting I 3 3/0/0
This course introduces students to the concepts and content underlying financial statements. Course content includes study of the accounting model, financial statements, merchandise accounting, internal controls and accounting for assets. The course will focus on using accounting information for decision making.
Prerequisite: None
Corequisite: None

ACCT 2212 Financial Accounting II 3 3/0/0
This course continues the introduction to the content and concepts underlying basic financial statements. Major content includes income measurement, accrual accounting, accounting theory, time-value of money, accounting for current and long-term liabilities, owner’s equity for sole proprietorships, partnerships and corporations, statement of cash flows and financial statement analysis.
Prerequisite: None
Corequisite: ACCT2211

ACCT 2213 Managerial Accounting 3 3/0/0
This course focuses on strategic decision-making related to cost analysis and cost management.
Prerequisite: ACCT2212 OR ACCT2211
Corequisite: None

ACCT 2215 Computerized Accounting Applications 3 2/1/0
This course is an introduction to computerized accounting applications and software used in the business environment. Topics include general ledger accounting, payroll procedures, accounts receivable, accounts payable, inventory and depreciation.
Prerequisite: ACCT1012 AND CPTR1104 OR ACCT1012 AND BUS1120 OR ACCT1012 AND CSCI1155 OR ACCT2211 AND CPTR1104 OR ACCT2211 AND BUS1120 OR ACCT2211
Corequisite: None

ACCT 2216 QuickBooks 3 2/1/0
This course is an introduction to computerized accounting applications and software used in the business environment. Topics include general ledger accounting, payroll procedures, accounts receivable, accounts payable, inventory and depreciation.
Prerequisite: BUS1120 AND ACCT2211 OR CPTR1104 AND ACCT2211
Corequisite: None

ACCT 2217 Microsoft Dynamics GP 3 2/1/0
This course covers the use of computerized accounting applications and software used in a mid-sized business environment.
Prerequisite: ACCT2211 AND CPTR1104
Corequisite: None

ACCT 2255 Income Tax-Individual 3 2/1/0
This course provides an explanation and interpretation of the Internal Revenue Code as applied to individual income tax returns. Topics covered include filing requirements, filing status, gross income and exclusions, business income and expenses, tax credits, and estimated taxes.
Prerequisite: None
Corequisite: None

ACCT 2256 Income Tax-Business 3 2/1/0
This course provides an explanation and interpretation of the Internal Revenue Code as applied to sole proprietorships, partnerships and corporations. Topics include business income, expenses, business tax credits, withholding and payment of established estate and trust tax issues.
Prerequisite: ACCT2255
Corequisite: None

ACCT 2291 Volunteer Income Tax Assistance 1 0/1/0
This course prepares students for preparation of federal and state income tax returns for individuals. The emphasis is on form preparation with the use of computerized tax preparation software.
Prerequisite: ACCT2255
Corequisite: None

ACCT 2295 Certified Bookkeeper Review Course 3 3/0/0
This course is designed to prepare students to take and pass the national Certified Bookkeeper examination. In order to obtain the Certified Bookkeeper designation conferred by the American Institute of Professional Bookkeepers (AIPB), the course content will include adjustments and error correction, payroll and depreciation, inventory and internal controls.
Prerequisite: ACCT2211
Corequisite: None

ACCT 2620 Intermediate Accounting I 4 3/1/0
This course is a comprehensive study of accounting theory and concepts with analysis of the influence on financial accounting by various boards, associations and governmental agencies. Topics may include the income statement, balance sheet, statement of cash flows, and various asset, liability and equity sections.
Prerequisite: ACCT2212
Corequisite: None

ACCT 2622 Intermediate Accounting II 4 3/1/0
This course is the continuation of a comprehensive study of accounting theory and concepts with an analysis of the influence on financial accounting by various boards, associations and governmental agencies. Topics include the income statement, balance sheet, statement of cash flows, and various asset, liability and equity sections.
Prerequisite: ACCT2620
Corequisite: None

ACCT 2630 Fund/Nonprofit Accounting 3 2/1/0
This course focuses on the fundamentals of fund/nonprofit accounting. It prepares students to apply basic governmental accounting principles and prepare financial statements for fund/nonprofit organizations.
Prerequisite: ACCT2212
Corequisite: None

ACCT 2640 Accounting Internship 1-4 None
This course provides students with actual work experience in accounting careers. Student is responsible for obtaining accounting internship.
Prerequisite: None
Corequisite: None

ACCT 2642 Accounting Internship 2 0/0/2
This course provides students with actual work experience in accounting careers. A competency-based internship plan is developed for each student.
Prerequisite: None
Corequisite: None

ACCT 2643 Accounting Internship 3 0/0/3
This course provides students with actual work experiences in accounting careers. A competency-based internship plan is developed for each student.
Prerequisite: None
Corequisite: None

ACCT 2644 Special Problems I 1 0/1/0
The intent of this course is to allow flexibility in providing learning experiences to meet the special needs of both the student and the college.
Prerequisite: None
Corequisite: None

ACCT 2645 Special Problems II 2 0/2/0
The intent of this course is to allow flexibility in providing learning experiences to meet the special needs of both the student and the college.
Prerequisite: None
Corequisite: None

ACCT 2800 Accreditation Council for Accountancy and Taxation Exam Review 3 2/1/0
This course is designed to prepare students for the Accreditation Council for Accountancy and Taxation (ACAT) exam. It also serves as a capstone course covering managerial accounting, business law and taxation.
Prerequisite: ACCT1101 AND ACCT2212 AND ACCT2213 AND ACCT2255 AND ACCT2620
Corequisite: ACCT2622

Medical Administrative Assistant

ADMM 1110 Medical Documentation Fundamentals 4 2/2/0
This course covers the fundamentals of health care documentation and medical record production, legal and ethical issues and responsibilities, test expansion software usage, utilization of medical references, and grammar and punctuation in health care-related communication.
Prerequisite: None
Corequisite: None

ADMM 1112 Speech Recognition Software 1 0/1/0
This course exposes students to speech (voice) recognition software. This type of software is used to create medical reports in health care facilities. Speech recognition software enables individuals to train a computer to recognize their voices and use that computer to create, edit and format documents.
Prerequisite: None
Corequisite: None

ADMM 1122 Medical Office Procedures 4 3/1/0
This course offers hands-on training in the tasks performed by medical administrative personnel in medical office settings. Topics include health care careers, legal and ethical responsibilities, medical appointments and calendars, professional communication
This course is a continuation of ADMM1152 Outpatient Coding. The student will apply components of this course. Practice examinations will be taken under timed conditions.

Prerequisite: None
Corequisite: None

ADMM 1140 Medical Language Applications 3 3/0/0
This course provides an in-depth exploration of medical terms used in pharmacology, radiology, laboratory and pathology, surgery, psychiatry, oncology, radiology, and related areas of occupational therapy. Spelling, proofreading and analysis of medical documentation will be reviewed along with a study of a variety of medical documents. A solid foundation of medical terminology is cultivated in this course.

Prerequisite: None
Corequisite: HLTH1116

ADMM 1150 Medical Billing/Insurance 4 3/1/0
This course provides information related to medical billing and health insurance. Topics covered include billing and statement preparation in the medical office, introduction to medical coding, types of health insurance coverage, insurance claim processes and related ethical and legal issues.

Prerequisite: None
Corequisite: HLTH1116

ADMM 1152 Outpatient Coding 4 3/1/0
This course is an introduction to medical coding and emphasizes coding in medical offices and other outpatient care facilities. Course topics include ICD-9 and ICD-10, CPT and HCPCS procedural coding, and legal and ethical issues related to outpatient coding practices.

Prerequisite: None
Corequisite: HLTH1116 Medical Terminology OR HLTH1108 Introduction to Anatomy and Physiology

ADMM 1160 Beginning Medical Transcription 3 1/2/0
This course covers the transcription of basic health care dictation, incorporating skills in the English language, technology, medical knowledge, proofreading, editing and research, while meeting progressively demanding accuracy standards.

Prerequisite: None
Corequisite: HLTH1116 AND ADMM1110

ADMM 1162 Intermediate Medical Transcription 3 1/2/0
This course is designed to teach the transcription of intermediate original health care dictation using intermediate proofreading, editing and research skills, while meeting progressively demanding accuracy and productivity standards.

Prerequisite: ADMM1160
Corequisite: None

ADMM 2122 Medical Office Management 3 3/0/0
This course examines the many responsibilities of a medical office manager. Whether in a small private practice or in a large group practice, a medical office manager must be aware of current regulations in the health care industry and how these regulations affect the operations of a health care organization. Office management, business operations, human resources, financial management and marketing for health care organizations are also explored.

Prerequisite: ADMM1122
Corequisite: None

ADMM 2150 Medicare Coding and Billing Applications 3 2/1/0
This course will teach the principles of Medicare coverage, billing, coding and payment for both inpatient and outpatient services. It will provide students with the knowledge and tools for developing the skills needed to submit accurate claims to Medicare, maintain compliance, prevent potential missed revenue and avoid unnecessary claim and coding denials.

Prerequisite: None
Corequisite: ADMM1152

ADMM 2154 Hospital Billing 2 1/1/0
This course covers billing processes related to the hospital claim form. Billing for inpatient, ambulatory surgery and hospital-based outpatient services is covered.

Prerequisite: ADMM1150 OR ADMM1152
Corequisite: None

ADMM 2234 Professional Development 2 2/0/0
This course covers the development of professional work behaviors and communication, analysis of the dynamics of the health care work environment and exploration of professional development and career opportunities relating to medical administrative/support staff.

Prerequisite: ADMM1122 Medical Office Procedures or ADMM1152 Medical Billing and Insurance or ADMM1162 Intermediate Medical Transcription
Corequisite: None

ADMM 2235 RMT Exam Review 1 1/0/0
This course prepares students to take the Registered Medical Transcriptionist (RMT) examination. Review of medical transcription rules and language will be integral components of this course. Practice examinations will be taken under timed conditions. The course will assist the student in determining a plan of study and continued learning in the area of medical language in preparation for the RMT certification examination.

Prerequisite: ADMM1162 Intermediate Medical Transcription
Corequisite: None

ADMM 2252 Advanced Coding 3 2/1/0
This course is a continuation of ADMM1152 Outpatient Coding. The student will apply coding knowledge by abstracting information from outpatient records for billing and insurance purposes. The course utilizes practical examples to reinforce coding principles and provides an introduction to computer applications related to coding.

Prerequisite: ADMM1152
Corequisite: None

ADMM2258 Certified Professional Coder Examination Review 1 1/0/0
This course prepares students to take the Certified Professional Coder (CPC) examination. Review of CPT, ICD and HCPCS II coding will be an integral part of this course. Practice examinations will be taken under timed conditions. The course assists the student in establishing a personal plan for continued development in preparation for the certification examination.

Prerequisite: None
Corequisite: None

ADMM2260 Certified Professional Coder - Hospital Examination Review 1 1/0/0
This course prepares students to take the Certified Professional Coder - Hospital (CPC-H) examination. Review of CPT, ICD and HCPCS II coding will be an integral part of this course. Practice examinations will be taken under timed conditions. The course assists the student in establishing a personal plan for continued development in preparation for the certification examination.

Prerequisite: ADMM2252
Corequisite: None

ADMM2268 Advanced Medical Transcription 3 1/2/0
This course covers transcription of advanced original health care dictation using advanced proofreading, editing and research skills, while meeting progressively demanding accuracy and productivity standards.

Prerequisite: ADMM1162
Corequisite: None

ADMM2270 Medical Office Simulation 2 1/1/0
This course is a capstone experience for students enrolled in a medical administrative program. Medical office responsibilities such as appointment scheduling, registration, health information management, and billing and financial operations are included in this project-based course. This course should be taken in the last semester of the program. After graduation as students will employ skills mastered over the course of their program enrollment. Students will develop 10-key skills necessary for billing and insurance practices in a medical facility.

Prerequisite: ADMM1122
Corequisite: None

ADMM2272 Medical Transcription Practicum 3 0/3/0
This course provides an office-simulation setting to give students experience in performing medical transcription on all levels of reports, multiple report types and multiple specialties. The student will apply all previously learned skills in utilizing references and word expansion techniques.

Prerequisite: ADMM1162
Corequisite: None

ADMM2276 Evaluation and Management Coding Practices 3 2/1/0
This course will teach students to appropriately assign evaluation and management codes based on physician documentation. Students will abstract information from health care documentation and assign appropriate levels of service.

Prerequisite: ADMM1152
Corequisite: None

ADMM2290 Medical Administrative Internship 3 0/0/3
This course provides the student with practical occupational experience in a health care-related facility. Each internship is an individualized experience. Each student prepares a training plan in conjunction with the training site to provide guided experiences related to the skills and knowledge acquired in the medical administrative programs.

Prerequisite: None
Corequisite: None

ADMM2292 Medical Transcription Internship 3 0/0/3
This course provides the student with practical occupational experience in a health care-related facility. Each internship is an individualized experience. Each student prepares a training plan in conjunction with the training site to provide guided experiences related to the skills and knowledge acquired in the medical transcription field.

Prerequisite: ADMM2268
Corequisite: None

Administrative Support

ADMS 90 Basic Keyboarding 1 0/1/0
This course develops basic keyboarding techniques through the use of the computer. Emphasis is on touch keyboarding alphabetic, numeric, punctuation, function and service keys. Computer operating techniques and skill developments are included. Formatting and proofreading skills are introduced.

Prerequisite: None
Corequisite: None
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<td>ADMS 1300</td>
<td>Word Processing/Advanced Word Processing 4 2/2/0</td>
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| Course provides students with an in-depth understanding of the word processing techniques needed to facilitate the production, documentation, storage and relay of information. This course will stress increased proficiency in the computer production of a variety of business documents. Students will also work with more complicated projects that incorporate many of the upper-level skills required in the advanced portion of this course.
Prerequisite: None
Corequisite: None

| ADMS 2124 | Computer Technology Information 3 2/1/0 |    |            |
| Corequisite: None
Course provides instruction on advanced microcomputer techniques. Topics include file transfer options, malicious programs, software management, networking and security, data communications and software evaluation, selection and installation. The investigation of new technologies and future trends in technologies will also be covered in this course.
Prerequisite: None
Corequisite: None

| ADMS 2202 | Advanced Word Processing 3 2/1/0 |    |            |
| Corequisite: None
This course will provide students who have attained a basic understanding of word processing software with a more in-depth knowledge of the product. Students will work with more complicated projects that incorporate many of the upper-level skills required at this level.
Prerequisite: ADMS1100

| ADMS 2205 | Advanced Word Processing 0/1/0 |    |            |
| Corequisite: None
This course provides students with an in-depth understanding of advanced word processing techniques needed to facilitate the production, documentation, storage and relay of information. The course will stress increased proficiency in the computer production of a variety of business documents. Students will also work with more complicated projects that incorporate many of the upper-level skills required at this level.
Prerequisite: ADMS1100

| ADMS 2212 | Integrated Office Software Applications 3 2/1/0 |    |            |
| Corequisite: None
This course is designed to enhance and reinforce software skills through project-based activities by extensive use of integrating applications using word processing, spreadsheets, databases, presentations, media development and basic Web page development for both actual and simulated business applications. This course will improve Internet search skills, develop teamwork and enhance critical-thinking and problem-solving skills as will be experienced in the office setting.
Prerequisite: ADMS1130 OR CPTR1104
Corequisite: None

| ADMS 2216 | Business Communications II 3 2/1/0 |    |            |
| Corequisite: None
This course is designed to advance the student's knowledge of formatting and editing techniques for business writing. It will provide an in-depth concentration on reviewing and/or further development of memos, letters and a wide variety of other business documents, as well as a review of ongoing practical applications of grammar, word and language mechanics. This course will also advance the student's knowledge in proofreading, editing and revising techniques for business writing in diverse business situations. Teamwork and critical thinking skills will also be included in this course for collaborative and individual writing.
Prerequisite: ADMS1116
Corequisite: None

| ADMS 2218 | Presentation Appl (PPI) 1 0/1/0 |    |            |
| Corequisite: None
This course covers applications of presentation software using the personal computer. Topics include custom formatting, animation, hyperlinks, Web pages, linking and embedding objects, and interactive presentations.
Prerequisite: None
Corequisite: None

| ADMS 2222 | Adv Desktop Publishing 3 1/2/0 |    |            |
| Corequisite: None
This course expands on the concepts and applications developed in the introductory desktop publishing class. The student will develop advanced skills in all aspects of desktop publishing, including the development of Web pages.
Prerequisite: ADMS1112
Corequisite: None

| ADMS 2240 | Internship 3 0/0/3 |    |            |
| Corequisite: None
This course is designed to provide students with a purposeful occupational experience in the administrative support careers field. Each internship is an individualized experience. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program.
Prerequisite: None
Corequisite: None

| ADMT 1173 | Microsoft Office Access Certification 1 0/1/0 |    |            |
| Corequisite: None
This course prepares participants to sit for the Microsoft Office Access MCAS (Microsoft Certified Application Specialist) certification. Class outcomes are aligned with certification objectives. Exam objectives are categories of examination tasks identified by subject-matter experts that certify an ability to productively use Microsoft Office programs. These categories are organized into skill sets representing the more basic functions of each Office program.
Prerequisite: CPTR1104
Corequisite: None

| ADMT 1174 | Microsoft Office PowerPoint Certification 1 0/1/0 |    |            |
| Corequisite: None
This course prepares participants to sit for the Microsoft PowerPoint certification (Microsoft Office certification). Class outcomes are aligned with certification objectives. Exam objectives are categories of examination tasks identified by subject-matter experts that certify an ability to productively use Microsoft Office programs.
Prerequisite: CPTR1104
Corequisite: None

| ADMT 2110 | Topics in Administrative Management Technology 1 0/1/0 |    |            |
| Corequisite: None
The goal of this course is to provide students with a range of topics in the career field of the administrative professional. Topics will vary each semester and could range from office technology trends to soft skills to employment trends. Course may be repeated for credit with a change in subtitle.
Prerequisite: Permission of Instructor
Corequisite: None

| ADMT 2222 | Event Planning 2 2/0/0 |    |            |
| Corequisite: None
This course explores the principles and practices involved in planning and administrating a special business event. Topics will include differentiating the various types of business events, analyzing the process and procedures necessary to plan an event, identifying various resources needed to organize an event and venue selection criteria.
Prerequisite: None
Corequisite: None

| ADMT 2224 | Applied Event Management 1 0/1/0 |    |            |
| Corequisite: None
Students in this course will apply classroom and textbook principles by collaborating with other students and faculty to plan, promote and execute an authentic event on campus, working with area businesses and organizations. This course is a continuation of ADMT2222.
Prerequisite: ADMT2222
Corequisite: None

| ADMT 2226 | Administrative Project Management 3 2/1/0 |    |            |
| Corequisite: None
Project management is a powerful set of tools and practices that provides a systematic approach to planning, organizing, controlling and leading a project to successful completion. This course guides students through a step-by-step process for managing projects from the initial planning stage to final completion and evaluation. Successful implementation of project management processes is dependent on developed interpersonal skills. Therefore, this course also compares and contrasts project management and self-management skills by reviewing the discipline of emotional intelligence.
Prerequisite: CPTR1104
Corequisite: None

| ADMT 2300 | Office Graphics and Presentations 3 2/1/0 |    |            |
| Corequisite: None
This course is designed to provide the student with the design and layout techniques of available software applications needed to produce business publications and visual presentations. Emphasis is on available software tools, presentation options and design, as well as presentation considerations of the target audience. Upon completion, the student should be able to demonstrate the ability to design and produce business presentations and publications.
Prerequisite: CPTR1104
Corequisite: None

| ADMT 2600 | Trends in Office Technology 3 2/1/0 |    |            |
| Corequisite: None
This course is designed to address trends in the administrative professional industry, with emphasis on the use of office technology. Topics will vary but could include trends in electronic mail, multimedia interaction, presentation hardware and software, and Internet technologies and applications relevant to the business world. Upon completion, the student should be able to demonstrate an awareness of current technological applications for the modern office.
Prerequisite: CPTR1104
Corequisite: None

| ADMT 2900 | Administrative Professional Internship 1-3 None |    |            |
| Corequisite: Instructor approval
This course provides students with actual work experience in an administrative professional career. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. Each internship is an individualized experience. Therefore, this course offers a flexible, variable credit experience. The student may choose from 1, 2 or 3 credits, depending on the number of hours pre-arranged with the internship site supervisor. Each credit will require 40 hours of on-the-job learning.
Prerequisite: Instructor approval
Corequisite: None

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Minnesota State Community and Technical College
Course Catalog 2013-2014
Automotive Service Technology

AMST 1102 Alignment and Suspension I 3 1/2/0

This course focuses on the various types of suspension systems currently in use. Systems covered include McPherson strut, leaf spring, coil spring and torsion bar. Also covered will be caster, camber and toe, and other alignment angles; wheel balance using the latest road force technology; and operation, diagnosis and repair of manual and power steering systems.

Prerequisite: None
Corequisite: TRNS1102

AMST 1105 Brakes I 1/2/0

This course teaches the basic principles of disc and drum brakes, hydraulic systems fundamentals, parking brakes and power assist units. Emphasis is placed on operation, diagnosis and repair of various types of brake systems. Basic operation of anti-lock brake systems will also be covered.

Prerequisite: None
Corequisite: TRNS1102

AMST 1109 Starting and Charging 3 2/1/0

This course involves the understanding and service of batteries, charging systems and starting systems. The student will perform tests on these items using bench testing and vehicle testing equipment, as well as weighing the cost of replacement.

Prerequisite: None
Corequisite: TRNS1102

AMST 1111 Automotive Electronics 3 2/1/0

This course involves understanding Ohm’s law, multimeter usage, schematic reading, operation of electrical circuits and electronic components. The student will perform electrical tests and repairs on training boards as well as various vehicles. This course is a Prerequisite: for all second-year automotive courses.

Prerequisite: None
Corequisite: TRNS1102

AMST 1114 Basic Maintenance Service 1 1/0/0

This course will provide the introduction to basic vehicle maintenance. Included will be identification of service points and procedures required for maintenance. Fluid types, brake inspection, tire rotation and service information will be addressed.

Prerequisite: None
Corequisite: None

AMST 1116 General Automotive Service 5 3/2/0

This course will involve concepts and hands-on application in multiple areas of auto repair. Included will be small areas of brakes, electrical, starting and charging systems, and tune-up. This course provides basic repair knowledge of service that is performed in a maintenance environment.

Prerequisite: None
Corequisite: None

AMST 1122 Engines I 3 2/1/0

This course covers the fundamentals of internal combustion engine operation, repair and maintenance. The procedures for removal, replacement, diagnosing, rebuilding and assembly are presented. Proper tool and equipment application and failure diagnosis are emphasized.

Prerequisite: None
Corequisite: TRNS1102

AMST 1126 Engines II 3 2/1/0

This course covers the disassembly, diagnosis, measurement, service, assembly and adjustment of engines and components. Cylinder heads, valve trains, cylinder block assemblies, cooling and lubrication systems are thoroughly covered.

Prerequisite: None
Corequisite: None

AMST 1132 Drive Trains I 3 2/1/0

This course covers service and theory of operation with clutch, manual transmission, drive shaft and drive axle systems. Service will involve removal, disassembly, repair, reassembly and adjustment of the mentioned items. Diagnostics and repair of noise vibration and harshness in the drive train system will also be performed.

Prerequisite: None
Corequisite: None

AMST 1136 Drive Trains II 3 2/1/0

This course covers drive axles, drive shafts, front and rear wheel bearings and analysis of vehicle noise vibration and harshness. Theory, service skills and diagnosis are covered on bench and in-vehicle units. Drive line phasing, alignment and balance are covered.

Prerequisite: None
Corequisite: None

AMST 2201 Alignment and Suspension II 3 2/1/0

This is a continuation course from the Alignment and Suspension I class. The student will perform repairs and adjustments pertaining to wheel alignments and work with electrical sensors and controls affecting a vehicle’s stability control. Diagnostics and repair of steering columns and supplemental restraints also will be covered.

Prerequisite: None
Corequisite: None

AMST 2206 Body Electrical/Mechanical I 3 2/1/0

This course teaches diagnosis and repair of interior and exterior lighting, safety devices, comfort systems, and door, window and seat control systems. The student will use wiring diagrams to pinpoint body electrical concerns. Window, door and seat controls and service will also be performed. Common vehicle accessories will be addressed.

Prerequisite: None
Corequisite: TRNS1102

AMST 2220 Body Elec/Mechanical II 3 1/2/0

This course focuses on computer-controlled body components and safety systems.

Prerequisite: None
Corequisite: None

AMST 2221 Exhaust Analysis Fuel Sys 3 2/1/0

This course will cover the various emission devices used on an automobile as well as the fuel delivery to maintain an efficient operating engine. Items covered will be PCV systems, EGR systems, air injection systems, evaporative systems, catalytic converters and fuel injection controls. Students will diagnose and repair problems using a variety of equipment on project vehicles.

Prerequisite: None
Corequisite: None

AMST 2224 Electronic Powertrain Control I 3 2/1/0

This course will cover the introduction to vehicle computer systems and related components that assist in the management of engine fuel, ignition and emission systems. Sensor inputs, management operation and operational commands are addressed.

Prerequisite: None
Corequisite: None

AMST 2228 Electronic Powertrain Control II 3 1/2/0

This course will involve concepts and application in the design, development and assembly of automotive computer systems. Students will gain hands-on practice with ECU repair and testing, basic communication and data flow analysis.

Prerequisite: None
Corequisite: None

AMST 2241 Ignition Systems 3 2/1/0

This course will cover the operation of the ignition system. Students will learn how various ignition systems work so they will have the understanding to diagnose and repair ignition systems.

Prerequisite: None
Corequisite: None

AMST 2223 Automatic Transmission I 3 2/1/0

This course involves the principles of the many systems combined into an automatic transmission. The student will study planetary gearing, clutch operation, gear application and one-way clutching as it pertains to power flow for the transmission. The student will disassemble and make necessary adjustments and repairs on a variety of transmissions. The student will perform transmission fluid and filter changes where applicable.

Prerequisite: AMST111 AND TRNS1102
Corequisite: None

AMST 2227 Automatic Transmissions II 3 1/2/0

This course will cover the many procedures used in transmission diagnosis, vehicle repair sequences, scan tool data interpretation and diagnosis, transmission removal, installation and adjustment. Transmission cooling system diagnosis and service are also covered.

Prerequisite: None
Corequisite: AMST2233

AMST 2240 Heating Ventilation and Air Conditioning 3 1/2/0

This course teaches the principles of heating, air conditioning and ventilation systems. Types and designs, component variations, diagnosis, testing and repair are studied and practiced on functioning units. System performance, recovery, evacuation and recharging are also covered in depth.

Prerequisite: None
Corequisite: TRNS1102

AMST 2292 Internship 1 0/0/1

This course is designed by the student and advisor in cooperation with industry to provide an on-the-job training experience for the student. The student will prepare an internship plan consistent with 45 hours of internship time. The plan should reflect the internship site, student knowledge, prior coursework and skills. This course will provide the student with an opportunity to integrate the skills, knowledge and concepts gained in previous coursework into an occupational experience.

Prerequisite: TRNS1102
Corequisite: None
### Anthropology

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 1100</td>
<td>Introduction to Anthropology</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>Meets MnTC Goal Areas 5 and 8. This course is a survey of human nature through time and around the world. It examines the physical nature of our species, archaeology, the study of cultural behavior and linguistic studies. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ANTH 1300</td>
<td>Cultural Anthropology</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>Meets MnTC Goal Areas 5 and 8. In this course students will gain an understanding of the major issues and theoretical approaches inherent to the study of human society and culture. Emphasis is placed on the origins, development and variation of cultures as well as the growing global interdependence of nations and peoples. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ANTH 1400</td>
<td>Physical Anthropology</td>
<td>3</td>
<td>3/0/0</td>
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<td></td>
<td>Meets MnTC Goal Areas 3 and 10. In this course students will gain an understanding of the bio-cultural evolution of prehistoric and modern cultures and the geographic, historical and cultural forces which explain human diversity. This course includes a lab-like experience. Prerequisite: None Corequisite: None</td>
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</table>

### Architectural Technology

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<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>ARCH 1122</td>
<td>Computer Aided Drafting for Architecture</td>
<td>4</td>
<td>2/2/0</td>
</tr>
<tr>
<td></td>
<td>This course covers the development of three-dimensional architectural modeling and documentation using AutoCAD for Architecture software. Emphasis is on creating and editing custom component styles. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ARCH 1126</td>
<td>Residential Project I</td>
<td>3</td>
<td>1/2/0</td>
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<tr>
<td></td>
<td>This course covers the design development and documentation of single-family living. Students will be introduced to residential design styles as well as proper documentation methods. Prerequisite: ENGR1126 AND ENGR1134 Corequisite: None</td>
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<tr>
<td>ARCH 2218</td>
<td>Architectural Internship</td>
<td>3</td>
<td>0/0/3</td>
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<td>This course provides the student with an occupational experience in the architectural technology field. Each internship is an individualized experience. Prerequisite: ARCH1126 Corequisite: None</td>
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<tr>
<td>ARCH 2220</td>
<td>Specification Writing for Construction</td>
<td>3</td>
<td>1/2/0</td>
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<td>This course covers the implementation and inclusion of specifications, construction materials and finishes into a set of construction documents. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ARCH 2226</td>
<td>Residential Project II</td>
<td>4</td>
<td>1/3/0</td>
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<tr>
<td></td>
<td>This course introduces building design and construction requirements for multi-family housing. The course covers the processes for the selection of building materials and their integration into construction documents. Prerequisite: ARCH1122 AND ARCH1126 Corequisite: None</td>
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<tr>
<td>ARCH 2230</td>
<td>Mechanical and Electrical Integration</td>
<td>2</td>
<td>1/1/0</td>
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<tr>
<td></td>
<td>This course reviews the examination of mechanical, plumbing and electrical systems in buildings. Content includes analysis of plumbing and heating, ventilation and air conditioning (HVAC) systems, and power and lighting systems. Prerequisite: ARCH1122 AND ARCH1126 Corequisite: None</td>
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<tr>
<td>ARCH 2232</td>
<td>Civil and Structural Integration</td>
<td>3</td>
<td>2/1/0</td>
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<td></td>
<td>This course will review the incorporation of civil and structural engineering drawings in coordination with building systems. Content will include analysis of civil and structural drawings and their relationship to commercial and residential building types. Prerequisite: ARCH2230 Corequisite: None</td>
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<tr>
<td>ARCH 2236</td>
<td>Architectural Presentation</td>
<td>2</td>
<td>0/2/0</td>
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<td></td>
<td>Students in this course will develop design schematics and a set of presentation drawings for a commercial project. Emphasis is on verbal and visual presentation techniques. Prerequisite: ARCH1122 AND ARCH1126 Corequisite: None</td>
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<tr>
<td>ARCH 2244</td>
<td>Commercial Projects</td>
<td>4</td>
<td>1/3/0</td>
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<td></td>
<td>This course covers the construction document process for commercial building design while having the student complete a self-guided capstone project. Content will include final detailing, scheduling and sheet set layout from a given design developed project. Prerequisite: ARCH2226 AND ARCH2240 Corequisite: None</td>
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### Art

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<tr>
<th>Course #</th>
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</thead>
<tbody>
<tr>
<td>ART 1107</td>
<td>Foundations of Art, 2-D</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td></td>
<td>Meets MnTC Goal Area 6F. This course is an introduction to creative thinking, interpretation and self-expression. Students will explore basic two-dimensional elements and principles through the use of various media, tools, materials and processes. Color theory will be emphasized. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1108</td>
<td>Foundations of Art, 3-D</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td></td>
<td>Meets MnTC Goal Area 6F. Through this course, students are introduced to basic three-dimensional concepts as well as a variety of materials and technical processes. Students will create three-dimensional designs that explore form and space. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1110</td>
<td>Intro to Art</td>
<td>3</td>
<td>3/0/0</td>
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<td></td>
<td>Meets MnTC Goal Area 6F. This course provides an introduction to the elements and principals of visual arts and to the creative process. Students are encouraged to use a variety of media in drawing, painting and sculpture. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1111</td>
<td>Drawing I</td>
<td>3</td>
<td>3/0/0</td>
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<td></td>
<td>Meets MnTC Goal Area 6F. This course introduces students to the basic drawing media, techniques and traditions of drawing. Students are exposed to the work of artists, draftsmen and illustrators and are subsequently guided through a wide variety of drawing experiences and applications. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1112</td>
<td>Painting I</td>
<td>3</td>
<td>3/0/0</td>
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<td></td>
<td>Meets MnTC Goal Area 6F. Students examine historical and contemporary painting approaches and directions in their beginning experiences with acrylic and/or oil paint, including the study of basic concepts, techniques, formal issues, technology, imagery, color theory and pigment theory. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1117</td>
<td>Printmaking I</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td></td>
<td>Meets MnTC Goal Areas 2 and 6F. Students will create original works in a variety of printmaking techniques with emphasis on relief, monotype/monotype and serigraphy. Prerequisite: None Corequisite: None</td>
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<tr>
<td>ART 1118</td>
<td>Watercolor I</td>
<td>3</td>
<td>3/0/0</td>
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<td></td>
<td>Meets MnTC Goal Area 6F. This course will introduce students to the fundamental principles, techniques and materials of watercolor media. Students will explore color and design concepts, including composition and the elements of art; traditional and experimental approaches with watercolor media; the fundamentals of the critique process; and traditional and contemporary artworks from the visual canon. Personal expression and visual and critical problem solving are major components of this course. Prerequisite: None Corequisite: None</td>
<td></td>
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</tr>
</tbody>
</table>
### ART 1121 World of Art I
3  3/0/0
Meets MnTC Goal Areas 6 and 8. This course is a survey of architecture, painting and sculpture and their historical and social contexts. Specific periods from prehistoric through the Middle Ages will be introduced.

**Prerequisite:** None

**Corequisite:** None

### ART 1122 World of Art II
3  3/0/0
Meets MnTC Goal Areas 6 and 8. This introductory course gives students a deeper appreciation and knowledge of Western art and the cultures that created it. This course focuses on the fascinating changes that occurred in the Italian Renaissance and continues through to modern artists and influences of the 20th century.

**Prerequisite:** None

**Corequisite:** None

### ART 1123 Global Art History: Asian, Islamic, African, Mesoamerican
Meets MnTC Goal Areas 6 and 2. Throughout the semester students will explore the influences and philosophies that have impacted art in regions outside of the Western world. Topics vary but will include the origins and historic development of art in African, Asian, Islamic and Mesoamerican cultures.

**Prerequisite:** None

**Corequisite:** None

### ART 1124 American Art
3  3/0/0
Meets MnTC Goal Areas 6 and 7. This course explores the great variety and depth of North American art. Native American, colonial, Latino and contemporary art are the focus of the course.

**Prerequisite:** None

**Corequisite:** None

### ART 1140 Handbuilt Ceramics
3  3/0/0
Meets MnTC Goal Area 6F. This course will develop the skills of ceramics, focusing on handbuilding. Using the methods of coil, pinching and slab building, the students will make a variety of forms, ranging from functional to sculptural. Students will create finished products, including the use of glaze and other finishes. The nature of handbuilding techniques provides a more immediate opportunity to express creativity.

**Prerequisite:** None

**Corequisite:** None

### ART 1141 Ceramics I
3  2/1/0
Meets MnTC Goal Area 6F. Students learn about pottery tools and their uses, construction methods such as coil and slabs, aspects of pottery form and design, formulation and application of glazes, and operation of a ceramic kiln. The course is designed for the novice.

**Prerequisite:** None

**Corequisite:** None

### ART 2111 Drawing II
3  3/0/0
Meets MnTC Goal Areas 2 and 6F. This course focuses on student use and understanding of a variety of drawing media such as pencil, pastel, pen and ink, and charcoal. Advanced observation and color is emphasized.

**Prerequisite:** ART1111

**Corequisite:** None

### ART 2112 Painting II
3  3/0/0
Meets MnTC Goal Areas 2 and 6F. Students research and examine historical and contemporary painting approaches and directions informing their social, historical, philosophical, artistic, etc. choices regarding subject matter. Self-generated subject matter and research, intermediate-level use of composition, color theory and technique are emphasized.

**Prerequisite:** ART1112

**Corequisite:** None

### ART 2114 Photographic Art I
3  3/0/0
Meets MnTC Goal Areas 2 and 6F. This course introduces students to photographic equipment, materials, processes and philosophies while examining photography and its role in contemporary culture with focus on artistic content. Traditional photographic processes, digital photographic processes and alternative printing and presentation processes are explored, and artistic rationale and execution are examined.

**Prerequisite:** None

**Corequisite:** None

### ART 2241 Advanced Ceramics
3  2/1/0
Meets MnTC Goal Area 6F. This course will build on the skills developed in Ceramics I with emphasis on wheel throwing, glazing and firing techniques.

**Prerequisite:** ART1141

**Corequisite:** None

### ART 2250 Art Mentor Experience
2  0/0/2
This course gives students the opportunity to work side-by-side with professional artists. Students will select an artist mentor based on the media and techniques the student chooses to explore. Students will meet with an art faculty adviser to select a mentor and to create a plan of study for the semester. Registration for this course is by instructor permission only.

**Prerequisite:** ART1107 AND ART1111

**Corequisite:** None

### ART 2260 Art, Portfolio Design and Professional Development 1
0/0/1
Meets MnTC Goal Area 6F. Art students will learn how to create an electronic portfolio, showcasing their work for transfer or professional purposes. Students will also explore ways to promote themselves as artists using the latest technology.

**Prerequisite:** None

**Corequisite:** None

### ART 2261 Art, Portfolio Design and Professional Development 2
1/0/1
Meets MnTC Goal Area 6F. Art students will create an electronic portfolio of their work, write professional documents, explore ways to promote themselves as artists using the latest technology, research exhibition opportunities and explore and experience non-art-production professions in the field of art.

**Prerequisite:** None

**Corequisite:** None

### American Sign Language

#### ASL 1111 American Sign Language and Deaf Culture I
3  3/0/0
This course covers the beginning fundamental principles of American Sign Language (ASL) and introduces information about the Deaf Community and Deaf Culture. The course will familiarize students with basic ASL vocabulary and grammar, including hand shapes, body movements and facial expressions to convey meaning.

**Prerequisite:** DVCM0006 AND ENGL1050 OR ENGL1101

**Corequisite:** None

#### ASL 1112 American Sign Language and Deaf Culture II
3  3/0/0
This course covers the fundamental principles of Level II American Sign Language (ASL) and introduces more advanced information about the Deaf Community and Deaf Culture. This course will focus on expanding knowledge and usage of ASL vocabulary including fingerspelling, numbers and classifiers, and continues with more complex ASL grammar and sentence structure.

**Prerequisite:** ASL1111

**Corequisite:** None

#### ASL 1113 American Sign Language and Deaf Culture III
4  4/0/0
This course is designed to offer continued study of American Sign Language (ASL) and Deaf Culture. Emphasis will be placed on improvements in speed and fluency along with reinforcement of appropriate grammar usage and conversational skills. This course will also introduce deaf idioms and their use within Deaf Culture.

**Prerequisite:** ASL1112

**Corequisite:** None

#### ASL 1114 American Sign Language and Deaf Culture IV
4  4/0/0
This course focuses upon the grammatical features of ASL and vocabulary expansion. Content of this course will focus on sentence construction, inflecting verbs and classifiers. Fluency and accuracy of finger spelling will continue to be developed as well as the use of lexicalized signs and numbering.

**Prerequisite:** ASL1113

**Corequisite:** None

#### ASL 1115 American Sign Language and Deaf Culture V
3  3/0/0
This course focuses on advanced vocabulary, communicative functions and language techniques for effective expression of meaning and context of ASL.

**Prerequisite:** ASL1114 AND Grade of C or better in ASL1114

**Corequisite:** None

#### ASL 2000 Advanced Fingerspelling, Numbers, and Classifiers
2  2/0/0
This course focuses on enhancement of receptive and expressive fingerspelling and number skills. It also includes the fundamentals of American Sign Language classifiers.

**Prerequisite:** ASL1114 AND Grade of C or better in ASL1114

**Corequisite:** None

#### ASL 2100 Linguistics of American Sign Language
3  3/0/0
This is an introduction to the linguistic structure of American Sign Language. This course includes linguistic fields, communication systems, syntax, phonology and grammar. This course also contains other linguistic elements unique to spatially- and visually-based languages such as morphemes, phonemes, semantics and pragmatics.

**Prerequisite:** ASL1114 AND Grade of C or better in ASL1114

**Corequisite:** None

### Quality

#### ATEC 2238 Quality Planning and Control
3  3/0/0
This is an introductory course surveying quality-related topics from both qualitative and quantitative points of view. The course is structured to address the quality system, the management system and the technical system approaches to quality planning and management. Topics related to people, leadership, application, implementation, data collection and analysis and quality standards are included in this course.

**Prerequisite:** None

**Corequisite:** None

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**NOTE:** All courses listed in this document are subject to change. Please consult the official course catalog for the most current information.
### Biological Sciences

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL 1102</td>
<td>Introduction to Horticulture</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. The course is an introductory study of green plants and their growth. The course will explore basic plant anatomy, morphology, physiology, taxonomy, pathology, propagation, soil science and plant nutrition, and ethnobotany. This course includes both lecture and lab.</td>
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<tr>
<td>Prerequisite:</td>
<td>College-level reading skills.</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>BIOL 1104</td>
<td>Biology of Human Concerns</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 2 and 3. This course explores issues related to human biology with reference to genetics, nutrition, health, disease or other contemporary issues. Elements of molecular, cell and organismal biology are included as needed to understand the topics studied. This course is intended for non-science majors and consists of lecture and laboratory components.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>BIOL 1107</td>
<td>Environmental Science Issues</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>Meets MnTC Goal Areas 2, 3 and 10. This course involves the discussion and study of ecosystems, biodiversity, human adaptations to and modifications of the ecosystems and current environmental problems and their possible solutions. This course includes lab-like experiences including an ecosystem observation and data analysis. This course is for non-science majors.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>BIOL 1111</td>
<td>Introduction to Biotechnology</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>Meets MnTC Goal Area 3. This course is designed to acquaint students with the field of biotechnology including historical development, current technologies and future trends. An overview of the molecular and genetic principles and processes used to manipulate living organisms and their products will be presented, as well as forensic, medical, agricultural and industrial applications. The course will also examine the ethical implications of biotechnology and genetic engineering. Laboratory simulations and other lab-like experiences provide opportunities for students to perform techniques common in the field, gather and analyze experimental data and troubleshoot procedures.</td>
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<tr>
<td>Prerequisite:</td>
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<tr>
<td>Corequisite:</td>
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<tr>
<td>BIOL 1112</td>
<td>General Biology I</td>
<td>4</td>
<td>3/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 2 and 3. This course is an introduction to the structure and function of living systems with an emphasis on cellular and molecular biology. Fundamental concepts include the chemical basis of life, cell structure and function, cell division, metabolism, classical and molecular genetics, and biotechnology. This course includes a laboratory component incorporating experimental design, microscopic work, and cellular and molecular biology techniques.</td>
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<tr>
<td>Prerequisite:</td>
<td>Assessment into ENGL 1101 or college-level writing equivalent.</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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<tr>
<td>BIOL 1123</td>
<td>General Biology II</td>
<td>4</td>
<td>3/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 3 and 10. This course is an introduction to living organisms, emphasizing evolution, biological diversity and ecology. Topics will include mechanisms of evolution, classification and diversity of life, structure and function of organisms, and interaction of organisms at all levels of an ecosystem. This course includes a laboratory component incorporating field activities, microscopic work, dissection and plant systems. Along with BIOL1123, this course is part of a two-semester sequence of general biology that can be taken in either order.</td>
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<tr>
<td>Prerequisite:</td>
<td>Assessment into ENGL 1101 or college-level writing equivalent.</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>BIOL 1125</td>
<td>Basic Immunology</td>
<td>2</td>
<td>1/1/0</td>
</tr>
<tr>
<td>This course is intended for Medical Laboratory Technician students and other health professionals. Topics covered include principles of antigens, antibodies and their combination in health, disease and serological laboratory procedures. The course discusses hepatitis, AIDS, lupus, rheumatoid arthritis, Lyme disease, syphilis, infectious mononucleosis and streptococcal infections.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1152</td>
<td>Food Science</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. This course addresses the use of public policy and food technology to reduce or control risks in our food supply. An overview of microbiological, chemical and environmental risks will be presented, as well as government and industry controls used to ensure food safety. This course includes laboratory components. Students will use common laboratory techniques to identify select food-borne pathogens and utilize principles of risk assessment and hazard analysis to perform a disease outbreak investigation.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>BIOL 1161</td>
<td>Introduction to Freshwater Biology</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 3 and 10. This course introduces students to basic principles of freshwater biology. Topics include the origins and features of basins and channels, the aquatic environment, basic water chemistry, aquatic organisms and aquatic ecology. Class includes a lab.</td>
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<tr>
<td>Prerequisite:</td>
<td>Completion of ENGL0050 and ENGL0040 with a grade of C or higher OR ENGL005 with a grade of C or higher OR placement in ENGL1101</td>
<td></td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>BIOL 2101</td>
<td>General Ecology</td>
<td>4</td>
<td>3/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 3 and 10. This course provides a study of the structure and function of ecological systems, including an application of ecological principles to local and global environmental issues. Topics covered include energy flow, nutrient cycling, organization, ecological succession, population dynamics (including the population biology of species interactions and factors that influence and regulate population numbers) and linkages among species and ecosystem functions. Lecture is accompanied by laboratory and field exercises.</td>
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<tr>
<td>Prerequisite:</td>
<td>Completion of Math1020 or placement in a college-level math AND BIOL1111 AND BIOL1112</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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<tr>
<td>BIOL 2202</td>
<td>Principles of Nutrition</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Areas 2 and 3. This course is a study of the fundamental principles of nutrition. This course will cover food composition, digestion, absorption, metabolism, nutrients in the body and the requirements for nutrients in infancy, childhood, teen years, athletes, adults and the elderly. Also included are discussions about current trends in nutrition, the relationship of diet and disease, and cultural differences in dietary practices. Using the basic principles of nutrition, students will have a lab-like experience tracking, measuring, calculating and analyzing their diet and presenting the results in a written analytical report.</td>
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<tr>
<td>Prerequisite:</td>
<td>CHEM1100 OR CHEM1111 OR BIOL2260 OR BIOL2112 OR Instructor permission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>BIOL 2220</td>
<td>General Microbiology</td>
<td>4</td>
<td>3/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. This course provides an overview of the structure and function of microorganisms, including archaea, bacteria, viruses, fungi and protozoa. Students will examine the molecular diversity, genetics, physiology and ecology of these organisms in relation to microbial evolution, industrial and applied applications, and host-pathogen interactions. Lecture is accompanied by laboratory exercises, involving: asepptic technique, differential staining procedures, cultural and physical characteristics, biochemical testing, microbial control, microbiology of water and soil, and identification of unknown cultures.</td>
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<tr>
<td>Prerequisite:</td>
<td>BIOL1122</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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</tr>
<tr>
<td>BIOL 2240</td>
<td>Genetics</td>
<td>4</td>
<td>3/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. This course is a study of the basis of heredity with emphasis on modern molecular and classical Mendelian genetics. It is open to all students but is recommended for students majoring in biology and health-related areas. This course includes a laboratory which explores the fundamental techniques of genetic analysis.</td>
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<tr>
<td>Prerequisite:</td>
<td>CHEM1100 AND BIOL1112 OR CHEM1101 AND BIOL1112 OR CHEM1111 AND BIOL1112</td>
<td></td>
<td></td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 2260</td>
<td>Human Anatomy and Physiology I</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. This course is a comprehensive introductory overview of human anatomy and physiology includes basic fundamental concepts of cell biology, tissues and organs making up the integumentary, skeletal, muscular and nervous systems. It is the first of a two-semester sequence in which anatomy and physiology are studied with an emphasis on structure and functions of systems. This course contains a lab-like component.</td>
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<tr>
<td>Prerequisite:</td>
<td>Assessment into ENGL 1101 or college-level writing equivalent.</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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</tr>
<tr>
<td>BIOL 2261</td>
<td>Human Anatomy and Physiology I Lab</td>
<td>1</td>
<td>0/1/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3 when taken with BIOL 2260. This course is the laboratory component of a comprehensive introductory overview of human anatomy and physiology that includes basic fundamental concepts of cell biology, tissues and organs making up the integumentary, skeletal, muscular and nervous systems. This course is the first of a two-semester sequence in which anatomy and physiology are studied with an emphasis on structure and functions of systems.</td>
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<tr>
<td>Prerequisite:</td>
<td>Assessment into ENGL 1101 or college-level writing equivalent.</td>
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<tr>
<td>Corequisite:</td>
<td>BIOL 2260</td>
<td></td>
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</tr>
<tr>
<td>BIOL 2262</td>
<td>Human Anatomy and Physiology II</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>Meets MnTC Goal Area 3. This course is a continuation of Anatomy and Physiology I. Topics include the study of cells, tissues and organs making up the endocrine, cardiovascular, lymphatic and immune, respiratory, digestive, urinary and reproductive systems. Emphasis is on the structure and function of included systems. This course contains a lab-like component.</td>
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<tr>
<td>Prerequisite:</td>
<td>Assessment into ENGL 1101 or college-level writing equivalent AND BIOL2260 AND BIOL2261</td>
<td></td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>Course #</td>
<td>Course Title</td>
<td>CR</td>
<td>Lec/Lab/OJT</td>
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</tr>
<tr>
<td>BIOL 2263 Human Anatomy and Physiology III Lab</td>
<td>1</td>
<td>0/1/0</td>
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</tr>
</tbody>
</table>

Meets MnTC Goal Area 3. This course is designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized in the biotechnology industry. This course emphasizes technical skills development, record-keeping and communication skills, compliance with federal regulations, and conformity to good laboratory and good manufacturing practices (GLPs/GMPs). This course meets for one hour of lecture and four hours of laboratory each week.

Prerequisite: BIOT 2210
Corequisite: None

| BIOT 2220 Biotechnology Methods II             | 3   | 2/1/0      |

This course is the second in a two-semester sequence designed to train laboratory technicians in the fundamental technologies, procedures and processes utilized within the biotechnology industry. This course emphasizes technical skills development, record-keeping and communication skills, compliance with federal regulations, and conformity to good laboratory and good manufacturing practices (GLPs/GMPs). This course meets for one hour of lecture and four hours of laboratory each week.

Prerequisite: BIOT 2210
Corequisite: None

### Construction

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDG 1102 Construction Safety</td>
<td>1</td>
<td>1/0/0</td>
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</tbody>
</table>

This course provides students with an understanding of occupational safety practices, basic requirements, purpose and enforcement of general safety rules.

Prerequisite: None
Corequisite: None

| BLDG 1110 Principles of Residential and Commercial Construction | 3   | 1/0/0 |

Students work in small groups with industry specialists and education professionals. Students attend multiple classroom and lab activities where they learn safety requirements for construction environments, proper use of a variety of hand tools, applications of shop equipment, the residential and commercial building process, and small equipment operations. Students will participate in a speed interviewing exercise with industry experts and learn about occupational safety in the construction trades profession.

Prerequisite: Instructor approval
Corequisite: None

| BLDG 1114 Blueprint Reading I                   | 2   | 2/0/0      |

This course provides the student with a working knowledge of blueprints and specifications. The student gains an understanding of blueprints, then interprets and applies this knowledge to job situations.

Prerequisite: None
Corequisite: None

| BLDG 1120 Construction Estimating I             | 2   | 1/1/0      |

This course covers the mathematical procedures used in material estimating and completing quantity takeoffs for building projects.

Prerequisite: None
Corequisite: None

### Business Management

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 1112 Business Plan Development</td>
<td>2</td>
<td>1/1/0</td>
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</tr>
</tbody>
</table>

Students will have hands-on training in developing a business plan for their very own business idea. Financial statement analysis, risk management, business law and understanding the business environment will all become a part of the business plan.

Prerequisite: None
Corequisite: None

### Business

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 1120 Spreadsheet and Database Concepts</td>
<td>3</td>
<td>3/0/0</td>
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</tbody>
</table>

This course provides the student with in-depth coverage of a spreadsheet and a database management system as used in a business setting. Students should be familiar with Windows and word processing.

Prerequisite: None
Corequisite: None
COURSE DESCRIPTIONS

Course # Course Title CR Lec/Lab/OJT
BUS 1141 Introduction to Business 3 3/0/0
This course is designed to give the student an overview of the business and economic factors that sustain our American enterprise system. Topics included are economic systems and the foundations of American business, international business, fundamentals, management, forms of a business enterprise including franchises, human resources, management and consumer behavior, accounting, securities markets and the ethical and social responsibilities of business.
Prerequisite: None
Corequisite: None

BUS 1143 Office Procedures 3 3/0/0
This is a capstone course in office organization, business ethics and responsibilities of office workers. Emphasis is placed on decision-making ability and the exercise of good human behavior. The course will cover all aspects of the office, from behavior to technologies used. This course will also cover what it means to be a professional in any field. Two of the topics covered are group dynamics and looking like a professional.
Prerequisite: None
Corequisite: None

BUS 1146 Personal Finance 3 3/0/0
This course is an introduction to personal financial management and planning. Topics covered include key factors that affect personal income, budgeting, cash-flow management, use of credit and credit cards, planned borrowing, managing taxes and major expenditures including housing, automobiles, insurance and investments.
Prerequisite: None
Corequisite: None

BUS 1158 Free Market Enterprise 2 2/0/0
Students in Free Enterprise (SIFE) is an internationally recognized organization designed to educate students about how to ethically engage in the free enterprise system to serve the economic interests of individuals and communities. Through this course, students will develop and execute various free enterprise projects and present their results at a regional competition.
Prerequisite: Approval from SIFE advisor
Corequisite: None

BUS 1170 Intro to Agribusiness, 3 3/0/0
Food Systems and Global Agriculture
This course is an introduction to the economic environment of the agribusiness sectors of our economy. The course examines the role agriculture plays in the U.S. and global economies. Concepts to be examined include but are not limited to management of agribusiness, marketing of agribusiness, finance of agribusiness and government involvement in agriculture and agribusiness.
Prerequisite: None
Corequisite: None

BUS 1300 Financial Statement Analysis 3 3/0/0
This course covers principles used in analyzing financial statements and budgets. Students learn how to prepare, read and analyze financial statements. Topics include analysis of income statements, balance sheets, flow of funds, risk, obtaining and spreading statements, cash flow projections, capital accounts and financial ratios.
Prerequisite: None
Corequisite: None

BUS 2150 Legal Environment of Business 3 3/0/0
This course is an overview of the American legal system and provides an introduction to what a business person should know about the law and the American legal system. Major content areas will include the court system, trial process, alternative dispute resolution, business and the Constitution, the administrative process, torts and product liability, common law of contracts, employment law, employment discrimination, anti-trust law, international business and ethics.
Prerequisite: None
Corequisite: None

BUS 2202 Mgmt Information Sys 3 3/0/0
This course is a survey course of management information systems. An information system is a set of interrelated components working together to collect, retrieve, process, store and disseminate information for purposes of facilitating, planning and decision making in business and other organizations. The student will gain invaluable knowledge as to how a business solves problems using an information system.
Prerequisite: None
Corequisite: None

BUS 2204 Principles of Management 3 3/0/0
This course examines the historical and philosophical foundations of management as well as current theory and practices. Managerial decisions as a planner, organizer, motivator, controller and leader of a diverse workforce in a competitive environment are identified and evaluated. It is a study of the basic principles of business management, to include the functional, scientific, behavioral and systems approaches. Current literature, concepts, models and applications may be included as well as the use of case studies.
Prerequisite: None
Corequisite: None

BUS 2206 Principles of Marketing 3 3/0/0
This course is an introductory study of marketing and will include the nature and significance of marketing to both consumers and industrial firms, the marketing mix, market segmentation, target market identification, the product, channels of distribution and pricing systems. Basic factors affecting policy and strategy issues in marketing will also be examined. The course will describe economic, legal, behavioral, environmental, competitive and technological factors as they affect product, pricing, promotion and marketing-channel decisions.
Prerequisite: None
Corequisite: None

BUS 2220 Global Business 3 3/0/0
This course will introduce the student to business operations surrounding global trade and identify interconnected issues. Businesses are increasingly challenged by multinational corporations, international trade policies, cultural and religious differences, environmental movements and human rights groups, which often play a leading role in defining and framing the global agenda. Understanding why nations do business with each other, how communication plays a vital role, what cultural features influence business practices, how competitive dynamics affect organizations and what legal considerations must be followed will prepare students for a rapidly-changing global economy.
Prerequisite: None
Corequisite: None

Computer-Aided Drafting

CADD 1102 Fundamentals of CADD 4 2/0/0
This course provides the fundamentals of computer-aided drafting using the latest version of AutoCAD drafting software. The course develops the fundamental CADD skills necessary to produce and print complex drawings and sheet sets.
Prerequisite: None
Corequisite: None

CADD 1105 CADD for Interior Design 2 2/0/0
This course employs CADD for interior design projects. Floor plans, space planning, elevations and perspectives are created.
Prerequisite: CADD1102
Corequisite: None

CADD 1114 Intro to Solids and Parametric Modeling 4 2/0/0
This course is an introduction to solid modeling and model-derived drawing layouts using the latest versions of the AutoCAD, Inventor and Solidworks drafting software.
Prerequisite: CADD1102 AND MCD1102
Corequisite: None

CADD 2214 Advanced Solids and Parametric Modeling 4 2/0/0
This course covers advanced part modeling, assembly modeling, sheet metal and presentation files in the latest versions of the Inventor and Solidworks drafting software.
Prerequisite: CADD1114
Corequisite: None

Carpentry

CARP 1102 Prin of Framing 3 3/0/0
This course is designed to provide an understanding of the principles of floor, wall, stair and roof framing.
Prerequisite: None
Corequisite: None

CARP 1104 Framing I 6 0/6/0
This course is designed to provide experience in constructing basic floor frames, wall frames, stair frames, and ceiling and roof frames.
Prerequisite: None
Corequisite: None

CARP 1108 Interior Finish I 4 1/3/0
This course provides an understanding of the materials used for interior finishing, plus hands-on experience in the application of these materials.
Prerequisite: None
Corequisite: None

CARP 1110 Introduction to Cabinet Building 3 1/2/0
This course covers basic kitchen design, cabinet planning, sizing and construction joints necessary for fabrication of a quality cabinet. The student will construct a basic upper and base cabinet. The student will learn how to laminate a countertop and install it.
Prerequisite: None
Corequisite: None

CARP 1112 Exterior Finish I 3 1/2/0
This course provides the student with a basic knowledge of exterior finishes to building construction and installation. During the course the student will learn about and install various wall sidings, soffits and fascia coverings.
Prerequisite: None
Corequisite: None

CARP 2106 Footings and Foundations 2 1/0/0
This course covers both consumers and industrial firms, the marketing mix, market segmentation, target market identification, the product, channels of distribution and pricing systems. Basic factors affecting policy and strategy issues in marketing will also be examined. The course will describe economic, legal, behavioral,
**Child Care Education**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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<tbody>
<tr>
<td>CDEV 1105</td>
<td>Development/Guidance</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>CCHILD 2220</td>
<td>Prin of Framing II</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>CCHILD 2204</td>
<td>Concrete Technology</td>
<td>2</td>
<td>0/2/0</td>
</tr>
<tr>
<td>CCHILD 2206</td>
<td>Adv Framing Applications</td>
<td>6</td>
<td>0/6/0</td>
</tr>
<tr>
<td>CCHILD 2208</td>
<td>Exterior Finish II</td>
<td>3</td>
<td>0/3/0</td>
</tr>
<tr>
<td>CCHILD 2210</td>
<td>Interior/Exterior Finish Prin</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>CCHILD 2212</td>
<td>Interior Finish II</td>
<td>4</td>
<td>0/4/0</td>
</tr>
<tr>
<td>CCHILD 2214</td>
<td>Exterior Siding</td>
<td>2</td>
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<tr>
<td>CCHILD 2216</td>
<td>Deck Construction</td>
<td>2</td>
<td>0/2/0</td>
</tr>
<tr>
<td>CCHILD 2218</td>
<td>Soffits, Gutters, Gables</td>
<td>2</td>
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</tr>
<tr>
<td>CCHILD 2220</td>
<td>Carpentry Internship</td>
<td>3</td>
<td>0/0/3</td>
</tr>
<tr>
<td>CCHILD 2224</td>
<td>Advanced Cabinets</td>
<td>4</td>
<td>1/3/0</td>
</tr>
<tr>
<td>CCHILD 2226</td>
<td>Special Projects/Topics</td>
<td>2</td>
<td>0/2/0</td>
</tr>
</tbody>
</table>

**COURSE DESCRIPTIONS**

CDEV 1105 Development/Guidance

This course provides an overview of childhood development from conception through age 8, with emphasis in the following areas: physical, cognitive, language, creative and social-emotional. It integrates theory with developmentally appropriate practice in home, center-based and school settings. In addition, this course gives the student an introduction to positive child guidance techniques for individual and group settings. This course will help students to understand behavior problems and identify strategies to prevent and resolve problem behaviors.

Prerequisite: None
Corequisite: None

CDEV 1107 Introduction to Early Education

This course explores career opportunities with children and investigates a variety of child development programs for children ages birth through 8. Students will examine job requirements, duties, regulations and personal characteristics of successful workers. In addition, this course will guide the student in obtaining skills needed to maintain a safe and healthy child development setting.

Prerequisite: None
Corequisite: None

CDEV 2200 Integrating Play

This course examines play during the infant, toddler, preschool and primary school years of development. This course will examine theories of play, discover how play promotes development, examine the physical environment and its relation to play, and construct play materials appropriate to the play of children. Play is the work of children.

Prerequisite: None
Corequisite: None

CDEV 2229 Imaginative Learning

This course provides an exploration of the home, center or school environment for children ages birth through 8. It includes an examination of both indoor and outdoor space in relation to arrangement, maintenance and evaluation. Students apply their knowledge in an actual work setting. The focus is on designing learning environments and developmentally appropriate practice in methods and materials for art, literacy, music, math, science, physical development, and social and multicultural studies.

Prerequisite: CDEV1105 AND CDEV1107
Corequisite: None

CDEV 2236 Occupational Experience

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students will demonstrate competence in promoting health, safety and nutrition; guiding children; arranging learning environments; and communicating with parents.

Prerequisite: None
Corequisite: None

CDEV 2238 Integrating Children with Special Needs

This course examines the development of and provides hands-on experiences for children with special needs in an integrated child care or primary school-age setting. Students will study topics such as child development, integration of students with disabilities, individual and group work, and planning for inclusive education.

Prerequisite: None
Corequisite: None

CDEV 2241 Observing and Assessing

This course provides the student with an opportunity to observe and assess children's development. Under the supervision of an instructor, the student observes, records, interprets and develops plans to strengthen the development of infants through primary school-age children. Students will conduct a study, based on assessments gathered throughout the course of the semester for one specific child.

Prerequisite: CDEV 2200 and CDEV 2229
Corequisite: None

CDEV 2242 Infant/Toddler Program

This course provides an overview of infant/toddler learning experiences in either home or center-based settings. Students integrate knowledge of developmental needs, developmentally appropriate environments, and effective caregiving and teaching methods.

Prerequisite: CDEV1105 AND CDEV1107 AND CDEV2200 AND CDEV2229
Corequisite: None

CDEV 2244 Parent Professional Relations

This course covers the relationship between the caregiver and the child's family. The students will explore strategies to maintain professional relationships with co-workers, parents and outside organizations. Cultural diversity/dynamics, bias, public education, housing, employment, crime, health care, legal services and social services will be explored.

Prerequisite: None
Corequisite: None

CDEV 2246 Foundations in Literacy

This course is an overview of early language acquisition, how literacy is best developed and what activities child care providers can do to promote the foundation for literacy development.

Prerequisite: CDEV1105 AND CDEV1107 AND CDEV2200 AND CDEV2229
Corequisite: None

CDEV 2290 Internship

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students implement a variety of learning experiences that are developmentally appropriate and culturally sensitive for a specific group of children.

Prerequisite: None
Corequisite: None

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Minnesota State Community and Technical College

Course Catalog 2013-2014
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<th>Course #</th>
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<th>Lec/Lab/OJT</th>
<th>Course #</th>
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<th>CR</th>
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<tr>
<td>CHEM 0995</td>
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<td>CHEM 2223</td>
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<td>CHEM 1102</td>
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<tr>
<td>CHEM 1115</td>
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<td>CIVL 1138</td>
<td>CADD II: Plan Layout</td>
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<td>CHEM 2224</td>
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<td>CIVL 2209</td>
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<td>4/1/0</td>
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<td>Road Design</td>
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<tr>
<td>CHEM 1100</td>
<td>Prin of General Chemistry</td>
<td>4</td>
<td>3/1/0</td>
<td>Heterocyclic compounds, macromolecules and the possible addition of selected topics such as carbohydrates, fats, amino acids and proteins. The course includes laboratories which will include purification, synthesis, and characterization of organic compounds and the study of organic reactions. Green chemistry techniques will be practiced wherever possible.</td>
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</table>
Course # | Course Title | CR | Lec/Lab/OJT
--- | --- | --- | ---
CIVL 2230 Civil Engineering Technology Internship | 3 | 0/0/3
CIVL 2232 Survey II: Legal Surveys | 3 | 2/1/0
CIVL 2234 Utility Design | 3 | 2/1/0
CIVL 2238 CADD III: Project Design | 3 | 2/1/0
CIVL 2240 Introduction to Geographic Information Systems | 3 | 3/0/0
CIVL 2244 Survey IV: Equipment Software | 3 | 2/1/0
CIVL 2246 Introduction to Hydrology | 3 | 3/0/0

**Communication**

COMM 1100 Communication and Effective Human Relations | 3 | 3/0/0
COMM 1120 Introduction to Public Speaking | 3 | 3/0/0
COMM 1130 Small Group Communication | 3 | 3/0/0
COMM 1140 Interpersonal Communication | 3 | 3/0/0

**Construction Electricity**

CONE 1100 Electrical Safety | 1/0/0
CONE 1102 Introduction to Electric Circuit Theory | 4 | 2/2/0
CONE 1104 Introduction to National Electrical Code | 2 | 2/0/0
CONE 1107 Introduction to Residential Wiring | 3 | 1/2/0
CONE 1108 Electrical Circuit Theory | 4 | 2/2/0
CONE 1110 Electric Motors and Generators | 4 | 2/2/0
COURSE DESCRIPTIONS

Course # | CourseTitle | CR | Lec/Lab/OJT
---|---|---|---
CONE 1112 | Residential Wiring | 3 | 1/2/O
This course provides students with expanded technical understanding of the skills necessary for residential wiring. Students will be provided with experience for installations common to residential structures including general receptacles, lighting and designated circuit layout and installation.
Prerequisite: None
Corequisite: None
CONE 1114 | National Electrical Code | 2 | 2/0/0
This course provides students with an understanding of the National Electrical Code articles related to overcurrent protection, raceways, special systems, panelboards, motors, compressors, transformers and the State Electrical Act.
Prerequisite: None
Corequisite: None
CONE 1115 | Solar Photovoltaic Installation | 1 | 1/0/0
This course covers the installation of photovoltaic (PV) solar panels and associated equipment. Topics include principles of operation, payback, safety concerns, site selection, system types and sizing. The primary focus is how to install the units so they are in compliance with the National Electrical Code.
Prerequisite: None
Corequisite: None
CONE 1116 | Conduit/Tool Applications | 2 | 0/2/0
Numerous applications and skills will be developed in this course including bending, threading and installation of various types of conduit. This course also provides a review of the operation and safety of both hand and power tools used in the construction electricity field.
Prerequisite: None
Corequisite: None
CONE 1118 | Electrical Services | 3 | 2/1/0
This course covers requirements and installation of service entrance equipment. Topics include service materials, installation procedures, meters, service and conduit sizes, panel types, bonding, grounding and overcurrent protection.
Prerequisite: None
Corequisite: None
CONE 1120 | Electrical Blueprints | 3 | 2/1/0
The student will learn to read commercial blueprints with an emphasis on electrical circuitry including lighting, power, service, feeders and special systems. The course also introduces the student to CAD drawings.
Prerequisite: None
Corequisite: None
CONE 1122 | Introduction to Electrical Materials | 1 | 0/1/0
This course provides the student with an introduction to the electrical material used in industry. The student develops basic skills and understanding of the material and how it applies to electrical applications in the field.
Prerequisite: None
Corequisite: None
CONE 1124 | Introduction to Electrical Blueprint Reading | 2 | 1/1/0
This course provides the student with a working knowledge of residential blueprints and specifications. The student gains an understanding of blueprints, then interprets and applies this knowledge to the electrical industry.
Prerequisite: None
Corequisite: None
CONE 1130 | Electrical Blueprints | 3 | 2/1/0
The student will learn to read commercial blueprints with emphasis on electrical circuitry including lighting, power, service, feeders and special systems. The course also introduces the student to CAD drawings.
Prerequisite: None
Corequisite: None
CONE 1140 | Power-Limited Exam Prep | 2 | 2/0/0
This course covers the knowledge base associated with the Minnesota Power-Limited License and includes all of the topics identified in the Minnesota Board of Electricity PLT study guide. Subjects covered include those found in the National Electrical Code and in the Minnesota laws and rules. Additional subjects covered include technical terminology, formulas and procedures that are essential elements of the PLT examination, not all of which are found in the NEC.
Prerequisite: None
Corequisite: None
CONE 1170 | Predictive Maintenance Technology | 2 | 1/1/0
This course is designed to introduce students to the current predictive maintenance technology used in the Best Maintenance Practices as used by top-performing companies in industry. The course will cover infrared thermography, vibration analysis, ultrasonic detection, oil spectrum analysis, motor current analysis and other technologies. These methods are used in electrical and mechanical maintenance programs in industry to predict failures of electrical control equipment, bearings and other critical machines found in industry. Students will also be introduced to Best Maintenance Practices and their impact on the future of industry in the United States.
Prerequisite: None
Corequisite: None
CONE 1175 | Best Maintenance Practices I | 2 | 1/1/0
More than 70 percent of equipment failures in industry and manufacturing are self-induced by a company’s own maintenance workers, policies or attitudes, resulting in downtime or lost production. This course covers the Best Maintenance Practices as determined by top industrial and manufacturing companies. This course covers permanent repairs as related to specific tasks such as bearing replacement, chains, belts, couplings, lubrication, proper alignment and packing and seals.
Prerequisite: None
Corequisite: None
CONE 2202 | Heating/Cooling Controls | 3 | 2/1/0
This course introduces basic electric heating, gas, oil, heat pump and cooling system installation and control. Topics included are installing wiring for heating and air conditioning systems, replacing controllers, measuring instruments and schematic interpretation.
Prerequisite: None
Corequisite: None
CONE 2205 | Introduction to Commercial Wiring | 3 | 2/1/0
This course examines the material and design aspects of commercial wiring. Topics included are raceways, boxes, design requirements for conduit layouts, circuit current protection and lighting.
Prerequisite: None
Corequisite: None
CONE 2206 | Introduction to Motor Control Applications | 3 | 2/1/0
This course provides an understanding of motor control symbols, line diagrams, contractors, starters and operating circuits. Lab procedures demonstrate components, circuitry and operation learned in theory. Measured data is recorded and interpreted.
Prerequisite: None
Corequisite: None
CONE 2211 | Electronic Motor Control | 3 | 2/1/0
This course introduces the operation, installation, hardware, software and practical applications of programmable logic controllers. Basic PLC programming techniques for counters, timers and sequencers will be presented.
Prerequisite: None
Corequisite: None
CONE 2212 | Commercial Wiring | 3 | 1/2/0
This course covers the installation methods and materials used in industrial wiring. Topics include transformers, busways, motor installation, industrial metering, overcurrent system coordination, ground detection, grounding systems, surge protection, distribution, special systems and industrial hazardous locations, and the study of the National Electrical Code relating to these topics.
Prerequisite: None
Corequisite: None
CONE 2214 | Industrial Wiring | 2 | 1/1/0
This course covers the installation methods and materials used in industrial wiring. Topics include transformers, busways, motor installation, industrial metering, overcurrent system coordination, ground detection, grounding systems, surge protection, distribution, special systems and industrial hazardous locations, and the study of the National Electrical Code relating to these topics.
Prerequisite: None
Corequisite: None
CONE 2216 | Motor Control Application | 3 | 1/2/0
This course provides an advanced understanding of circuits controlling motors. Topics include jogging, braking, plugging, reduced voltage starting, phase loss protection, latch relays, time delay relays and safety requirements. Lab procedures demonstrate components, circuitry and operation learned in theory. Measured data is recorded and interpreted.
Prerequisite: None
Corequisite: None
CONE 2217 | Building Automation I | 2 | 0/2/0
This course introduces students to building automation systems. These systems are becoming critical required components used for green buildings, energy conservation and building safety systems. Topics covered in this course include electrical energy production, alternative energy sources and interconnection of renewable sources to existing power systems. This course also covers green utilization equipment and controls such as lighting, heating, ventilating and air conditioning, and plumbing.
Prerequisite: None
Corequisite: None
CONE 2218 | Building Automation II | 2 | 0/2/0
This course is a continuation of Building Automation I. Topics covered include more critical building safety and security systems. These systems include fire systems and security and access control systems; voice, data and video systems; and automated building operations. Students will gain hands-on experience installing, programming and troubleshooting live systems.
Prerequisite: None
Corequisite: None
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<tr>
<td>CONE 2220</td>
<td>Electrician Internship</td>
<td>3 0/0/3</td>
<td>CONE 2250</td>
<td>Special Topics/Projects</td>
<td>2 0/2/0</td>
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<tr>
<td></td>
<td>(The course provides the student with the opportunity to work for an electrician or in another approved electrical setting. The student will experience working at the job site with other employees and under various working conditions. Prerequisite: None Corequisite: None)</td>
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<td>(The course works with an advisor and instructor to develop a contract with specific goals in areas deemed applicable to the construction electricity industry and the student’s career plan. This opportunity may be limited by conditions such as instructor/ lab/material availability. Prerequisite: None Corequisite: None)</td>
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<tr>
<td>CONE 2222</td>
<td>Advanced Programmable Logic Controllers</td>
<td>3 1/2/0</td>
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<tr>
<td></td>
<td>(This course is designed to introduce students to the uniform building code in that it provides them with the basic knowledge and hands-on skills necessary to lay out a building site and establish elevations for construction. Prerequisite: None Corequisite: None)</td>
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<tr>
<td>CONE 2225</td>
<td>Transformers</td>
<td>2 0/2/0</td>
<td>CONM 1102</td>
<td>Site/Building Layout</td>
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<tr>
<td></td>
<td>(This course covers theory, operation and practical applications of programmable logic controllers with an emphasis on advanced programming techniques and analog modules, input devices and hands-on wiring of PLC circuits. PLC programs are created and installed for operation of actual electrical equipment. Prerequisite: CONE2208 Corequisite: None)</td>
<td></td>
<td></td>
<td>(This course is designed to introduce the Uniform Building Code to students in the construction field, where a basic knowledge of the code’s requirements is needed. Emphasis will be placed on electrical circuits pertaining to residential, commercial, industrial and motor control applications. Prerequisite: CONE2208 Corequisite: None)</td>
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<tr>
<td>CONE 2226</td>
<td>Agricultural Wiring</td>
<td>2 1/1/0</td>
<td>CONM 1104</td>
<td>Principles of Estimating</td>
<td>4 2/2/0</td>
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<tr>
<td></td>
<td>(This course provides the fundamental of estimating utilizing computer software and/or Timberline estimating software and explores the use of spreadsheet and database software in estimating. Prerequisite: CONM2208 Corequisite: None)</td>
<td></td>
<td></td>
<td>(This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: CONM1108 Corequisite: None)</td>
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<tr>
<td>CONE 2227</td>
<td>Electrician Internship</td>
<td>2 0/2/0</td>
<td>CONM 2204</td>
<td>Materials Testing</td>
<td>3 1/2/0</td>
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<td></td>
<td>(This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: CONM1108 Corequisite: None)</td>
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<td></td>
<td>(This course will explore standard construction contract documents and project estimating procedures and their use in building a competitive bid. Prerequisite: CONM1108 Corequisite: None)</td>
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<tr>
<td>CONE 2228</td>
<td>Electrical Troubleshooting</td>
<td>1 0/1/0</td>
<td>CONM 2206</td>
<td>Building Codes</td>
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</tr>
<tr>
<td></td>
<td>(This course provides the experience of an electrician and advanced student with an overview of the National Electrical Code (NEC) and the State Electrical Act and can be used in preparing for the journeyman or masters electrical exam. Prerequisite: 30 CONE credits AND or experience in the electrical field Corequisite: None)</td>
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<td>(Planning and scheduling are important management tools. In this course students will work with several scheduling techniques commonly used in the construction industry to bring projects to timely and economically successful ends. Prerequisite: BLDG1120 OR CONM2208 Corequisite: None)</td>
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<tr>
<td>CONE 2229</td>
<td>Power Distribution Systems</td>
<td>2 1/2/0</td>
<td>CONM 2208</td>
<td>Construction Management Internship</td>
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<td></td>
<td>(The course includes construction management applications in the areas of safety and health. Students will have an opportunity to work in construction company safety policies and procedures in areas of safety and health. Prerequisite: None Corequisite: None)</td>
<td></td>
<td></td>
<td>(The course will provide management and leadership students with an opportunity to apply and extend their knowledge, practice their skills, integrate behaviors and explore areas of employment within the construction industry. Students will perform activities consistent with program outcomes in an industry setting with the supervision of the site employer. Prerequisite: None Corequisite: None)</td>
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<tr>
<td>CONE 2230</td>
<td>Power Distribution Systems</td>
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<td>(This course includes construction management applications in the areas of safety and health. Students will have an opportunity to work in construction company safety policies and procedures in areas of safety and health. Prerequisite: None Corequisite: None)</td>
<td></td>
<td></td>
<td>(This course provides the fundamentals of estimating utilizing computer software and/or Timberline estimating software and explores the use of spreadsheet and database software in estimating. Prerequisite: CONM2208 AND CFTTR1004 OR MCD2204 AND CFTTR1004 Corequisite: None)</td>
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<td>(This course includes construction management applications in the areas of safety and health. Students will have an opportunity to work in construction company safety policies and procedures in areas of safety and health. Prerequisite: None Corequisite: None)</td>
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<td>(The course will provide management and leadership students with an opportunity to apply and extend their knowledge, practice their skills, integrate behaviors and explore areas of employment within the construction industry. Students will perform activities consistent with program outcomes in an industry setting with the supervision of the site employer. Prerequisite: None Corequisite: None)</td>
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<td>Agricultural Wiring</td>
<td>2 1/1/0</td>
<td>CONM 2222</td>
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<td>(This course is designed to introduce the Uniform Building Code to students in the construction field, where a basic knowledge of the code’s requirements is needed. Emphasis will be placed on electrical circuits pertaining to residential, commercial, industrial and motor control applications. Prerequisite: CONE2208 Corequisite: None)</td>
<td></td>
<td></td>
<td>(The course includes construction management applications in the areas of safety and health. Students will have an opportunity to work in construction company safety policies and procedures in areas of safety and health. Prerequisite: None Corequisite: None)</td>
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<td>(This course covers the fundamental of estimating procedures and their use in building a competitive bid. Prerequisite: CONM1108 Corequisite: None)</td>
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<td>CONE 2241</td>
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<td>CONE 2245</td>
<td>Code Applications</td>
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<td>CONM 2232</td>
<td>Construction Management</td>
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</tbody>
</table>

**Construction Management**

- **CONM 1102 Site/Building Layout**: 2 1/1/0
  - This course provides the students with the basic knowledge and hands-on skills necessary to lay out a building site and establish elevations for construction. Prerequisite: None Corequisite: None

- **CONM 1108 Principles of Estimating**: 4 2/2/0
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 1124 Building Systems**: 3 3/0/0
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 2204 Materials Testing**: 3 1/2/0
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 2220 Construction Bidding**: 2 1/1/0
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 2226 Building Codes**: 2 2/0/0
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 2228 Construction Management**: 2 0/0/2
  - This course covers the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None

- **CONM 2230 Construction Management Internship**: 2 0/0/2
  - This course provides the basics of estimating procedures and their use in building a competitive bid. Prerequisite: None Corequisite: None
### Cosmetology

#### COSM 1000 Principles and Practices
- **CR:** 3
- **Lec/Lab/OJT:** 0/0/0
This course is intended for manicurists, estheticians and some transfer students. In a condensed form, this course will include the topics of chemistry, electricity, salon business, professional image, anatomy and infection control.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1103 Shampooing and Rinsing
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course covers shampooing and draping. Students will learn the importance of selecting the correct shampoo for various hair types.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1105 Hairstyling
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will instruct students in conducting services in a safe environment. Students will learn styling and finishing techniques to complete a hairstyle to the satisfaction of the client.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1107 Haircutting
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will help students develop a strong foundation in haircutting. Students will learn basic sectioning and cutting techniques, along with instruction in how to use scissors, razors and clippers to achieve a strong foundation in haircutting.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1111 Properties of the Hair and Scalp
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the different layers of the hair and how it can be damaged. It is essential for students to be able to analyze a client's hair, determine what type of damage the hair has experienced and prescribe corrective treatment.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1117 Shampooing and Rinsing
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course covers shampooing and draping. Students will learn the importance of selecting the correct shampoo for various hair types.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1119 Haircutting
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will help students develop a strong foundation in haircutting. Students will learn basic sectioning and cutting techniques, along with correct use of scissors, razors and clippers to achieve a strong foundation in haircutting.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1121 Histology of the Skin
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course the student will learn the basic structure of the skin and its function. The student will learn how to conduct services in a safe environment and how to take measures to prevent spreading infectious and contagious diseases.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1123 Facials/Make-Up/Hair Removal
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course the student will learn the uses of various skin care products and their correct application to different skin types. The student will learn basic make-up application, including artificial lashes, and basic massage movements to assist in providing basic skin care services.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1125 Nail Structure and Growth
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course the student will learn the structure of the nail. The student will recognize various disorders and which disorders can be serviced in the salon.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1129 Hairstyling
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will instruct students in conducting services in a safe environment. Students will learn the styling and finishing techniques to complete a hairstyle to the satisfaction of the client.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1130 Properties of the Hair and Scalp
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the different layers of the hair and how it can be damaged. It is essential for students to be able to analyze a client's hair, determine what type of damage the hair has experienced and prescribe corrective treatment.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1137 Principles of Hair Design
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will give students an understanding of design and how to incorporate design into creating a pleasing hairstyle for each client's facial features.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1149 Advanced Hair Design
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course provides advanced skill training in hair cutting, chemical control and hair color.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1155 Professional Image
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course relates to proper conduct and business dealings with employers, clients and co-workers, as well as others with whom students will come in contact.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1157 Histology of the Skin
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the basic structure of the skin and its function. Students will learn how to conduct services in a safe environment and how to take measures to prevent spreading infectious and contagious diseases.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1159 Facials, Make-Up, and Hair Removal
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the uses of various skin care products and how to apply them to different skin types. Students will learn basic make-up application, including artificial lashes, and basic massage movements to assist in providing basic skin care services.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1161 Nail Structure and Growth
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the structure of the nail, how to recognize various disorders and which disorders can be serviced in the salon.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1162 Airbrushing Techniques
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course teaches students the art of airbrushing techniques on natural and artificial nails. Topics include client consultation, safety and sanitation.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1163 Hair Color
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn how to conduct a color service in accordance with a client's needs and the importance of using a variety of salon products and techniques to achieve the appropriate color outcome.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1171 Principles of Hair Design
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course will give students an understanding of design and how to incorporate design into creating a pleasing hairstyle for each client's facial features.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1173 Chemistry and Electricity
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the two types of electricity, how they are measured and the safety devices pertaining to electricity. Many of the services students will provide actually change the hair, skin and nails chemically. It is essential that students have a good working knowledge of chemistry in order to provide the safest and most effective services.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1177 Infection Control
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the nature of various organisms, how they relate to disease and how their spread can be prevented in the salon and at school.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1179 Minnesota Cosmetology Laws and Rules
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course prepares students for the Laws and Rules portion of their state license examination.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1185 The Art of Clipper Cutting
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course students will learn the art of clipper cutting and beard design. This course will include client consultation, safety and sanitation.
**Prerequisite:** None
**Corequisite:** None

#### COSM 1200 Salon Practicum
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
In this course, students will work in a licensed salon in order to meet the required 1500 hours of salon experience stipulated by the State Board of Cosmetology. Students will use this course to supplement their existing salon experience. Credits will be awarded to reflect the number of additional hours the student will work in order to meet the state requirements.
**Prerequisite:** None
**Corequisite:** None

#### COSM 2000 Artistry in Hairstyling
- **CR:** 1
- **Lec/Lab/OJT:** 0/0/0
This course focuses on the various types of non-surgical hair additions. Students will learn about the care and styling of wigs and basic braiding procedures to create hairstyles that are pleasing to clients.
**Prerequisite:** None
**Corequisite:** None
In this course students will learn basic manicuring and pedicuring procedures. Students will understand the importance of providing services in a safe environment.

Prerequisite: None
Corequisite: None

COSM 2300 Anatomy of the Head, Face and Neck 1 1/0/0
In this course students will learn basic anatomy of the head, face and neck so they can perform the services for which they are trained and qualified.

Prerequisite: None
Corequisite: None

COSM 2400 Advanced Nail Techniques 1 1/0/0
In this course students will learn how to conduct a client consultation to determine client needs and preferences. Students will learn about a variety of salon products that will enable them to provide nail services to clients.

Prerequisite: None
Corequisite: None

COSM 2500 Salon Business 1 1/0/0
In this course students will learn how to manage their time to provide efficient client services. Students will learn the necessary steps to retain clients and how to market salon products and maintain business records.

Prerequisite: None
Corequisite: None

COSM 2600 Professional Image 1 1/0/0
In this course students will learn about the importance of physical presentation, beauty and wellness, and ergonomics in the salon.

Prerequisite: None
Corequisite: None

COSM 2700 Nail Art 1 0/1/0
In this course students will perform various forms of nail art techniques and designs on natural and artificial nails. This course will include client consultation, safety and sanitation.

Prerequisite: None
Corequisite: None

COSM 2800 Alexandria Body Sugaring 1 1/0/0
In this course students will learn how to remove hair using the Alexandria Professional Body Sugaring advanced system. The course includes theory and thorough knowledge of the correct techniques employed in the practice of body sugaring.

Prerequisite: None
Corequisite: None

Computer

CPTR 1001 Introduction To Programming and Scripting 3 1/2/0
This course is an introduction to computer programming. Emphasis will be on programming concepts, program design methodology, program debugging, problem solving and writing clear code.

Prerequisite: None
Corequisite: None

CPTR 1100 Fund Computer Concepts 1 0/1/0
This course provides a general overview of the frequently used functions of a personal computer. Computer hardware, operating systems, electronic mail, Internet and a brief introduction to an office software package will be covered.

Prerequisite: None
Corequisite: None

CPTR 1102 Introduction to Macintosh 3 2/1/0
This course covers the operation of Macintosh computer hardware and software, the Macintosh operating system and an introduction to Microsoft Office Suite software.

Prerequisite: None
Corequisite: None

CPTR 1104 Intro to Computer Tech 3 2/1/0
This course covers the operation of personal computer hardware and software. It provides an overview of a personal computer operating system and word processing, spreadsheet, presentation, email, scheduling, Internet and database management software.

Prerequisite: None
Corequisite: None

COURSE DESCRIPTIONS
<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPTR 1138</td>
<td>Information Systems</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course is an introduction to information systems. Topics include an overview of data communications and information systems used in a variety of organization types, network hardware, software, topologies and resources, hardware and communication standards, and the systems development life cycle.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 1142</td>
<td>Network Essentials</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course gives students both the knowledge and hands-on skills necessary to work with network operating systems in a network administration environment.</td>
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<td>Prerequisite:</td>
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<td>Corequisite:</td>
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<tr>
<td>CPTR 1148</td>
<td>Microcomputer Operating System</td>
<td>3</td>
<td>1/2/0</td>
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<tr>
<td>This course covers basic information about computer hardware and software and the use of the Windows operating system. Topics include file management techniques, utilizing common screen elements, multitasking, object linking and customizing the desktop.</td>
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<td>Prerequisite:</td>
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<td>Corequisite:</td>
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<tr>
<td>CPTR 1166</td>
<td>Word Processing and Spreadsheets</td>
<td>4</td>
<td>2/2/0</td>
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<tr>
<td>This course covers the basics of word processing and spreadsheet concepts, development and use.</td>
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<td>Prerequisite:</td>
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<td>Corequisite:</td>
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<tr>
<td>CPTR 1170</td>
<td>Web Engineering I</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course is an introduction to programming and maintaining professional Web pages for the business environment. Topics will include page design, authoring tools, accessibility issues and Web page and website development. Focus will be given to client-side programming languages such as HTML and JavaScript, Web server software, Web server maintenance and Internet protocols.</td>
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<td>Prerequisite:</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 1178</td>
<td>Robotics</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course teaches basic robot building, programming and troubleshooting. The robot building includes working with multiple motors and sensors on a robot. The robot program includes working with a graphical and command line programming environment. Along with reading current literature about robotics, this class provides the student the fundamentals of robotics.</td>
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<td>Prerequisite:</td>
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<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2000</td>
<td>Mobile Application Development</td>
<td>3</td>
<td>1/2/0</td>
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<tr>
<td>This course teaches software development for popular mobile operating systems. Focus will be on the creation of platform-specific user interfaces, data storage and network use.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1170 OR INTD1108</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2200</td>
<td>CISCO 3</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course is a study of ethernet problems and solutions. The course covers ethernet segmentation options and VLAN configuration. The student will practice solving these problems.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1118</td>
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<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2208</td>
<td>CISCO 4</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course covers WAN configuration and remote access configuration. Students will practice design and configuration of systems to solve WAN and remote access problems.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2200</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2220</td>
<td>COBOL Programming II</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This is the second course in COBOL programming language. Topics include sorting, table processing, data manipulation, control break processing, sequential file maintenance, and indexed and relative files.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1114</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2224</td>
<td>Linux I</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course deals with Linux installation, configuration and system administration. This course lays the groundwork for continued study of Linux.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2228</td>
<td>RPG/OS400 I</td>
<td>4</td>
<td>2/2/0</td>
</tr>
<tr>
<td>This course is a continuation of RPG/OS400 I course with more advanced RPG programming and OS400 operations introduced. A strong emphasis will be put on developing screen programs that call one another and pass parameters between them. A large programming project will be given students at mid-semester in which they will develop many programs that are related and dependent on each other.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1128</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2230</td>
<td>Structured Query Language</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course covers the basics of SQL (Structured Query Language) programming language. SQL is a popular computer language that is used by small and large business organizations and computer programmers. The primary purpose of SQL is in working with databases and relational database management systems to store, retrieve, edit, manipulate and format data for end users and decision makers.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1106</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2234</td>
<td>Linux II</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>The primary focus of this course is Linux networking, security, ethics and privacy.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2224</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
<td></td>
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<tr>
<td>CPTR 2236</td>
<td>Network Security</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course deals with the understanding of basic network security. Students learn how to manage systems to guard against various security threats.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1148 AND CPTR2272</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2238</td>
<td>Database Integration</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course covers the integration of data from multiple databases with strategies for development of integrated database applications. In working with these databases the student will store, organize and analyze data. Students will be responsible for setting up new databases and maintaining existing databases.</td>
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<tr>
<td>Prerequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2242</td>
<td>Java Programming</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>In this course the student utilizes the Java programming language to create both Internet applets and applications.</td>
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<tr>
<td>Prerequisite:</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2245</td>
<td>Enterprise Network Technologies</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course will introduce information technologies used in an enterprise network environment. Possible technologies the course will cover are SANs, virtualization, clustering, enterprise wireless, VPN connectivity, structured cabling and network management. The course will discuss how these technologies provide 24/7 availability and introduce the concept of green technologies.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2272</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2252</td>
<td>Microcomputer Systems Project</td>
<td>3</td>
<td>1/2/0</td>
</tr>
<tr>
<td>Students utilize learning in previous courses to design and implement solutions to a business need. Activities include learning about current business practices and preparation for employment.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2272 OR CPTR2230</td>
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<td></td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2258</td>
<td>Microcomputer System Projects</td>
<td>2</td>
<td>0/2/0</td>
</tr>
<tr>
<td>Students utilize the content of previous computer and network technology courses to design and implement an information system/networking solution to a business need. Hardware and software projects may include designing, installing, upgrading or expanding a computer network. Students may work on individual projects.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2272</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2262</td>
<td>Internet Protocol Version 6</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>This course teaches how to manage systems using Internet Protocol Version 6. The emphasis is protocol management on networking devices.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2200</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2272</td>
<td>Network Operating Systems</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course teaches functions of a network operating system so the student can effectively maintain and manage a network. The student learns how to escalate and oversee the operations of a network, create logins, design and establish directory structures, and implement security.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1148 OR CPTR1138 OR CPTR1125 OR CPTR2224</td>
<td></td>
<td></td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2282</td>
<td>Email Administration</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>This course provides students with the skill sets to design, install, troubleshoot, secure and perform daily administration for a directory services integrated email system. Students learn how to use cryptographic authentication techniques along with learning how to analyze email server system performance and support email client packages.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR2272</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2294</td>
<td>Internship</td>
<td>3</td>
<td>0/0/3</td>
</tr>
<tr>
<td>This course provides students with the opportunity to apply knowledge and skill sets learned in concurrent coursework. Students will perform activities in an employer-supervised industry setting that is consistent with program outcomes. Students will also utilize interpersonal communication skills within the context of applying knowledge and skill sets.</td>
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<tr>
<td>Prerequisite:</td>
<td>CPTR1138</td>
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<tr>
<td>Corequisite:</td>
<td>None</td>
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<tr>
<td>CPTR 2296</td>
<td>Topics in Computers</td>
<td>3</td>
<td>1/2/0</td>
</tr>
</tbody>
</table>
| The goal of this course is to introduce students to a computer topic chosen from a wide range of classic and state-of-the-art research, techniques, systems and technologies
in the field of computer programming or networking. Topics will vary each semester. Course may be repeated for credit with a change in subtitle. Prerequisite: None Corequisite: None

**CPTR 2400 Web Integration**
Course covers advanced Web programming concepts with focus on database and information system integration for business software. Topics will include secure programming methodologies, user account authentication and Web forms. Server-side programming languages will be utilized. Prerequisite: CPTR1170 OR instructor’s approval Corequisite: CPTR2230 AND CPTR2242 OR instructor’s approval

**Criminal Justice**

**CRJU 1101 Introduction to Criminal Justice**
This course serves as an introduction to the American criminal justice system including police, courts and correctional systems. Minnesota Police Officer Standards and Training Board learning objectives are also covered in this course. Prerequisite: None Corequisite: None

**CRJU 1102 Policing and Practices**
This course includes an introduction into the development of American policing and an understanding of the modern roles and functions of police in a democratic society. These roles and functions include responsibilities in peacekeeping, law enforcement, community policing and customer service. Minnesota Police Officer Standards and Training Board learning objectives are also covered. Prerequisite: None Corequisite: None

**CRJU 1104 Juvenile Justice and Delinquency**
This course covers the study of juvenile delinquency, the theories of causation and the methods of corrections. It also examines the juvenile court and correctional systems. Minnesota juvenile law will be explored as it relates to the Minnesota Police Officer Standards and Training objectives. Prerequisite: None Corequisite: None

**CRJU 1106 Introduction to Corrections/Probation**
This course examines the historical and contemporary correctional theories and programs with emphasis on the current organizational structure. Probation, parole and correctional alternatives are also explored. Prerequisite: None Corequisite: None

**CRJU 1108 Physical Control Tactics for Corrections**
This course will deal with use of force issues relating to correctional officers, defensive tactics and control techniques, proper restraint techniques and less-than-lethal weapons training. Lecture and practical applications are included in the course. Minnesota Police Officer Standards and Training Board learning objectives relating to physical control and less-than-lethal weapons are also covered. Prerequisite: None Corequisite: None

**CRJU 1109 Law Enforcement Behavioral Science**
This course is devoted primarily to Minnesota Police Officer Standards and Training objectives including but not limited to the following areas: cultural awareness, stress management, domestic abuse, crisis intervention, communication, bias-motivated crimes, victims, ethics and human behavior. Prerequisite: None Corequisite: None

**CRJU 1111 Special Topics in Criminal Justice**
This course looks at a variety of contemporary issues that are considered to be hot spots in law enforcement and criminal justice such as police pursuits, deadly force, gangs, terrorism, etc. Applicable Minnesota Police Officer Standards and Training Board learning objectives are also covered. Prerequisite: None Corequisite: None

**CRJU 2201 Criminal Law**
This is a course in substantive law, including the elements of major crimes and possible legal defenses. This course also familiarizes students with the Minnesota criminal statutes focusing on Minnesota Police Officer Standards and Training Board objectives. Prerequisite: None Corequisite: None

**CRJU 2202 Criminal Procedures**
This course covers the study of constitutional law and criminal procedures utilizing the opinions of the United States Supreme Court and the Minnesota rules of criminal procedure. Emphasis is placed on the constitutional guidelines for law enforcement, rules of arrest, search and seizure, and the Minnesota Rules of Criminal Procedure. Minnesota Police Officer Standards and Training Board learning objectives relating to criminal procedure are also covered. Prerequisite: None Corequisite: None

**CRJU 2206 Police Report Writing**
This course provides the technical understanding and practical application in basic police report writing. Field note taking and standardized report forms commonly used by law enforcement. Emphasis is placed on developing a clear, concise style in expressing factual, relevant information in an acceptable format relevant to criminal case procedures. Minnesota Police Officer Standards and Training Board learning objectives for police report writing are also covered. Prerequisite: ENGL1101 OR GSCI1102 Corequisite: None

**CRJU 2209 Criminal Investigations**
This course covers the methodology of criminal investigations from the preliminary investigation to the court proceedings. It also covers evidence recognition, collection and preservation. Police reporting relevant to investigations is also covered, along with all Minnesota Police Officer Standards and Training Board learning objectives relating to investigation of crime. Prerequisite: None Corequisite: None

**CRJU 2210 Introduction to Criminalistics**
This is an introduction to the principles involved in the application of scientific and technical methods used in the discovery, review and evaluation of physical evidence. The interpretation of evidence and the linkage to suspects is also covered. Minnesota Police Officer Standards and Training Board learning objectives for collection and preservation of evidence are also covered. Prerequisite: None Corequisite: None

**CRJU 2235 Criminal Justice Internship**
This is a practical learning experience in criminal justice in the area of the student’s interest. This course is usually scheduled after the student has completed one full year of coursework. Prerequisite: None Corequisite: None

**Computer Science**

**CSCI 1101 Computer Essentials**
This course is intended for those with minimal or no computer skills. Basic computer hardware and software terminology and the basics of microcomputer operating systems will be covered, as well as Internet and email operations. In addition, introductory word processing skills will be taught using one of the industry's common word processing packages. No credit given if taken after another computer course. Prerequisite: None Corequisite: None

**CSCI 1110 Informatics**
This course explores how data is gathered and analyzed and how it can be applied to information technology solutions to maximize the benefits of data analysis, including increases in the efficiency and productivity of information systems. Students will explore the social, ethical and personal implications of implementing information technologies and how information processes can impact business on a local and global level. Prerequisite: None Corequisite: None

**CSCI 1120 Computer Programming Basic**
This course is an introduction to programming and problem-solving techniques using the Visual Basic programming language. Prerequisite: MATH0090 Corequisite: None

**CSCI 1121 Computer Science I**
This course is an introduction to computer science. It includes algorithm design and structured programming using a high-level programming language. Key components of this course are designing, coding, debugging and documenting programs using techniques of good programming style. This course is intended primarily as a first course for computer science majors and/or minors. Prerequisite: None Corequisite: None

**CSCI 1122 Computer Science II**
This course focuses on advanced programming concepts including an introduction to data structures, analysis of algorithms, recursion, searching, sorting and memory management. Prerequisite: CSCI1121 Corequisite: None
<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSEC 2212</td>
<td>Web Security</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>use of network attack techniques and tools.</td>
</tr>
<tr>
<td>CSEC 1205</td>
<td>Network Fundamentals</td>
<td>4</td>
<td>4/0/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This is the first course in a four-course, HTML-based curriculum that focuses on TCP/IP, ethernet routed and switched networks. Through the four-course program, students learn the information needed to prepare them for the Cisco Certified Networking Associate (CCNA) exam (an industry certification that will position students for immediate job openings or prepare them for computer engineering and science-focused college studies).</td>
</tr>
<tr>
<td>CSEC 2202</td>
<td>Introduction to Wireless Networking</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This is an introductory course that will focus on the design, planning, implementation, operation and troubleshooting of wireless networks. It covers a comprehensive overview of technologies, security and design best practices with particular emphasis on hands-on skills.</td>
</tr>
<tr>
<td>CSEC 2204</td>
<td>Managing Directory Services</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This course is designed to further students' understanding of directory services. Directory services provide a central repository for the information available on the network. The student will learn that the first function of the directory is to provide information about objects in the directory including users and resources such as file shares, printers or email boxes. In addition, the student will learn that the information contained in the directory is crucial for the correct and secure operation of the network.</td>
</tr>
<tr>
<td>CSEC 2210</td>
<td>Security Breaches and Countermeasures</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This course introduces the student to the various methodologies for attacking a network. The student will be introduced to concepts, principles and techniques supplemented by hands-on exercises for attacking and disabling a network. The course will emphasize network attack methodologies with the emphasis on student use of network attack techniques and tools.</td>
</tr>
<tr>
<td>CSEC 2212</td>
<td>Web Security</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This course will give students hands-on training in securing Web communications and websites. Students will learn the common vulnerabilities of websites, implementing e-business security policies, identifying security threats, developing countermeasures and managing the deployment of security solutions.</td>
</tr>
<tr>
<td>CSEC 2218</td>
<td>Disaster Recovery</td>
<td>2</td>
<td>1/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This course includes preparation of a disaster recovery plan, implementation of the plan and recovering from a disaster. This course takes an enterprise-wide approach to developing a disaster recovery plan. Students will learn how to restore a network in the event of a disaster.</td>
</tr>
<tr>
<td>CSEC 2222</td>
<td>Network Security Design</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td>Prerequisite:</td>
<td>None</td>
<td>This course will give the student the opportunity to conduct a vulnerability analysis on a network in order to practice or refine the attack methodologies with the hacker tools and techniques that the student was exposed to during the various program courses. The student must demonstrate the ability to design, plan and execute a vulnerability analysis against an organization network. The student must prepare a written report and mode of the security design, attack methodology, tools and techniques.</td>
</tr>
</tbody>
</table>

**Computer Network Security**

**CSEC 1102** Careers in Information Systems | 1 | 1/0/0 |
| Corequisite: | Prerequisite: | None | This course is for students who are interested in computer-related careers. Students will research careers in information technology including job duties, various job titles, salary ranges, employment and advancement prospects, and the skills and training required. Students in this course will complete individual college and career planning and goal setting plans. |
| CSEC 1110 | Fundamentals of IT Security | 3 | 2/1/0 |
| Corequisite: | Prerequisite: | None | This course introduces the basics of network security. The student will be introduced to network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course will expose the student to network security planning, network security technology, network security organization and legal and ethical issues associated with network security. |
| CSCI 1205 | Technical Support Internship | 3 | 0/0/3 |
| Corequisite: | Prerequisite: | None | This course will emphasize advanced technical support topics such as incident management, product development, software evaluation and selection, technical writing and end-user training. Students will apply their technical knowledge and experience to actual case studies. |

**Culinary Arts**

**CULN 1102** Introduction to Foodservice Preparation | 4 | 4/0/0 |
| Corequisite: | Prerequisite: | None | This course covers terminology, equipment, basic food products and cooking techniques and kitchen safety. |
| CULN 1104 | Soups, Stocks and Sauces | 2 | 2/0/0 |
| Corequisite: | Prerequisite: | None | This course covers the introduction and application of many soups, stocks and sauces that are the basis for the preparation of many food items that appear on restaurant menus. |
| CULN 1106 | Salad and Baking Lab | 6 | 0/6/0 |
| Corequisite: | Prerequisite: | None | This course covers food production in the foodservice salad and baking areas with the practical hands-on applications required for anyone to work in the pastry/baking area as well as the pantry/salad area in a commercial kitchen. |
| CULN 1112 | Poultry and Seafood | 3 | 3/0/0 |
| Corequisite: | Prerequisite: | None | This course is an introduction to poultry, fish and seafood from basic classifications to preparation methods, handling techniques, market forms and accompaniments. |
| CULN 1118 | Fry and Broiler Lab | 5 | 0/5/0 |
| Corequisite: | Prerequisite: | None | This course covers the skills required of a cook working various positions in a commercial food service production line, focusing on the equipment and techniques used. Food product information is also included in this course. |
| CULN 1120 | Kitchen Math and Formulas | 1 | 1/0/0 |
| Corequisite: | Prerequisite: | None | This course is an assessment and review of math skills necessary for food-service workers. Functions with whole numbers, fractions, decimals and percentages are covered and applied to food-service calculations and formulas. |
Course  | Course Title | CR | Lec/Lab/OJT
---|---|---|---
CULN 1122 Sanitation Certification | 1 | 0/0/0
CULN 1124 Menu Planning and Merchandising | 2 | 0/0/0
CULN 2202 Meats | 2 | 0/0/0
CULN 2204 Breakfast Preparation Lab | 5 | 0/5/0
CULN 2206 Buffet and Garde Manger Lab | 3 | 0/3/0
CULN 2214 Quantity Food Preparation and Butcher Lab | 6 | 0/6/0
CULN 2222 Production and Planning Supervision Lab | 6 | 2/4/0
CULN 2226 Food Cost Control | 3 | 3/0/0
CULN 2236 Ethnic Foods | 2 | 1/1/0
CULN 2238 Confectionery Art | 2 | 1/1/0
CULN 2240 Internship | 2 | 0/0/2
CUST 1010 Wood Properties: Strength and Quality | 3 | 3/0/0

**Voice and Video Over Internet Protocol**

CVNP 2210 Voice, Video and Data Convergence | 4 | 2/0/0
CVNP 2212 Voice Over IP and IP Telephony | 4 | 2/0/0
CVNP 2214 Voice, Video and Data Convergence | 3 | 2/1/0
CVNP 2216 Voice over Internet Protocol (VoIP) and IP Telephony | 2 | 1/0/0
CVNP 2220 Video Over Internet Protocol | 4 | 2/0/0
CVNP 2222 Voice Video Over IP Systems Project | 1 | 2/0/0

**Custom Training**

CUST 1060 Occupational Safety and Risk Management | 2 | 2/0/0

**Course Descriptions**

**CULN 1122 Sanitation Certification**

This course covers the basics of safe food handling procedures, safe food storage, cleaning and sanitizing, and purchasing and receiving safe food. This course follows the FDA Model Food Code, and students will test for the Servsafe Certification exam at the conclusion of the class.

**Prerequisite:** None
**Corequisite:** None

**CULN 1124 Menu Planning and Merchandising**

This course covers the introduction to menus, including the design, copy writing and layout, as well as the application of food service marketing principles on which the success or failure of the modern restaurant depends.

**Prerequisite:** None
**Corequisite:** None

**CULN 2202 Meats**

This course covers the identification of meat cuts from beef, pork, lamb and veal and proper cooking and usage for fabricated cuts. It includes USDA inspection, quality and yield standards of meats as used in the food service industry.

**Prerequisite:** None
**Corequisite:** None

**CULN 2204 Breakfast Preparation Lab**

This course covers the hands-on preparation of meats, fish, poultry, soups, stocks, sauces, pasta, grains, starches and vegetables required in the production area in many food service operations. It also covers the hands-on application of meat cutting and processing, as well as other functions performed in the butcher shop area of the food service operation.

**Prerequisite:** None
**Corequisite:** None

**CULN 2206 Buffet and Garde Manger Lab**

This course covers the food art portion of entry-level positions in food service. It also provides an exposure to buffet service and some of the classical forms of food presentation and display.

**Prerequisite:** None
**Corequisite:** None

**CULN 2214 Quantity Food Preparation and Butcher Lab**

This course covers the hands-on preparation of meats, fish, poultry, soups, stocks, sauces, pasta, grains, starches and vegetables required in the production area for an existing converged network system. Students will take place in a commercial food service establishment under the supervision of the employer/designee.

**Prerequisite:** None
**Corequisite:** None

**CUST 1060 Occupational Safety and Risk Management**

This course covers the introduction to occupational safety and health in business and industry. It includes studying the Occupational Safety and Health Act, accident prevention techniques, job task analysis and safety design including ergonomics, job and system safety, empowering employees, and training employees for safe practices. Participants will discuss best practices to gain management and employee commitment to the development of a safety culture.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2210 Voice, Video and Data Convergence**

This course covers the theory and environmental impact of voice, video and data converged networks. Topics covered in this course include review of the medium and equipment used to transport converged signals and the different transport protocols supporting convergence. Converged network design includes incorporating green technologies, calculating power consumption, configuring and troubleshooting converged networks.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2212 Voice Over IP and IP Telephony**

This course covers the theory, installation, configuration and monitoring of traditional voice communications systems and voice communications systems designed to operate over an IP (Internet Protocol) network. Today's data communications networks use IP for address assignment, traffic identification, quality of service and other features required to transport multiple signals over one data connection. Topics covered in this course include components of business communications systems, voice mail, call centers, features, IP telephony call control protocols, codec algorithms and quality of service techniques.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2214 Voice, Video and Data Convergence**

This course covers the theory and environmental impact of voice, video and data converged networks. Topics covered in this course include review of the medium and equipment used to transport converged signals and the different transport protocols supporting convergence. Converged network design includes incorporating green technologies, calculating power consumption and performing an on-site evaluation for an existing converged network system.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2216 Voice over Internet Protocol (VoIP) and IP Telephony**

This course covers the theory, installation, configuration and monitoring of traditional voice communications systems and voice communications systems designed to operate over an IP (Internet Protocol) network. Today's data communications networks use IP for address assignment, traffic identification, quality of service and other features required to transport multiple signals over one data connection. Topics covered in this course include components of business communications systems, voice mail, call centers, features, IP telephony call control protocols, codec algorithms and quality of service techniques.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2220 Video Over Internet Protocol**

In this course the student will learn how to encode and decode video IP signals to be transported over converged networks and connect equipment to perform associated functions. Video conferencing, IPTV, HDTV, 3G cell phone video, content protection and other new technology formats will be explored and researched to give the student a better understanding of video over Internet protocol technologies.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2222 Voice Video Over IP Systems Project**

This is a capstone course for the Voice Video over Internet Protocol Certificate. Students will work on projects to design and configure a converged network and configure applications to run over the network. Students will analyze the environmental impact of their designs and perform testing and troubleshooting. Students will present their industry.

**Prerequisite:** None
**Corequisite:** None

**CVNP 2224 Video over Internet Protocol**

In this course the student will be introduced to applications and technologies developed to encode and decode digital video signals transported over converged networks. Video technology includes video formats, video conferencing applications, Internet Protocol television (IPTV) ecosystems, high definition television (HDTV), broadband television and video for personal device playback. The course will also review content protection practices.

**Prerequisite:** None
**Corequisite:** None

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## Diesel Equipment Technology - Case IH and New Holland

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<thead>
<tr>
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<th>CR</th>
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</tr>
</thead>
<tbody>
<tr>
<td>DCNH 1116</td>
<td>CNH (Case New Holland) Supervised Occupational Experience (SOE) I</td>
<td>3</td>
<td>0/0/3</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to Case New Holland equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

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<tbody>
<tr>
<td>DCNH 1118</td>
<td>CNH (Case New Holland) Supervised Occupational Experience (SOE) II</td>
<td>7</td>
<td>0/0/7</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to Case New Holland equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

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<tbody>
<tr>
<td>DCNH 2210</td>
<td>Mobile Hydraulics</td>
<td>4</td>
<td>2/2/0</td>
</tr>
</tbody>
</table>

This course covers the hydraulic components specific to Case New Holland farm and heavy equipment. This will include hydrotastic transmission, electric over hydraulic control valves and electronic control components. It will also include troubleshooting of five units with proper testing equipment used in up-to-date service centers.

Prerequisite: DSET1112 AND DSET1100

Corequisite: None

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</tr>
</thead>
<tbody>
<tr>
<td>DCNH 2218</td>
<td>CNH (Case New Holland) Supervised Occupational Experience (SOE) III</td>
<td>3</td>
<td>0/0/3</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to Case New Holland equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

## Diesel Equipment Technology - John Deere

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</thead>
<tbody>
<tr>
<td>DEER 1116</td>
<td>John Deere Supervised Occupational Experience (SOE) I</td>
<td>3</td>
<td>0/0/3</td>
</tr>
</tbody>
</table>

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 used in CNH equipment.

Prerequisite: None

Corequisite: None

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<tbody>
<tr>
<td>DEER 1118</td>
<td>John Deere Supervised Occupational Experience (SOE) II</td>
<td>7</td>
<td>0/0/7</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to John Deere equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

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</tr>
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<tbody>
<tr>
<td>DEER 2210</td>
<td>Mobile Hydraulics</td>
<td>4</td>
<td>2/2/0</td>
</tr>
</tbody>
</table>

This course covers the hydraulic components specific to John Deere heavy equipment. This will include hydrotastic transmission, electric over hydraulic control valves and electronic control components. It will also include troubleshooting of live units with proper testing equipment used in up-to-date service centers.

Prerequisite: DSET1112 AND DSET1100

Corequisite: None

## Dental

<table>
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</thead>
<tbody>
<tr>
<td>DENT 1100</td>
<td>Biomaterials</td>
<td>3</td>
<td>2/1/0</td>
</tr>
</tbody>
</table>

This is a foundation course that provides in-depth instruction and practice in identifying the materials, their purposes and properties as they are used during chairside and laboratory procedures. Material manipulation is a critical requirement of the lab component of this course. Laboratory safety measures and infection control are emphasized.

Prerequisite: None

Corequisite: None

<table>
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<tbody>
<tr>
<td>DENT 1102</td>
<td>Dental Anatomy</td>
<td>2</td>
<td>2/0/0</td>
</tr>
</tbody>
</table>

The lecture portion of the course introduces the student to basic terminology for understanding the structures that form the foundation for tooth function, normal anatomy of the oral cavity and tooth root morphology. Special topics include survey of dental anomalies, cavity classification and forensic dentistry.

Prerequisite: None

Corequisite: None

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<tbody>
<tr>
<td>DENT 1103</td>
<td>Introduction for Dental Health Care Providers</td>
<td>2</td>
<td>1/1/0</td>
</tr>
</tbody>
</table>

The student will be introduced to fundamental knowledge required in the practice of dentistry. Topics to be covered include blood-borne pathogens, concepts and procedures of infection control, medical emergencies, first aid in the dental setting and patient privacy rights.

Prerequisite: None

Corequisite: None

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<tbody>
<tr>
<td>DENT 1104</td>
<td>Dental Health Care Providers II</td>
<td>1</td>
<td>1/0/0</td>
</tr>
</tbody>
</table>

This course will build on student learning in Introduction to Healthcare Providers I. Students will be challenged to go beyond definitions and practices and understand the what, why and how of blood-borne pathogens, concepts, standards and procedures of infection control, medical emergencies, first aid in the dental setting and patient privacy rights.

Prerequisite: None

Corequisite: None

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<tr>
<td>DENT 1106</td>
<td>Dental Radiology Lecture</td>
<td>3</td>
<td>3/0/0</td>
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</tbody>
</table>

This course includes an overview of the history of X-ray development and a review of basic mathematics and radiation physics as they apply to X-ray production. Radiographic film and digital image quality are explored. Explanation of darkness chemistry, radiation safety and x-ray filters are covered. Other topics include interpretation of normal anatomy, dental film and digital image analysis, radiographic interpretation and evaluation, and quality assurance issues.

Prerequisite: None

Corequisite: None

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<tr>
<td>DEER 1116</td>
<td>John Deere Supervised Occupational Experience (SOE) I</td>
<td>3</td>
<td>0/0/3</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to John Deere equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>DEER 1118</td>
<td>John Deere Supervised Occupational Experience (SOE) II</td>
<td>7</td>
<td>0/0/7</td>
</tr>
</tbody>
</table>

Students will apply skill sets previously learned specific to John Deere equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

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</thead>
<tbody>
<tr>
<td>DEER 2210</td>
<td>Mobile Hydraulics</td>
<td>4</td>
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</tr>
</tbody>
</table>

This course covers the hydraulic components specific to John Deere heavy equipment. This will include hydrotastic transmission, electric over hydraulic control valves and electronic control components. It will also include troubleshooting of five units with proper testing equipment used in up-to-date service centers.

Prerequisite: DSET1112 AND DSET1100

Corequisite: None

## DEER 2218 John Deere Supervised Occupational Experience (SOE) III

3 0/0/3

Students will apply skill sets previously learned specific to John Deere equipment. Skill sets will be identified in a training plan developed by industry and instructor.

Prerequisite: None

Corequisite: None

## DEER 2230 ADV ENGINES AND FUEL SYSTEMS I

3 1/2/0

This course is designed to give students an understanding of medium- and heavy-duty diesel engines used in John Deere construction and forestry equipment. Engines being studied include but are not limited to John Deere, Isuzu and Yanmar. Areas of study include base engine components, intake and exhaust systems, emission control devices, lubrication systems, cooling systems and fuel systems.

Prerequisite: None

Corequisite: None

## DEER 2238 TRANSMISSIONS AND DRIVE SYSTEMS

4 1/3/0

This course covers procedures to test, troubleshoot and rebuild power shift and other specialized transmissions used on construction equipment as it relates to John Deere equipment.

Prerequisite: None

Corequisite: None

## DEER 2242 ADVANCED ENGINES AND FUEL SYSTEMS

6 2/4/0

This course is designed to give students an understanding of medium- and heavy-duty diesel engines used in Case New Holland farm and heavy equipment. This will include hydrotastic transmission, electric over hydraulic control valves and electronic control components. It will also include troubleshooting of five units with proper testing equipment used in up-to-date service centers.

Prerequisite: DSET1112 AND DSET1100

Corequisite: None

## DEER 2244 ADVANCED ENGINES AND FUEL SYSTEMS

6 2/4/0

This course is designed to give students an understanding of medium- and heavy-duty diesel engines used in John Deere construction and forestry equipment. Engines being studied include but are not limited to John Deere, Isuzu and Yanmar. Areas of study include base engine components, intake and exhaust systems, emission control devices, lubrication systems, cooling systems and fuel systems.

Prerequisite: None

Corequisite: None

## DEER 2250 ADV ENGINES AND FUEL SYSTEMS I

3 1/2/0

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 used in CNH equipment.

Prerequisite: None

Corequisite: None

## DEER 2320 TRANSMISSIONS AND DRIVE SYSTEMS

4 1/3/0

This course covers procedures to test, troubleshoot and rebuild power shift and other specialized transmissions used on agricultural equipment and industrial powered equipment as related to Case New Holland equipment. This course also includes final drives and related components including removal, repair, installation and adjustment of major units and components.

Prerequisite: DSET1110

Corequisite: None

## DEER 2328 TRANSMISSIONS AND DRIVE SYSTEMS

4 1/3/0

This course covers procedures to test, troubleshoot and rebuild power shift and other specialized transmissions used on agricultural equipment and industrial powered equipment as related to Case New Holland equipment. This course also includes final drives and related components including removal, repair, installation and adjustment of major units and components.

Prerequisite: DSET1110

Corequisite: None

## DEER 2330 ADVANCED ENGINES AND FUEL SYSTEMS I

6 2/4/0

This course is designed to give students an understanding of medium- and heavy-duty diesel engines used in Case New Holland farm and heavy equipment. Engines being studied include but are not limited to Cummins, Iveco, International Harvester and New Holland. Areas of study include base engine components, intake and exhaust systems, emission control devices, lubrication systems, cooling systems and fuel systems.

Prerequisite: DSET1102 AND DSET1104

Corequisite: None
### Dental Assisting

<table>
<thead>
<tr>
<th>Course #</th>
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</tr>
</thead>
<tbody>
<tr>
<td>DNAS 1103</td>
<td>Clinical Assisting I</td>
<td>6</td>
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<tr>
<td>DNAS 1105</td>
<td>Clinical Assisting II</td>
<td>5</td>
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<tr>
<td>DNAS 1106</td>
<td>Biodental Science</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>DNAS 1110</td>
<td>Advanced Functions</td>
<td>5</td>
<td>2/3/0</td>
</tr>
<tr>
<td>DNAS 1114</td>
<td>Dental Prac Management</td>
<td>2</td>
<td>2/0/0</td>
</tr>
<tr>
<td>DNAS 1119</td>
<td>Clinical Affiliations</td>
<td>5-6</td>
<td>None</td>
</tr>
<tr>
<td>DNAS 1143</td>
<td>Clinical Affiliations</td>
<td>6</td>
<td>0/0/6</td>
</tr>
<tr>
<td>DNAS 1210</td>
<td>Radiology Lab</td>
<td>1</td>
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</tr>
<tr>
<td>DNAS 1212</td>
<td>Radiology Lab II</td>
<td>1</td>
<td>0/1/0</td>
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</tbody>
</table>

This course includes an orientation to the history of dentistry, educational requirements, credentialing opportunities and professional associations for dental and allied dental careers. The student is provided with instruction in the use of dental equipment, instruments and supplies; principles of four-handed dentistry; concepts of infection control and instrument recirculation; management of medical and dental emergencies; and procedures related to oral diagnosis, preventive dentistry and restorative dentistry.

### Dental Hygiene

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>DNHY 1104</td>
<td>Dental Anatomy Lab</td>
<td>1</td>
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<tr>
<td>DNHY 1106</td>
<td>Head and Neck Anatomy</td>
<td>2</td>
<td>2/0/0</td>
</tr>
<tr>
<td>DNHY 1108</td>
<td>Oral Histology and Embryology</td>
<td>2</td>
<td>2/0/0</td>
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<tr>
<td>DNHY 1110</td>
<td>Principles I</td>
<td>2</td>
<td>2/0/0</td>
</tr>
<tr>
<td>DNHY 1112</td>
<td>Dental Hygiene Practice I</td>
<td>3</td>
<td>0/3/0</td>
</tr>
<tr>
<td>DNHY 1118</td>
<td>Oral Pathology</td>
<td>2</td>
<td>2/0/0</td>
</tr>
<tr>
<td>DNHY 1119</td>
<td>Dental Hygiene Principles II</td>
<td>4</td>
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</tr>
</tbody>
</table>

This course provides an introduction to dental hygiene with emphasis on the practice of preventive dentistry, OSHA standards, disinfectant/sterilants, formation of plaque and calculus, patient assessment and an introduction to the caries process and periodontal assessment.

This course covers the study of hard and soft tissues of the head and neck including the skeletal, muscular and nervous systems, with particular emphasis on the masticatory system.

This course includes a continuation of DNHY 1110 with continuing information on the fundamentals of dental hygiene, record keeping and basic instruction and care of special needs patients.
Course # | Course Title | CR | Lec/Lab/OJT
--- | --- | --- | ---
DNHY 1123 | Dental Hygiene Practice II | 5 | 0/5/0
This course is a continuation of DNHY 1112, Dental Hygiene Practice I, and introduces the student to further instrumentation theory, instrumentation techniques and procedures, clinical protocol, evaluation of medical/dental histories and radiographic surveys as prescribed by a dentist. This course provides the opportunity for the student to develop competence in clinical procedures.
Prerequisite: DNHY1112
Corequisite: None
DNHY 1124 | Pain Control Lab | 2 | 0/2/0
This course provides the dental hygiene student with the knowledge and skills necessary to administer local anesthesia and other methods of pain control during dental procedures without inducing detrimental physiological side effects.
Prerequisite: DNHY1106 AND DNHY1136
Corequisite: None
DNHY 1130 | Dental Hygiene Prin III | 1 | 0/0
This course covers the fundamentals of dental hygiene as they relate to advanced periodontal disease, the development of speed and an introduction to several advanced dental hygiene techniques. The course includes the study of rubber dam placement, sealants, orthodontic patients, debonding and intraoral photography.
Prerequisite: DNHY1123
Corequisite: None
DNHY 1132 | Dental Hygiene Pract III | 1 | 0/1/0
This course introduces dental hygiene students to basic drug categories, pharmacological pain control principles and various anesthesia techniques, with special emphasis on a succinct accounting of drugs as they relate to dentistry.
Prerequisite: None
Corequisite: None
DNHY 2210 | Dental Hygiene Prac IV | 2 | 2/0/0
This course is a continuation of DNHY 1130 and introduces the student to dietary counseling, with special emphasis on advanced dental hygiene techniques including periodontal assessment and debridement, power instrumentation and implant maintenance.
Prerequisite: DNHY1130
Corequisite: None
DNHY 2213 | Dental Hygiene Pract IV | 6 | 0/6/0
This course is a continuation of DNHY 1132 with emphasis on the treatment of moderate to advanced periodontal disease, the development of speed and an introduction to several advanced dental hygiene techniques.
Prerequisite: DNHY1132 AND the student must be accepted into the dental hygiene program and comply with the Dental Program Student/Faculty Handbook.
Corequisite: None
DNHY 2219 | Periodontology | 2 | 2/0/0
This course covers the pathogenesis, diagnosis and treatment of periodontal disease. Emphasis will include the progression of periodontal disease, diagnostic methods, treatment modalities, advanced instrumentation and the role of the dental hygienist as a periodontal co-therapist.
Prerequisite: None
Corequisite: None
DNHY 2220 | Dental Hygiene Prin V | 1 | 0/0
This course is a continuation of DNHY2210 and dental hygiene patient oral risk assessments. Special focus includes topics of interest to the graduating hygienist including smoking cessation, extraoral/ intraoral self exam, resume writing, interview skills, professional development, service to the community and involvement in the professional association.
Prerequisite: DNHY2210
Corequisite: None
DNHY 2223 | Dental Hygiene Pract V | 6 | 0/6/0
This course is a continuation of DNHY2213 with emphasis on the treatment of moderate to advanced periodontal disease, the development of speed and an introduction to several advanced dental hygiene techniques.
Prerequisite: DNHY2213 AND the student must be accepted into the dental hygiene program and comply with the Dental Program Student/Faculty Handbook.
Corequisite: None
DNHY 2226 | Community Dental Hygiene | 3 | 1/0/0
The lecture portion of this course introduces the student to the discipline's basic principles of dental public health, epidemiological methods and biostatistical measurement and analysis. The lab portion of this course enables the student to plan, implement and evaluate a community dental hygiene research project and participate in a community dental service project and screening.
Prerequisite: None
Corequisite: None
DNHY 2232 | Dental Hygiene Review | 1 | 1/0/0
This course is designed to assist students in reviewing content in preparation to write the National Board Dental Hygiene Examination.
Prerequisite: None
Corequisite: None

DNHY 2240 | Clinical Affiliation I | 1 | 0/0/1
Clinical rotations off campus in public health facilities to enhance dental hygiene clinical experience. The student will be introduced to a variety of dental hygiene experiences.
Prerequisite: None
Corequisite: DNHY2213
DNHY 2246 | Clinical Affiliation II | 1 | 0/0/1
Clinical rotations off campus in public health facilities to enhance dental hygiene clinical experience. The student will be introduced to a variety of dental hygiene experiences.
Prerequisite: None
Corequisite: DNHY2223

Diesel Equipment Technology

DSET 1100 | Diesel Equipment Fundamentals | 2 | 1/0/0
This course is designed to give the student an understanding of a diesel shop environment. Personal and shop safety will be emphasized. Hand tool, pneumatic tool, precision measuring tool and hardware identification, usage and safety will also be areas of study.
Prerequisite: None
Corequisite: None
DSET 1106 | Fuel Systems | 2 | 1/0/0
This course covers the fundamentals of diesel engine fuel systems identification, minor repair, testing and troubleshooting. Mechanical governor operation, fuel system operation, fuel system/governor adjustments and related engine operation are studied.
Prerequisite: None
Corequisite: None
DSET 1110 | Power Train I | 3 | 1/2/0
This course covers the operating principles, diagnosis and repair of drive train components. Components included will be clutches, mechanical transmissions, drive lines and drive axles.
Prerequisite: TINS1102 OR DSET1100
Corequisite: None
DSET 1112 | Hydraulics I | 4 | 2/2/0
This course covers the fundamentals of hydraulic systems. It is an introduction to hydraulic component operation, maintenance, repair and testing. These systems may be used in agricultural, industrial heavy equipment and trucks.
Prerequisite: None
Corequisite: None
DSET 1114 | Vehicle Brakes | 3 | 1/2/0
This course covers hydraulic and air brake system operation, service and diagnosis. Anti-lock braking systems will also be covered.
Prerequisite: None
Corequisite: None
DSET 1116 | Fall Supervised Occupational Experience | 3 | 0/0/3
Students will apply skill sets previously learned specific to their sponsoring dealer’s equipment and will also be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.
Prerequisite: None
Corequisite: None
DSET 1124 | Diesel Shop Management | 1 | 0/0/0
This course provides students an opportunity to visit John Deere, Case New Holland or general shops and work with on-site instructors at it relates to management procedures including parts, ordering inventory, repair order writing, payroll, employee-employer relations, customer relations and communication skills.
Prerequisite: None
Corequisite: None
DSET 1130 | Trans Elec/Start/Charge | 4 | 2/2/0
This course is an introduction to electrical systems. Students will learn how to use DVOM’s and their applications. Students will study electrical theory including Ohm’s law and its application to electrical systems. The course also introduces service procedures necessary to repair charging and starting system components. Electrical principles are applied to test and troubleshoot complete circuits as well as components of each. Fundamental rebuilding principles and system analysis are emphasized. Safe battery testing and service are performed.
Prerequisite: None
Corequisite: None
DSET 1132 | Introduction to Engine Theory | 2 | 2/0/0
This course introduces the theory of today’s diesel engines, including operation, repair and maintenance. Students will learn the proper industry procedures for removing, replacing, diagnosing, troubleshooting, rebuilding and assembling diesel engines.
Prerequisite: None
Corequisite: None
### COURSE DESCRIPTIONS

**Course #** | **Course Title** | **CR** | **Lec/Lab/OJT**
--- | --- | --- | ---
DSET 1134 | Introduction to Engines | 3 | 0/3/0
This course teaches students how to disassemble, analyze, rebuild, measure and adjust diesel engines and their components.

**Prerequisite:** None

**Corequisite:** None

DSET 1140 | Supervised Occupational Experience I | 7 | 0/0/7
Students will apply skill sets previously learned related to truck and/or other diesel-powered equipment and may be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

**Prerequisite:** None

**Corequisite:** None

DSET 1144 | Electrical Troubleshooting | 3 | 1/2/0
This course is a hands-on troubleshooting course that allows students to apply knowledge of DSET 1133. Students will be required to troubleshoot and repair a variety of equipment and vehicles.

**Prerequisite:** DSET 1130

**Corequisite:** None

DSET 2204 | Advanced Electrical and Equipment Systems | 3 | 1/2/0
This course covers failure analysis of electrical systems, the recognition of causes of failures and how to interpret a wiring diagram. Lab activities include the troubleshooting of heavy-duty electrical components, testing, inspecting and repair. Electrical meters will be used to diagnose, locate and repair failures. Lab work may include diagnosis, disassembly, inspection, repair, assembly and testing of program and customer-owned equipment.

**Prerequisite:** DSET 1100 AND DSET 1130

**Corequisite:** None

DSET 2206 | Electronic Controls | 3 | 1/2/0
This course covers electronic components used to control engines, transmissions, brakes and hydraulics used in modern equipment. The coursework will include analysis, testing, troubleshooting and replacement of components in a modern control system.

**Prerequisite:** DSET 1130 AND TRNS 1102 OR DSET 1100 AND DSET 1130

**Corequisite:** None

DSET 2210 | Mobile Hydraulics | 4 | 2/2/0
This course covers the hydraulic components used in farm and heavy equipment and trucks. This will include hydrostatic transmission, electric over hydraulic control valves and electronic control components. It will also include troubleshooting of live units with proper testing equipment used in up-to-date service centers.

**Prerequisite:** DSET 1112 AND DSET 1100

**Corequisite:** None

DSET 2214 | Suspension and Alignment | 3 | 1/2/0
This course will cover the procedures used in repair, inspection, rebuilding and alignment of steering and suspension systems. Vehicle Department of Transportation inspections will also be covered.

**Prerequisite:** DSET 1100

**Corequisite:** None

DSET 2218 | Advanced Fuels | 3 | 1/2/0
This course covers the application of the electronic fuel systems used on today’s diesel engines. Coursework covers fuel systems used on engines manufactured by Caterpillar, Cummins, Detroit, John Deere, CNH and others.

**Prerequisite:** DSET 1106

**Corequisite:** None

DSET 2220 | Internship | 3 | 0/0/3
This course is designed by the student and advisor in cooperation with industry to provide a job site training experience. The student will prepare an internship training plan reflecting skills to be developed on the internship site.

**Prerequisite:** TRNS 1102 AND TRNS 1106 AND TRNS 1110 OR DSET 1100

**Corequisite:** None

DSET 2230 | ADV Engines and Fuel Systems I | 3 | 1/2/0
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 including but not limited to Caterpillar, Cummins and Detroit diesel engines.

**Prerequisite:** None

**Corequisite:** None

DSET 2238 | Transmissions and Drive Systems | 4 | 1/3/0
This course covers procedures to test, troubleshoot and rebuild power shift and other specialized transmissions used on agricultural, industrial and diesel trucks. This course also includes final drives and related components including removal, repair, installation and adjustment of major units and components.

**Prerequisite:** DSET 1110

**Corequisite:** None

DSET 2240 | Supervised Occupational Experience II | 3 | 0/0/3
Students will apply skill sets previously learned related to truck and/or other diesel-powered equipment. Skill sets will be identified in a training plan developed by industry and instructor.

**Prerequisite:** None

**Corequisite:** None

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**Circuit Analysis**

**Course #** | **Course Title** | **CR** | **Lec/Lab/OJT**
--- | --- | --- | ---
ECE 1201 | Circuit Analysis I | 3 | 3/0/0
This course covers circuit variables and elements, resistive circuits, voltage and current laws, techniques of circuit analysis, network theorems, RL (Resistance Inductance), RC (Resistance-Capacitance) and RLC (Resistance-Inductance-Capacitance) circuits and computer-aided analysis.

**Prerequisite:** MATH 1135 AND PHYS 1411

**Corequisite:** ENG 1203, Circuit Analysis Lab will cover the laboratory component of this course.

ECE 1202 | Circuit Analysis II | 3 | 3/0/0
This course covers sinusoidal steady-state analysis, AC power, magnetically coupled circuits, Laplace transform methods, frequency response, basic filters, two-port networks and computer-aided analysis.

**Prerequisite:** ECE 1201

**Corequisite:** ECE 1203

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**Diesel Equipment Technology - Truck Option**

**Course #** | **Course Title** | **CR** | **Lec/Lab/OJT**
--- | --- | --- | ---
DTRK 1140 | Supervised Occupational Experience I | 7 | 0/0/7
Students will apply skill sets previously learned related to medium- and heavy-duty trucks at a sponsoring dealer or fleet shop. Students may be introduced to curriculum skill sets to be delivered in future semesters. Skill sets will be identified in a training plan developed by industry and instructor.

**Prerequisite:** None

**Corequisite:** None

DTRK 2214 | Suspension and Alignment | 3 | 1/2/0
This course will cover the procedures used in repair, inspection, rebuilding and alignment of steering and suspension systems. Vehicle Department of Transportation inspections will also be covered.

**Prerequisite:** TRNS 1100 OR DSET 1100

**Corequisite:** None

DTRK 2230 | Advanced Engines I | 3 | 1/2/0
This course is designed to give the student an understanding of the theory, operation, troubleshooting and repair of modern medium- and heavy-duty truck diesel engines. Areas of study include intake and exhaust systems, emission control devices and fuel systems on but not limited to the following manufacturers: Caterpillar, Cummins, Detroit, Navistar, Mack and Volvo truck diesel engines.

**Prerequisite:** None

**Corequisite:** None

DTRK 2238 | Transmissions and Drive Systems | 4 | 1/3/0
This course is designed to give the student an understanding of the theory, operation, troubleshooting and repair of modern medium- and heavy-duty truck transmission, differential and drive line components. Areas of study include the operation, inspection, disassembly and assembly of various manufacturers including but not limited to Allison, Eaton, Meritor, Rockwell and Mack.

**Prerequisite:** DSET 1110

**Corequisite:** None

DTRK 2240 | Supervised Occupational Experience II | 4 | 0/0/4
Students will apply skill sets previously learned related to medium- and heavy-duty trucks at a sponsoring dealer or fleet shop. Skill sets will be identified in a training plan developed by industry and instructor.

**Prerequisite:** None

**Corequisite:** None

DTRK 2242 | Advanced Engines and Fuel Systems | 6 | 2/4/0
This course is designed to give the student an understanding of the theory, operation, troubleshooting and repair of modern medium- and heavy-duty truck diesel engines. Areas of study include base engine components, intake and exhaust systems, emission control devices and fuel systems on but not limited to the following manufacturers: Caterpillar, Cummins, Detroit, Navistar, Mack and Volvo truck diesel engines.

**Prerequisite:** DSET 1132 AND DSET 1134

**Corequisite:** None
COURSE DESCRIPTIONS

Economics

ECON 1150 Essentials of Economics 3 3/0/0
Meets MnTC Goal Areas 2 and 5. This course is an introductory study of economics and exposes the student to a variety of economic concepts. In order to enjoy a successful career, people need to understand how economics impacts the environment in which they live and work. This course helps satisfy those needs by exploring the principles of microeconomics, macroeconomics and international economics. At the microeconomic level, students will learn how the choices they make affect particular markets. They will examine resource allocation and pricing structure by analyzing demand and supply applications. Students will survey the competitive environment by exploring the market structures of perfect competition, monopolistic competition, monopoly and oligopoly. At the macroeconomic level, students will learn about the business cycle by analyzing the gross domestic product (GDP), the inflation rate, the unemployment rate, deficit spending, the national debt and other economic indicators. They will also investigate the debate over activism and non-activism in monetary and fiscal policies. Finally, the student will examine international issues including tariffs/quotas, foreign exchange, the concept of comparative advantage and trends in globalization. This course is not intended for business or economics majors.

Prerequisite: None
Corequisite: None

ECON 2210 Macroeconomics 3 3/0/0
This course provides the student with a means to study economic principles as they relate to determinants of national income, national income accounting, business cycles, unemployment, inflation and aggregate expenditures. The course also examines macroeconomic policy and provides information to gain further understanding in the areas of fiscal policy, financial markets, money and banking, monetary policy, international policy and the varying viewpoints that have evolved throughout history, including the Keynesian and Monetarist schools of thought.

Prerequisite: None
Corequisite: None

ECON 2222 Microeconomics 3 3/0/0
Microeconomics stresses the concepts of scarcity, production possibilities, supply and demand curves, elastic and inelastic goods and services, competition, monopolies, oligopolies, poverty and income distribution in the United States. In general, microeconomics examines the functioning of individual industries and the behavior of the individual.

Prerequisite: None
Corequisite: None

ECON 2500 Environmental Economics 3 3/0/0
This course aims to equip students with the economic methods and tools to analyze basic environmental issues. It combines theoretical analysis with discussions on specific environmental policies as applied to water, air pollution, energy, climate change and human health issues. Within these examples, topics that will be covered include the microeconomic analysis of environmental regulation, the problem of social cost, policy instrument choice, enforcement of regulations and estimating benefits of environmental improvements.

Prerequisite: ECON2210 OR ECON2222
Corequisite: None

English Language Learners

ELL 50 English Language Learner Foundations 4 3/1/0
This grammar-based course is for non-native learners of English and is designed to prepare students to succeed in college-level fundamental courses. The course supports progress toward fluency in the English skills areas of speaking, listening, reading and writing through intensive study of grammatical structures. Content is chosen especially to provide sound models for needed basic written forms.

Prerequisite: None
Corequisite: None

ELL 60 English Language Learner Reading 3 3/0/0
This reading course is for non-native learners of English. Students will learn the skills and vocabulary necessary to read college-level materials with emphasis given to effective note taking and summarizing. Students will engage in frequent large and small group discussions of reading material and be exposed to a variety of reading strategies.

Prerequisite: None
Corequisite: None

ELL 1120 English Language Learner Writing 4 4/0/0
This writing course is for non-native learners of English and is designed to prepare students to succeed in college-level fundamental writing courses. Students will learn short essay form for summary and interpretation. Longer five-paragraph form will be studied for essays in a variety of rhetorical modes.

Prerequisite: None
Corequisite: None

ELL 1175 English Language Learner Listening Comprehension and Speaking 3 3/0/0
This course for non-native learners of English continues the development of listening and speaking skills necessary for participating in college-level classroom discussion, incorporates oral presentation and fosters critical listening skills needed for taking notes and understanding lectures.

Prerequisite: None
Corequisite: None

Electrical Lineworker

ELWT 1102 Electrical Line Worker Theory I 4 2/2/0
This course provides the student with basic electrical theory involved in the production and use of electrical energy. In addition, the student practices basic direct current circuitry calculations and rigging skills including basic knots and splices pertaining to the electrical industry.

Prerequisite: None
Corequisite: None

ELWT 1104 Electrical Structure Installation 5 2/3/0
This course provides the student with the introductory knowledge and skills necessary to properly install electrical structures with hand tools and with mechanized structure installation machinery.

Prerequisite: None
Corequisite: None
**Course #| Course Title| CR| Lec/Lab/OJT**
---|---|---|---
ELWT 1106 Climbing Electrical Structure | 4 | 0/4/0 | This course provides the student with the knowledge and skills to safely climb and frame various electrical structures to heights of 50 feet. Topics include free-hand and safety-strap climbing, and installation and removal of pole line hardware.  
**Prerequisite:** None  
**Corequisite:** None
ELWT 1108 Construction of Overhead Structures | 3 | 0/3/0 | This course provides the student with the technical understanding and skill necessary to construct overhead high voltage structures. Topics include interpretation of industry specification manuals, identification of overhead hardware, construction techniques and tool use.  
**Prerequisite:** None  
**Corequisite:** None
ELWT 1110 Line Worker Theory II | 4 | 2/2/0 | This course provides the study of the principles of alternating current high voltage distribution circuitry. Included in this course are mathematical computation of AC power, conductor application including practice at arbor rodding, hand and pre-formed ties, overvoltage and overcurrent installations, and street lighting circuits.  
**Prerequisite:** ELWT1102  
**Corequisite:** None
ELWT 1111 Transformers | 2 | 0/2/0 | This course provides the student with the knowledge and skills necessary for mounting and connecting transformers to primary and secondary systems. The course will also cover paralleling of closed and open banks.  
**Prerequisite:** ELWT1108  
**Corequisite:** ELWT1110
ELWT 1113 Line Construction Reports | 2 | 2/0/0 | This course provides the student with an understanding of the design of line construction drawings and equipment installation orders.  
**Prerequisite:** ELWT1108 AND ELWT1110  
**Corequisite:** None
ELWT 1116 Pole Top and Bucket Rescue | 1 | 0/1/0 | This course provides the student with an understanding of procedures necessary to complete a rescue of a line worker disabled while on a pole or in an aerial device.  
**Prerequisite:** ELWT1106  
**Corequisite:** None
ELWT 1118 Field Construction I | 3 | 0/3/0 | This course covers the installation of single-phase high voltage systems under actual field conditions. The overhead construction component of the course includes structural assembly, including grounding requirements, gaging, conductor installation including stringing and tying, single-phase transformer, capacitor and regulator installation. The second component of the course is underground installation, covering trencher operation, primary and secondary cable termination, services, pad mount transformers and sectionalizing cabinets, and street lighting.  
**Prerequisite:** ELWT1106  
**Corequisite:** None
ELWT 1120 Field Construction II | 3 | 0/3/0 | This course covers the installation of multi-phase high voltage systems under actual field conditions. The overhead section will cover structure assembly including grounding, structural gaging, conductor installation including stringing and tying, multi-phase transformer installation, capacitor installation, regulator installation, and the use of protective cover-up material and hot sticks. The underground section will cover multiple cable installation, primary and secondary cable termination, three-phase pad mount transformer installation and multi-phase sectionalizing cabinet installation.  
**Prerequisite:** None  
**Corequisite:** None
ELWT 1122 Field Construction III | 3 | 0/3/0 | This course gives the student a basic understanding of overhead transmission structure construction and installation requirements for 69KV systems. Students will also participate in two industry hot line schools, one sponsored by the Minnesota Municipal Utilities Association and the other by the Minnesota Rural Electric Cooperatives.  
**Prerequisite:** ELWT1120  
**Corequisite:** None
ELWT 1130 Electrical Line Worker Internship | 2 | 0/0/2 | This course will concentrate on the student receiving apprentice line work skills under the supervision of an appropriate industry representative.  
**Prerequisite:** Instructor approval  
**Corequisite:** None
ELWT 1132 Electrical Line Worker Internship | 3 | 0/0/3 | In this course, the student will learn apprentice line work skills under the supervision of an appropriate industry representative.  
**Prerequisite:** Instructor approval  
**Corequisite:** None

**Course #| Course Title| CR| Lec/Lab/OJT**
---|---|---|---
ENGL 1101 Ethics and the Engineering Profession | 3 | 3/0/0 | This course covers ethical theories, professional responsibilities and social impacts as they relate to engineering teamwork skills, design and engineering careers.  
**Prerequisite:** None  
**Corequisite:** None
ENGL 0040 Reading Strategies | 3 | 3/0/0 | This developmental reading course is designed to provide students with a foundation for more advanced reading and study skills. Students will develop increased proficiency in reading and understanding college-level texts. Students will learn to recognize the main ideas in articles and chapters, summarize content and read actively and critically. In addition, the course will concentrate on reading-related study skills such as effective note-taking from texts, proper annotation of texts and reading skills for effective test-taking. An emphasis on building college-level vocabulary will also be stressed.  
**Prerequisite:** None  
**Corequisite:** None
ENGL 0050 Writing Fundamentals | 3 | 3/0/0 | This basic course in mechanics, usage, sentence patterns, paragraphing and essay development is designed to provide a foundation for essential writing skills. Students will begin the process of close reading in preparation for college English courses.  
**Prerequisite:** None  
**Corequisite:** None
ENGL 0096 Academic Literacy | 6 | 6/0/0 | This hybrid course integrates college-level reading and writing. Students will practice various reading strategies appropriate to different types of texts, including a book-length text. In actively reading the material, students will summarize, interpret and analyze text, and they will respond to these readings through class discussion, journals and group work. Students will also practice all stages of the writing process as they create paragraphs, essays and other types of writing.  
**Prerequisite:** Placement by assessment  
**Corequisite:** None
ENGL 1101 College Writing | 3 | 3/0/0 | This course focuses on the development of language skills necessary for college writing. The course is designed to help students improve their writing through a process approach. Students will consider purpose and audience, read and discuss writing and further develop their own writing processes through successive revisions to produce polished drafts. Course work will include an introduction to argumentative writing, writing from sources and short research project.  
**Prerequisite:** Completion of ENGL0050 with a grade of C or higher and completion of ENGL0040, OR ENGL0096 with a grade of C or higher OR placement in ENGL1101. (because of entrance examination score)  
**Corequisite:** None
ENGL 1205 Writing About Literature | 3 | 3/0/0 | This course covers ethical theories, professional responsibilities and social impacts as they relate to engineering teamwork skills, design and engineering careers.  
**Corequisite:** None
ENGL 1210 Writing About Current Issues | 3 | 3/0/0 | This course covers ethical theories, professional responsibilities and social impacts as they relate to engineering teamwork skills, design and engineering careers.  
**Corequisite:** None
ENGL 1215 Professional and Technical Writing | 3 | 3/0/0 | This course covers ethical theories, professional responsibilities and social impacts as they relate to engineering teamwork skills, design and engineering careers.  
**Corequisite:** None
ENGL 2200 Introduction to Creative Writing | 3 | 3/0/0 | This course covers ethical theories, professional responsibilities and social impacts as they relate to engineering teamwork skills, design and engineering careers.  
**Corequisite:** None
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<tbody>
<tr>
<td>ENGL 2221</td>
<td>Creative Writing: Poetry</td>
<td>3</td>
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<tr>
<td>ENGL 2222</td>
<td>Creative Writing: Fiction</td>
<td>3</td>
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<tr>
<td>ENGL 2223</td>
<td>Creative Writing: Personal Narrative</td>
<td>3</td>
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<td>ENGL 2224</td>
<td>Introduction to Literature: Short Stories</td>
<td>3</td>
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<td>ENGL 2235</td>
<td>Intro to Literature: Short Prose</td>
<td>3</td>
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<tr>
<td>ENGL 2239</td>
<td>Nature Writers</td>
<td>3</td>
<td>0/0/0</td>
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<tr>
<td>ENGL 2300</td>
<td>American Ethnic Literature</td>
<td>3</td>
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<tr>
<td>ENGL 2301</td>
<td>Introduction to Literature, Native American Focus</td>
<td>3</td>
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<tr>
<td>ENGL 2302</td>
<td>American Ethnic Literature</td>
<td>3</td>
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<tr>
<td>ENGL 2310</td>
<td>Introduction to Mythology</td>
<td>3</td>
<td>0/0/0</td>
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<tr>
<td>ENGL 2314</td>
<td>Introduction to Shakespeare</td>
<td>3</td>
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<tr>
<td>ENGL 2321</td>
<td>Women in Literature</td>
<td>3</td>
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<tr>
<td>ENGL 2322</td>
<td>Banned Literature</td>
<td>3</td>
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<tr>
<td>ENGL 2323</td>
<td>Horror and Supernatural Fiction</td>
<td>3</td>
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<tr>
<td>ENGL 2328</td>
<td>American Literature</td>
<td>3</td>
<td>0/0/0</td>
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<tr>
<td>ENGL 2322</td>
<td>Creative Writing: Personal Narrative</td>
<td>3</td>
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<tr>
<td>ENGL 2322</td>
<td>Creative Writing: Poetry</td>
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<tr>
<td>ENGL 2323</td>
<td>Intro to Literature: Drama</td>
<td>3</td>
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<tr>
<td>ENGL 2323</td>
<td>Intro to Literature: Novel</td>
<td>3</td>
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<tr>
<td>ENGL 2328</td>
<td>American Literature</td>
<td>3</td>
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### Engineering

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<tbody>
<tr>
<td>ENGR 1100</td>
<td>Project Management</td>
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<tr>
<td>ENGR 1118</td>
<td>Engineering Applications</td>
<td>3</td>
<td>3/0</td>
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<tr>
<td>ENGR 1126</td>
<td>Engineering Graphics</td>
<td>3</td>
<td>1/2</td>
</tr>
<tr>
<td>ENGR 1132</td>
<td>Office Systems and Equipment</td>
<td>2</td>
<td>1/0</td>
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<tr>
<td>ENGR 2210</td>
<td>Engineering Mechanics I</td>
<td>3</td>
<td>3/0</td>
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<tr>
<td>ENGR 2220</td>
<td>Engineering Mechanics II</td>
<td>3</td>
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### Electrical Lineworker

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<tbody>
<tr>
<td>ENST 2222</td>
<td>Blueprint Reading for Energy Industry</td>
<td>2</td>
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### Entrepreneurship

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<tr>
<th>Course #</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENTR 1100</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
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This course introduces the theory and application of dynamics of particles and rigid bodies. Topics include the kinematics and kinetics of particles and rigid bodies (translational and rotational), principles of work and energy, and principles of impulse and momentum.

Corequisite: ENGR2210 AND MATH1135

This course provides an introduction to the study of stress, strain, deformation and failure of elastic bodies subjected to external forces. Topics include the relationships between the applied loads and the resulting stresses and deformations in an elastic body, stress-strain relations and the design of structural members subjected to known loads.

Corequisite: ENGR2210

This course is designed to provide students with a monitored meaningful work experience related to their field of interest. This experience will increase their employability and enhance their life skills. Completion of this course requires a written report and an evaluation from the student’s supervisor. Each internship is an individualized experience, therefore this course is offered with variable credits. The student may choose from 1, 2, or 3 credits as prearranged with the internship site supervisor and corresponding faculty. Each credit will require a minimum of 45 hours of off the job learning. This course will be graded pass/fail only.

Corequisite: Instructor approval

This course is designed to explore the principles and practices of health and safety in an energy services-related construction environment. Topics covered in this course include personal protective equipment, safe work practices, hazardous materials, employee protection and regulations of the Environmental Protection Agency (EPA), Occupational Safety and Health Act (OSHA) and pertinent safety codes/standards.

Corequisite: None

This course covers basic information to help the student understand GPS uses in the utility industries, data collection options, processing the collected data and field procedures used to plan a utility distribution route.

Corequisite: None

This course is designed to introduce students to the entrepreneurial process from conception to birth of a new venture. Students will examine elements in the entrepreneurial process - personal, sociological and environmental - that give birth to a new enterprise. Critical factors for starting a new enterprise such as alternative career prospects, family, friends, role models, the state of the economy and the availability of resources will be explored. Students will be introduced to practical tools they can use to further their careers in business, both in entrepreneurship and in more traditional company environments. This course simulates the experiences that entrepreneurs undergo in conceiving, launching and operating new businesses. The course enables students to evaluate an entrepreneurial career for themselves. In doing so, it provides aspiring entrepreneurs with a framework for selecting, funding and starting their own new ventures.

Corequisite: None
<table>
<thead>
<tr>
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<tr>
<td>ENTR 1400</td>
<td>Opportunity Analysis</td>
<td>3</td>
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<td>ENTR 1800</td>
<td>Business Internship</td>
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<td>ENTR 2200</td>
<td>Entrepreneurial Field Studies</td>
<td>3</td>
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<td>ENTR 2220</td>
<td>Business Ethics/Professionalism</td>
<td>3</td>
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<td>ENTR 2222</td>
<td>Business Plan Development</td>
<td>3</td>
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<tr>
<td>EQSC 1050</td>
<td>Equine Anatomy</td>
<td>3</td>
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<tr>
<td>EQSC 1060</td>
<td>Equine Reproduction and Nutrition</td>
<td>3</td>
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<tr>
<td>EQSC 1130</td>
<td>Stable Operations I</td>
<td>1</td>
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<tr>
<td>EQSC 1131</td>
<td>Stable Operations II</td>
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<tr>
<td>EQSC 1140</td>
<td>Western Horsemanship</td>
<td>3</td>
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<tr>
<td>EQSC 1150</td>
<td>Fundamentals of Riding Instruction</td>
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<td>EQSC 1160</td>
<td>English Equitation</td>
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<tr>
<td>EQSC 1170</td>
<td>Introduction to Horse Training</td>
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<td>EQSC 1180</td>
<td>Equine Evaluation</td>
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<tr>
<td>EQSC 1190</td>
<td>Farrier Science</td>
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<tr>
<td>EQSC 1200</td>
<td>Equine Events Management</td>
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<tr>
<td>EQSC 2200</td>
<td>Recognition and Management of Equine Disorders</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>EQSC 2300</td>
<td>Applied Stable Operations</td>
<td>3</td>
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**Equine Science**

- **EQSC 1001 Introduction to Equine Science** 1/1/0
  - This course introduces the student to the basics of equine breeds, types of horses, including characteristics and uses, and horse industry management. It will also cover aspects of health and management.
  - Prerequisite: None
  - Corequisite: None

- **EQSC 1050 Equine Anatomy** 3/2/1
  - This course provides an overview of equine anatomy, physiology, and disease management. It will also cover aspects of disease and surgery.
  - Prerequisite: None
  - Corequisite: None

- **EQSC 1060 Equine Reproduction and Nutrition** 3/3/0
  - This course introduces the student to the management of the breeding stallion, including hormones and embryo transfer. It will also cover aspects of nutrition.
  - Prerequisite: None
  - Corequisite: None

- **EQSC 1130 Stable Operations I** 1/0/1
  - Students will have hands-on experience working in an operational equine facility including training, boarding, and care.
  - Prerequisite: None
  - Corequisite: None

- **EQSC 1131 Stable Operations II** 2/1/0
  - Students will have hands-on experience working in an operational equine facility such as training, boarding, and care.
  - Prerequisite: None
  - Corequisite: None
### Fire Department Company Officer

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<tr>
<td>EQSC 2500</td>
<td>Equine Internship</td>
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<td>EQSC 2501</td>
<td>Equine Internship</td>
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### Esthetist

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<td>ESTH 1801</td>
<td>Advanced Skin Treatments</td>
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<td>ESTH 1808</td>
<td>Advanced Skin Treatments</td>
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### Fire Inspection and Code Enforcement

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<tbody>
<tr>
<td>FIRE 1140</td>
<td>Fire Inspection and Code Enforcement</td>
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### Fire Prevention

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<tr>
<td>FIRE 2050</td>
<td>Fire Prevention</td>
<td>3</td>
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<tr>
<td>FIRE 2059</td>
<td>Strategy and Tactics</td>
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### Fire Protection Systems

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<tr>
<td>FIRE 2040</td>
<td>Fire Protection Systems</td>
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### Firefighter I and II

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<th>Course Title</th>
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<tbody>
<tr>
<td>FIRE 1100</td>
<td>Introduction to Fire Service</td>
<td>2</td>
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<tr>
<td>FIRE 1106</td>
<td>Firefighter I and II</td>
<td>3</td>
<td>3/0/0</td>
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<td>FIRE 1108</td>
<td>Firefighter I and II Skills</td>
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<td>FIRE 1130</td>
<td>Technical Rescue</td>
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### Fire Instructor I

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<td>FIRE 2030</td>
<td>Fire Instructor I</td>
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### Fire Protection Systems

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<td>FIRE 2040</td>
<td>Fire Protection Systems</td>
<td>3</td>
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### College Success

**FYE 1101 First Year Experience**  
3  3/0/0  
This course is designed to help M State students understand and develop critical and creative thinking skills associated with a college academic experience, make social adaptations to a new environment and make connections with faculty, staff and resource offices. Topics include an understanding of individual risks and barriers, multiculturalism, life and career planning and personal responsibility. This course is also designed to help students develop the basic skills necessary for academic success in college. Additional topics to be discussed may include but are not limited to time management, study skills, note- and test-taking skills, motivation, and community and campus resources.  
**Prerequisite:** None  
**Corequisite:** None

### Graphic Design Technology

**GDTC 1100 Macintosh Production Processes**  
3  2/1/0  
This course covers general processes, workflow methods and utilization of the Macintosh Operating System features in a graphic design or production environment.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 1113 Design and Layout I**  
3  2/1/0  
As the first of three layout courses in a series, this course introduces students to the basic elements and principles of design. Students will produce a variety of projects that will familiarize them with basic design theories, branding philosophies and production techniques. In addition to hand-rendered projects, students will also begin to learn technical layout skills in Adobe InDesign.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 1115 Design and Layout II**  
3  2/1/0  
As the second of three layout courses in a series, students will expand upon their basic design knowledge by learning advanced methods of style, typography, layout grids, identity development and branding. Increasingly complex projects will require students to employ more sophisticated methods of research, concept development, design strategy and assessment. Students will create a variety of projects in Adobe software.  
**Prerequisite:** GDTC1113  
**Corequisite:** None

**GDTC 1126 Digital Photography**  
3  2/1/0  
In this course students will develop basic photographic skills and knowledge using a digital camera for a variety of assignments.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 1134 Electronic Drawing I**  
3  2/1/0  
This course covers fundamental functions of Adobe Illustrator or other vector-based equivalent instructor-designated software to create basic illustrations and layout.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 1144 Electronic Drawing II**  
3  2/1/0  
This course covers the use of Adobe Illustrator or equivalent instructor-designated vector-based software using the Macintosh computer to create and manipulate electronic illustrations, logos and artwork.  
**Prerequisite:** GDTC1134  
**Corequisite:** None

**GDTC 1150 Process Printing Theory**  
3  3/0/0  
This course provides foundational theory on print process as well as printing terminology. Focus is on theory and not on application of technology, using books, lectures and industry tours, if available.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 2203 Electronic Image Manipulation**  
3  2/1/0  
This course covers the fundamental functions of Adobe Photoshop or other raster-based equivalent software to manipulate and combine digital images.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 2212 Design and Layout III**  
3  2/1/0  
As the third of three layout courses in a series, this course focuses on brand and identity development. Each student develops his or her own fictitious company that will include a visual identity and supporting brand materials. Additional explorations of these concepts are explored in the form of self-promotional projects. Special emphasis is placed on research, marketing techniques, rationale and presentation.  
**Prerequisite:** GDTC1113 AND GDTC1115  
**Corequisite:** None

**GDTC 2214 Integrated Graphic Design**  
3  2/1/0  
This course focuses on the advanced integration of Adobe software technology and graphic design application. Coursework will include a continuation of branding development and design of grid systems, advanced typographic application, color theory application and development of written and verbal design rationale.  
**Prerequisite:** GDTC2278 AND GDTC2244  
**Corequisite:** None

**GDTC 2238 Layout and Design Studio**  
3  1/2/0  
Students will produce design projects with content and media of their particular interest. Work will be completed on a contractual basis between the student and instructor. Additional projects and activities will be assigned to gain experience in industry and client processes. Specific emphasis will be placed on refining skills and producing professional-level projects for student portfolios.  
**Prerequisite:** GDTC2203 AND GDTC1115 AND GDTC2242 AND GDTC2212  
**Corequisite:** None

**GDTC 2240 Lighting Techniques**  
3  1/1/0  
In this course students will develop an understanding of natural and indoor lighting. They will also demonstrate the capabilities of flash-mount lighting, demonstrate their ability to effectively use multiple flash functions, settings and techniques; and demonstrate proper use and settings of strobe lighting components. Students will also learn how to use settings for box and umbrella lighting techniques, critique lighting methods used in different venues and demonstrate soft box lighting techniques for product photography.  
**Prerequisite:** None  
**Corequisite:** None

**GDTC 2242 Electronic Publishing**  
3  2/1/0  
Students will learn in-depth technical skills necessary for page layout design. A variety of assigned design projects will teach students to effectively incorporate type and imagery in single- and multiple-page documents. These projects will involve simple to complex tasks that will reinforce students’ basic design skills.  
**Prerequisite:** GDTC1113  
**Corequisite:** None

**GDTC 2244 Advanced Electronic Imaging**  
3  2/1/0  
This course covers digital image creation, manipulation and preparation for output using a variety of advanced functionality Adobe Photoshop or equivalent instructor-designated raster-based software.  
**Prerequisite:** GDTC2203  
**Corequisite:** None

**GDTC 2246 Advanced Photography and Imaging**  
4  2/2/0  
In this course students will learn how to photograph in Raw File Format (RAW). Students will demonstrate setting components for Raw File Format and develop a clear understanding of the different computer file formats, file sizes, resolution, pixels per inch (PPI) and mega pixels. They will also demonstrate color correction; red, green, blue (RGB), cyan, magenta, yellow and black (CMYK). Students will identify CMYK profiles, develop a high degree of competency in manipulating photographs using Photoshop, and understand the importance of computer monitor calibration for color quality. Additionally, students will demonstrate advanced photography framing techniques and focus on how various lenses, aperture settings and film speeds work together.  
**Prerequisite:** GDTC1126  
**Corequisite:** None

**GDTC 2258 Graphic Design Professional Practices**  
3  2/1/0  
This course addresses the professional practice of graphic design technology. The course will cover interviewing skills, presentation techniques, freelance business operation, proposals and management, resume and cover-letter writing, job research/job offer and portfolio preparation.  
**Prerequisite:** GDTC2212 AND GDTC2278  
**Corequisite:** None

**GDTC 2276 Graphic Design Internship**  
3  0/0/3  
Students are placed temporarily in a partnering graphic industry establishment where they are able to utilize their graphic design technology skills in a real-world experience.  
**Prerequisite:** GDTC2203 AND GDTC2212  
**Corequisite:** None

**GDTC 2278 Digital Preflight**  
3  2/1/0  
Students will create and analyze electronic files to identify and resolve potential conflicts that may arise in different production processes. A variety of design projects will be produced using Adobe applications, with an emphasis on file construction and production preparation.  
**Prerequisite:** GDTC2242  
**Corequisite:** None
**Geography**

GEOG 1110 World Geography 3 3/0/0
Meets MnTC Goal Areas 5 and 8. Students will gain an understanding and appreciation of the spatial relationship of the physical and human elements of our world with an emphasis on the interdependence of nations and peoples. Geography describes the earth's environments and gives character to places through words, maps and graphics. This course will explore these elements and their contributions to the diversity of world geographics. Students will become aware of how the world and the earth's people interact in local regions and in patterns around the globe.

Prerequisite: None
Corequisite: None

GEOG 1160 Global Physical Geography 3 3/0/0
Meets MnTC Goal Areas 8 and 10. This course emphasizes the interactions of biological, geographical and climactic systems in the development of the patterns of regional environments on the surface of the earth and their interactions with human activities.

Prerequisite: None
Corequisite: None

**Global Studies**

GLST 1121 Humanities Italy 3 3/0/0
Meets MnTC Goal Areas 6 and 8 and is taken in conjunction with Humanities 1120: Culture of Italy and includes travel abroad to Italy. The content of this course aligns with curriculum materials studied in the corequisite course and will serve as a reinforcement of the Italian culture and provide an understanding of the integration of the arts within the culture.

Prerequisite: None
Corequisite: None

GLST 1126 Cultures of Italy and Greece II 3 3/0/0
Meets MnTC Goal Areas 6 and 8. This course is taken in conjunction with Humanities 1125: Cultures of Italy and Greece and includes travel abroad to Italy and Greece. The content of this course aligns with curriculum materials studied in the corequisite course and will serve to reinforce the student's understanding of the integration of the arts in the cultures of Italy and Greece.

Prerequisite: None
Corequisite: None

GLST 1510 Global Studies: Natural Science 3 3/0/0
Meets MnTC Goal Areas 3 and 8. This travel-abroad course combines a classroom component with a travel experience which includes scheduled academic activities in international locations as determined by the instructor. Students will study and experience unique ecosystems and biodiversity, as well as cultural and societal differences of the travel abroad location. This course includes field or lab-like activities, including a field notebook and ecosystem analysis.

Prerequisite: Permission of the instructor is required
Corequisite: None

GLST 2291 Humanities British Isles 3 3/0/0
Meets MnTC Goal Areas 6 and 8. This course is taken in conjunction with Humanities 2281: Culture of the British Isles and includes travel abroad to Ireland, Wales and England. The content of this course aligns with curriculum materials studied in the prerequisite course and will serve as a reinforcement of the culture of the British Isles and an understanding of the integration of the arts within the cultures.

Prerequisite: None
Corequisite: HUM2281

**Golf Management**

GOLF 1100 Rules of Golf 1 1/0/0
This course reviews the rules of golf in detail. Students develop a clear understanding of how to navigate the rule book by studying The Rules of Golf and The Decisions on the Rules of Golf. Emphasis is placed on practical hands-on application of the rules and decisions on the golf course. Proper course set-up and marking a golf course for an official USGA event are also discussed. The course prepares students to take the USGA Rules Exam.

Prerequisite: None
Corequisite: None

GOLF 1101 Golf Club Repair 1 0/1/0
This course introduces students to the art of golf club design and repair. Focus is on the technology and techniques involved, the correct processes by which clubs are properly designed and repaired, and the equipment currently available to custom design and repair in today's industry. Custom design and repair lab setup and establishing a successful design and repair business are also discussed.

Prerequisite: None
Corequisite: None

GOLF 1102 Tournament Operations 1 1/0/0
The course provides an overview of golf tournament operations. Students establish, facilitate, design and operate a golf tournament. Emphasis is on the checklist required to operate a successful golf tournament. Calligraphy, tournament types and tournament marketing are also discussed.

Prerequisite: None
Corequisite: None

GOLF 1200 Introduction to Golf Fundamentals and Methods 3 2/1/0
This course discusses the fundamentals of golf necessary to play at the beginning recreational level. It includes discussion of rules, etiquette, equipment and terminology. The course will be a combination of classroom lecture and golf course experience.

Prerequisite: None
Corequisite: None

GOLF 2100 Pro Shop Operations and Management 3 3/0/0
This course introduces students to the role of management in golf facility operations. Emphasis is on the administration of course procedures, tee times and retail space. Pro shop operations and the impact on customer and player relations are analyzed. Player performance analysis and instructional methodology are also discussed.

Prerequisite: None
Corequisite: None

GOLF 2200 Turf Management 3 3/0/0
This course introduces students to the management of golf course turfgrass and landscaping. Focus is on the ecology of turf, maintenance operations, irrigation and the equipment necessary for course care. Pest and weed control management, chemical handling and the environmental impact of golf are also discussed.

Prerequisite: None
Corequisite: None

GOLF 2402 Golf Internship 1-3 None
This course provides students with the opportunity to apply knowledge and skills in an operational golf environment. Students will perform activities in an employer-supervised industry setting that are consistent with program outcomes. This course will emphasize the duties golf professionals face in industry regarding communication, decision-making, professional and ethical behavior, organizational policies, time and resource management, and customer service. This course may be repeated for credit.

Prerequisite: None
Corequisite: None

GOLF 2500 Fundamentals of Golf Instruction 3 3/0/0
This course provides the student with the materials and means to teach the fundamentals of the golf swing. Emphasis is on the skills it takes to be an instructor of golf lessons. These skills include but are not limited to communication, patience, coordination, knowledge of the golf swing, troubleshooting an individual's swing, and the ability to instruct both individuals and groups.

Prerequisite: None
Corequisite: None

**Heating**

HEAT 2218 Gas Heating 2 1/1/0
This course covers gas heating units, primarily furnaces. Emphasis is placed on understanding the operating systems and the operating sequence as it exists within the furnace, including mechanical, electrical and combustion. Diagnosis and repair of malfunctioning furnaces is a significant portion of this course.

Prerequisite: None
Corequisite: None

HEAT 2220 Oil Heating 2 1/1/0
This course covers the use of oil as a means used to heat various media including air and water.

Prerequisite: CONE1102 AND PLBG1128
Corequisite: None

**History**

HIST 1110 Western Civilization: Ancient-1400s 3 3/0/0
Meets MnTC Goal Areas 5 and 8. This course provides a discussion of the political, economic, cultural and social factors which have shaped the history of the Western world. Topics include Mesopotamia, the Hebrews, the Greeks, the Romans, the rise of Christianity, feudalism and manorialism, the rise of Islam, the Merovingians and the Carolingians.

Prerequisite: None
Corequisite: None

HIST 1111 Western Civilization: 1400s-1600s 3 3/0/0
Meets MnTC Goal Areas 5 and 8. This course provides a discussion of the political, economic, cultural and social factors which have shaped the history of the Western world. Topics include the Renaissance, the rise of capitalism, the Reformation, the
emergence of nation states and the Age of Absolutism.
Prerequisite: None
Corequisite: None

HIST 1112 Western Civilization: 1600s-1800s
Meets MnTC Goal Areas 5 and 8. This course provides a discussion of the political, economic, cultural and social factors which have shaped the history of the Western world. Topics include the English Revolution, the Industrial Revolution, the Age of Progress, World War I, the rise of fascism, World War II and the Cold War.
Prerequisite: None
Corequisite: None

HIST 1113 Western Civilization: 20th Century
Meets MnTC Goal Areas 5 and 8. This course provides a discussion of the political, economic, cultural and social factors which have shaped the history of the Western world. Topics include Marxism, the Industrial Revolution, the Age of Progress, World War I, the rise of fascism, World War II and the Cold War.
Prerequisite: None
Corequisite: None

HIST 1500 European Experience
Meets MnTC Goal Areas 5 and 8. This course combines an on-campus component with a trip to Europe. During the on-campus portion of the course students will learn about major events in British and French history such as the French Revolution, the Napoleonic era, the War of the Roses and the reign of Henry VIII. After the on-campus component is completed, students embark on a 10-day trip to Paris and London, where they visit historical sites they studied during the on-campus portion of the course.
Prerequisite: None
Corequisite: None

HIST 1600 History of Baseball
Meets MnTC Goal Area 5. This course deals with the history of baseball. The course examines the origin of baseball, the development of professional baseball, the creation of baseball leagues, the business of baseball, baseball scandals, labor relations, great moments in baseball history, baseball curses and the steroids era. The course not only examines the history of the game itself, but also emphasizes the ways in which baseball has shaped American society and American society has shaped baseball.
Prerequisite: None
Corequisite: None

HIST 2211 American History: The Colonial Period
Meets MnTC Goal Areas 5 and 7. The course content is the colonial period in American history. Topics include the age of Exploration, early American settlements, the rise of colonial regions in America, the clash of cultures and races, the American Revolution and the Articles of Confederation.
Prerequisite: None
Corequisite: None

HIST 2212 American History 19th Century
Meets MnTC Goal Areas 5 and 7. This is the second course in an American history sequence. The course content is America’s 19th century, defined as the 1780s to 1877. Consideration is given to the Constitution of 1787, the Washington administration, Jeffersonian policies, the War of 1812, the slavery controversy, the Civil War and Reconstruction.
Prerequisite: None
Corequisite: None

HIST 2213 American History: 20th Century
Meets MnTC Goal Areas 5 and 7. This course covers the history of the United States during the 20th century. Topics covered include the Progressive Era, World War I, the Roaring 20s, the Great Depression, the New Deal, World War II, the Cold War, the Korean Conflict, scientific advancements of the 1950s and 1960s, the Civil Rights Movement, the Cuban missile crisis, the Vietnam War and Watergate.
Prerequisite: None
Corequisite: None

Health Information Technology

HITM 1150 Introduction to Health Care Delivery
This course is a study of the historical development of the health care delivery system. The student is given an opportunity to learn about the role of the health information professional and how this role is integrated into the health care delivery system.
Prerequisite: None
Corequisite: None

HITM 1152 Health Information Systems
This course is a study of numbering systems, master patient index, filing systems, microfiling and retention considerations for health records. Basic concepts of information systems will be introduced including electronic data collection, storage, retrieval and other health information applications.
Prerequisite: None
Corequisite: None

HITM 1153 Introduction to Electronic Health Records
This course introduces the student to the evolution of paper health records to the electronic version. The stages of preparation of non-electronic health record development will be identified. Students will be given the opportunity to research the technologies that support the electronic health record. Also, the challenges of electronic health record implementation will be discussed.
Prerequisite: Permission of instructor
Corequisite: None

HITM 1155 Medicoegal Aspects
This course focuses on the application of legal principles, policies, regulations and standards for the control and use of health information. Emphasis is placed upon the proper release of patient information and legal procedures involved in court disclosure of health record information.
Prerequisite: HITM1150
Corequisite: None

HITM 1156 Health Information Systems and Statistics
This course is a study of the basic health information systems as they move from the paper record to the hybrid version and the electronic health record implementation. Primary and secondary records will be defined. Other areas to be covered are documentation requirements, retention, record destruction, computing and interpreting health care statistics, and the appropriate display of statistical data.
Prerequisite: None
Corequisite: None

HITM 1159 Professional Practice Experience Functions
This course provides the student with practical applications of theories in the field of Health Information Technology. Under the supervision of a qualified health information professional, the student gains professional practice experience in basic health record functions.
Prerequisite: Permission of instructor
Corequisite: None

HITM 1160 Health Information Systems and Statistics
This course is a study of the basic health information systems as they move from the paper record to the hybrid version and the electronic health record implementation. Primary and secondary records will be defined. Other areas to be covered are documentation requirements, retention, record destruction, computing and interpreting health care statistics, and the appropriate display of statistical data.
Prerequisite: None
Corequisite: None

HITM 2202 Computer Applications in Healthcare
This course develops the health information technology student’s knowledge of computer theory and application in the areas of system collection, storage and retrieval.
Prerequisite: None
Corequisite: None

HITM 2204 Fundamentals of Electronic Health Records
This course focuses on systems, policies, regulations and standards for the implementation and use of electronic records within the health care delivery system.
Prerequisite: CPTI104
Corequisite: None

HITM 2211 Basic Pharmacology for Coders
This course introduces the coding student to basic pharmacology concepts and drug categories as related to current coding guidelines. Emphasis is placed on commonly used drugs and their effects on body systems. Drug reference utilization is included.
Prerequisite: HLTH1116
Corequisite: None

HITM 2214 Introduction to ICD Coding
This course covers an in-depth study of the International Classification of Diseases (ICD). This includes ICD-9 and an overview of ICD-10.
Prerequisite: BIOL2230 AND HLTH1106 AND permission of instructor
Corequisite: None

HITM 2216 Introduction to CPT Coding
This course covers an in-depth study of the Physician’s Current Procedural Terminology (CPT)-4 coding system.
Prerequisite: HLTH1106 AND permission of the instructor
Corequisite: None

HITM 2226 Advanced ICD Coding
This course is a continuation of the in-depth study of the International Classification of Diseases (ICD) coding and reimbursement in the health care delivery system. Coursework in ICD-10 is included.
Prerequisite: Permission of instructor
Corequisite: None

HITM 2238 Advanced Coding CPT
This course is a continuation of the in-depth study of the Physician’s Current Procedural Terminology (CPT) coding system.
Prerequisite: HLTH1106 AND permission of instructor
Corequisite: None
### Course Descriptions

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### Health

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<td>HLT 1100</td>
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This course is a study of the basic principles of management, communication and working relationships in a health care setting. The role of the health record technician as a supervisor is discussed.

**Prerequisite:** None  
**Corequisite:** None

This course covers the components of quality improvement systems, including quality assessment, utilization review and risk management. This course is also a study of collecting, computing, analyzing, interpreting and presenting numerical data relating to health care services.

**Prerequisite:** HITM1152  
**Corequisite:** None

This course covers the components of quality improvement systems, such as quality assessment, performance improvement, utilization management, risk management and credentialing. Also included is preparation for licensing and accreditation surveys.

**Prerequisite:** None  
**Corequisite:** None

This course is an introduction to the current reimbursement systems that are used in inpatient and outpatient settings in the health care industry.

**Prerequisite:** Permission of the instructor  
**Corequisite:** None

This course provides the student with practical application of classroom theories and coursework. Under the supervision of a qualified supervisor, the student gains professional practice experience in supervisory and management functions.

**Prerequisite:** Permission of the instructor  
**Corequisite:** None

This course allows the student to review and apply the applicable accreditation standards for health record documentation. Students also will review and apply payer requirements and professional practice standards. The policies of uniform content and format will be applied.

**Prerequisite:** Permission of the instructor  
**Corequisite:** None

This course will examine the importance of communities in providing access to personal health care, emotional and mental health, drug use and abuse, and nutrition and fitness. We will examine the importance of communities in providing access to personal health care, emotional and mental health, drug use and abuse, and nutrition and fitness.

**Prerequisite:** None  
**Corequisite:** None

This course builds on the nursing assistant course to introduce the concepts of home care services and the goals and responsibilities of a home health aide. Topics of food and meal management, nutrition, basic emergency care procedures, documentation and reporting, ethics and confidentiality, and homemaker skills make up the foundation of this course. Care needs of special populations such as chemically dependent, developmentally delayed, pediatrics and the handicapped are also discussed within this course. This course meets the requirements of the Minnesota Department of Health Home Health Aide course, and successful completion makes the student eligible to take the State Nursing Assistant/Home Health Aide registry exam.

**Prerequisite:** HLT1115  
**Corequisite:** None

This course provides an introduction to the concepts of infection control, safe and clean environment, communication, lifespan issues, basic human care needs and special population care needs. The primary focus is on basic nursing care and the skills needed to safely and competently perform personal holistic care under the supervision of a registered nurse to clients in long-term and acute-care settings. It meets the requirements for the Minnesota Department of Health Nursing Assistant course, and successful completion allows the student to be eligible to take the State Registry Exam for Nursing Assistant.

**Prerequisite:** None  
**Corequisite:** None

This course covers prefixes, suffixes and root words used to compose medical terms. The student learns to spell, pronounce, define, analyze and formulate terminology related to body structure, disease, diagnosis and treatment. Medical abbreviations are also included.

**Prerequisite:** None  
**Corequisite:** None

This course provides introductory training for those who want to work as a nursing assistant/home health aide. It introduces the concepts of infection control, safe and clean environment, communication, lifespan issues, basic human care needs, home care services, goals and responsibilities of a nursing assistant/home health aide, food and nutrition management, nutrition, basic emergency care procedures, documentation and reporting, ethics and confidentiality, and homemaker skills. The primary focus is basic nursing care and the skills needed to safely and competently perform personal holistic care under the supervision of a registered nurse. This course meets the requirements for the Minnesota Department of Health Nursing Assistant/Home Health Aide course, and students who successfully complete the course are eligible to take the State Registry Exam for Nursing Assistant/Home Health Aide.

**Prerequisite:** None  
**Corequisite:** None

This course teaches basic life support using American Heart Association or American Red Cross guidelines and first aid using American Academy of Orthopaedic Surgeons(AAOS) or American Red Cross guidelines.

**Prerequisite:** None  
**Corequisite:** None

This course teaches basic life support using American Heart Association or American Red Cross guidelines and first aid using American Academy of Orthopaedic Surgeons(AAOS) or American Red Cross guidelines.

**Prerequisite:** None  
**Corequisite:** None

This course will illustrate concepts across the continuum from cultural awareness to culturally competent care in relationship to providing holistic health care to a diverse group of patients. While this course has an emphasis on health care, other disciplines could apply cultural awareness with diverse populations in a variety of settings.

**Prerequisite:** None  
**Corequisite:** None
HLTH 2208 Pathophysiology 3 3/0/0
This course presents information related to pathophysiology of various body systems. The nature, cause, diagnosis and treatment of common disease conditions will be emphasized.
Prerequisite: HLTH1101 OR BIOL2230
Corequisite: None

HLTH 2212 Social Seminar Drug Education 3 3/0/0
This course is designed to cover the use, abuse and dependency of legal and illegal drugs. Included are the physical and psychological effects and the problems related to drug use. It may include guest lecturers, small discussions, videos, student presentations covering topics related to all forms of drugs and drug use including intervention, and available sources to help deal with drug abuse.
Prerequisite: None
Corequisite: None

HLTH 2213 Emergency Responder 3 2.5/0.5/0
The first responder-level course covers regular and more advanced first aid practices and procedures including extrication and transportation, professional-level CPR, oxygen administration, long bone splinting, blood pressure monitoring, emergency childbirth, patient assessment, backboarding and stress management.
Prerequisite: None
Corequisite: None

HLTH 2214 Emergency Responder 3 3/0/0
The first responder-level course covers regular and more advanced first aid practices and procedures including extrication and transportation, professional-level CPR, oxygen administration, long bone splinting, blood pressure monitoring, emergency childbirth, patient assessment, backboarding and stress management.
Prerequisite: None
Corequisite: None

HLTH 2215 EMT Basic 6 4/2/0
This course follows the current National Standard Curriculum and will include all skills and classroom information necessary to provide emergency care at the basic life support level. Modules presented include preparation of the EMT-B, airway, patient assessment (medical and trauma), medical/behavioral emergencies and OB/GYN, trauma, infants and children, ambulance operations and interventions (medications and semi-automatic defibrillation). Upon successful completion of the EMT-B course, the student will be eligible to take the state/national registry computer and practical examinations.
Prerequisite: None
Corequisite: None

Honors

HONS 1101 Introduction to Honors 1 1/0/0
Meets MnTC Goal Area 2. This course is intended to be taken by students within the Honors Program during the first semester of the program. This is a variable content reading course which will emphasize critical thinking but be directed toward the academic interests of faculty and students. Each student will present a proposal for a capstone honors project at the end of the course.
Prerequisite: None
Corequisite: None

HONS 2900 Honors Capstone Seminar 1 1/0/0
Meets MnTC Goal Area 2. This course is intended to be taken by students within the Honors Program. This is a variable content reading course which will emphasize critical thinking but be directed toward the academic interests of faculty and students. Each student will present a capstone honors project at the end of the course.
Prerequisite: None
Corequisite: None

Human Resources

HRES 1110 Benefits Administration 3 3/0/0
This course covers basic knowledge and information about the various types of benefits that are typically offered by employers for their employees.
Prerequisite: None
Corequisite: None

HRES 1114 Training and Development 3 3/0/0
This course covers basic information about the characteristics of effective orientation programs and the scope of organizations, training and continuing development programs in building an effective work force.
Prerequisite: None
Corequisite: None

HRES 2204 Policy Administration 3 3/0/0
This course covers basic information and understanding of the need for human resources policies in an organization, types of policies, the process of policy formulation and how policies are used.
Prerequisite: None
Corequisite: None

HRES 2224 Employee/Labor Relations 3 3/0/0
This course covers basic information about the history of labor unions, current labor laws, the current role of labor unions, workers compensation laws and the rights of employees.
Prerequisite: None
Corequisite: None

HRES 2244 Human Resources Internship 1 - 4 None
This course is designed to provide the student with a purposeful occupational experience in the human resources field. Each internship is an individualized experience and is a training plan designed for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. One credit of internship is equal to 45 hours of internship.
Prerequisite: None
Corequisite: None

HRES 2252 Human Resources Competency and Portfolio Evaluation 2 1/1/0
This course reviews and reinforces the principles covered in the Human Resource program through the development of a comprehensive student portfolio and simulated activities related to program outcomes. The course also develops knowledge of career processes and the skills needed in conducting an effective job search.
Prerequisite: None
Corequisite: None

Humanities

HUM 1105 Religion in the Humanities 3 3/0/0
Meets MnTC Goal Areas 6 and 8. This course is an exploration and study of religious expression and experience as well as an introduction to the world’s major religions. The focus of the course will be on human expression of religious belief and philosophy in literature, film, music and art, and it will cover a variety of world religions including Buddhism, Hinduism, Islam, Judaism and Christianity. Throughout the course, students will explore diversity and human religious expression as a way of enhancing their global perspective.
Prerequisite: None
Corequisite: None

HUM 1110 Native American Culture 3 3/0/0
Meets MnTC Goal Areas 2, 6 and 8. This course is an interdisciplinary study of the social and cultural life of Native Americans, primarily the Plains Indians. Students consider traditional and contemporary expressions of Native peoples as well as the history from which these expressions spring, especially the impact that contact with European peoples had and continues to have on Native American ways of life.
Prerequisite: None
Corequisite: None

HUM 1120 Culture of Italy 3 3/0/0
Meets MnTC Goal Areas 6 and 8. This multidisciplinary course will introduce students to a close study of the art, drama and music of Italy. Students will develop an appreciation of
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</table>

The Italian culture and an understanding of the integration of the arts within the culture. Upon completion of HUM 1120, students will be eligible for GLST 1121 Humanities Italy. 

Corequisite: None

Prerequisite: None

Meets MnTC Goal Areas 6 and 7. This course is a study of the contributions of women in the humanities as writers, artists and social reformers with emphasis on 20th century women. The course will incorporate individual studies of Quaker women, frontier women, African American women and Native American women.

Corequisite: None

Meets MnTC Goal Areas 6 and 8. This course is a multi-disciplinary study designed to enhance an interdisciplinary perspective on women in the humanities with emphasis on 21st century women's cultural contributions as composers, artists and social reformers. The course will incorporate studies on women of China, Latin America and Europe.

Corequisite: None

Meets MnTC Goal Areas 2, 6 and 8. Developments in the arts, architecture, science, and worldview while they screen films and analyze multiple themes and ideas as a means of developing a cultural appreciation.

Corequisite: None

Meets MnTC Goal Areas 2 and 6. Since ancient Greece there have been debates about the differences between sophistry and sophistry. This debate has traditionally been defined by the ideas that sophistry is aligned with rhetoric and that rhetoric is broadly defined as the art of persuasion on the one hand. On the other hand is the philosophical tradition which per se, is not a study of logic and its attempts to seek out the truth, broadly defined by either a correspondence or coherence theory of truth. At its most heated, the debate seems to come down to the difference between persuading someone (by whatever means) to adopt a position versus a rigorous analysis of evidence, using logical techniques to produce the most plausible solution (even if it's not the solution we had hoped). In contemporary academia, one might argue that the division between rhetoric and a strictly logical approach has grown wider since the two disciplines are housed in separate departments. One generally finds courses in rhetoric in English departments, but courses in logic, are usually found in philosophy departments, so our approach will be interdisciplinary.

Corequisite: None

Meets MnTC Goal Areas 2 and 6. The term hero is sometimes used synonymously with the role model, and in this class we will explore what characteristics are present in the heroic figure as well as explore the motives of the hero. Why do we expect our heroes to suffer? The vast majority of heroes are single; why? Is it related to the notion of innocence, or is it to spare them the hard decisions to save a spouse or three other strangers? Are there links or analogies to the story of Jesus? What do we admire about heroes? Is it the chameleon property? What kinds of things can be considered superpowers and what do they represent figuratively, metaphorically, symbolically, morally and culturally different according to gender, or are heroes gender-neutral? Are heroes representatives of the culture they originate in, or are they products of that culture, or both? Are heroes representatives of a particular moral position, or are they generic good? These are the types of questions we will explore in this class.

Corequisite: None

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parallel and series combination circuits are solved using trigonometry. Capacitance is introduced and applied as a function in understanding AC motors.

Corequisite: None

HVAC 1104 Heating, Ventilating, and Air Conditioning Electrical Controls
This course covers the wiring of typical heating and cooling circuits, along with the hook-up and installation of air conditioning.

Corequisite: None

HVAC 1128 Heating, Ventilating, and Air Conditioning Design and Installation
This course includes an overview of various heating controls and appliances. Topics will include blueprints, as applied to estimating heating and cooling loads; gas piping, as installed in residential and light commercial jobs; safe heating, ventilating and air conditioning practices; various venting codes and requirements; and the sizing of furnaces, duct work and piping.

Corequisite: None

HVAC 1224 Gas and Oil Heating 3 2/3/0
This course covers residential gas and oil heating units, primarily forced air furnaces. Emphasis is on understanding the sequence of operation, proper adjustment, efficiency measurement and safety. Diagnosis and repair of malfunctioning furnaces is part of this course.

Corequisite: None

HVAC 2202 Air Handling 2 1/1/0
The dynamics of handling fluid masses of air will be studied. The focus will be on moving and replacing air at given velocities, quantities and temperatures.

Corequisite: None

HVAC 2204 Advanced Duct Fitting Construction 3 2/0/0
This course deals with standard transitional sheet metal fittings usually found in ductwork or on commercial roofing projects. The triangulation method is used to create fittings for which exit configurations differ from entry configurations.

Corequisite: None

HVAC 2205 Advanced Duct Fitting Construction 2 1/1/0
This course deals with standard transitional sheet metal fittings usually found in ductwork or on commercial roofing projects. The triangulation method is used to create fittings for which exit configurations differ from entry configurations.

Corequisite: None

HVAC 2212 Hot Water Heating 3 2/1/0
This course covers both hot water baseboard and in-floor heating, with emphasis on calculations involved in hydronic heating.

Corequisite: None

HVAC 2220 Heat Pump Theory 1 1/0/0
This course will cover the various methods by which mechanical processes are used to move heat from different sources into residential housing. Some attention to commercial methods will be offered. An example of this would be using the compression cycle of refrigeration to extract heat from the outside air.

Corequisite: None

HVAC 2221 Heat Pump Theory and Operation 3 2/1/0
This course will cover the various methods by which mechanical processes are used to move heat from different sources into residential housing. Some attention to commercial methods will be offered. An example of this would be using the compression cycle of refrigeration to extract heat from the outside air.

Corequisite: None

HVAC 2250 Heating, Ventilating, and Air Conditioning Applications 1 0/1/0
This course will involve as much interaction with the community as possible, working with customers on their job sites. Students will also be hooking up split-system air conditioners in the lab.

Corequisite: None

HVAC 2254 Heating, Ventilating, and Air Conditioning Interrelated Topics
This course will add to the student's electrical knowledge regarding circuits and schematics.

Corequisite: None

HVAC 2260 Refrigerant Certification 1 1/0/0
This course covers the content necessary to achieve an EPA Certification rating.

Corequisite: None

HVAC 2290 Heating, Ventilating, and Air Conditioning Internship 1 0/0/1
This course will add to the student's electrical knowledge regarding circuits and schematics.

Corequisite: None

**Integrative Learning Seminar**

**ILS 1100 Integrative Learning Seminar I** 1 1/0/0
This course meets MnTC Goal Area 2. Students will begin to develop collegiate-level, transferable skills as they are introduced to the M State core abilities and liberal arts and sciences shared values. Students will begin to learn how to critically evaluate information and ideas, how to determine the ethical implications that come with decision making, and how to communicate effectively as they develop an understanding of course materials through written and oral exercises. Students will establish a digital folio, which will allow them to demonstrate their growing understanding and mastery of the shared values and core abilities.

Corequisite: Assessment into ENGL1101

Corequisite: None

**ILS 2100 Integrative Learning Seminar II** 2 2/0/0
Meets MnTC Goal Area 2. This course provides a cohesive, integrative learning experience for the liberal arts and sciences student. The student will integrate skills and knowledge developed and acquired throughout his or her course of study in the disciplines. The course requires the student to embark on a comprehensive interdisciplinary academic quest designed to demonstrate research, oral and written communication, and critical thinking skills.

Corequisite: Completion of 40 credits AND ILS1100

Corequisite: None

**Industrial Maintenance**

**IMMA 1110 Intro Power and Mechanical Systems** 3 1/2/0
This course will provide an overview of the design, operation and maintenance principles of basic mechanical system components. The terminology, theory, construction and operation of mechanical components dealing with power transfer found within the typical factory will be discussed. The course is designed to provide an understanding of the basic physics principles that govern mechanical power transmission through the use of belt, chain and gear drives, clutch and braking mechanisms, coupling devices, linear actuators and bearings.

Corequisite: None

Corequisite: None

**IMMA 1112 Mechanical Blueprint Reading** 2 2/0/0
This class teaches the skills of construction, control and operation of hydraulic and pneumatic systems coupled with electrical/electronic controls. Participants will perform hands-on experiments to construct circuits that teach the operation of individual components as well as complete systems used in real-world applications. Assemblies involving fluid power and the modern control components used to regulate it will be emphasized.

Corequisite: None

Corequisite: None

**IMMA 2223 Fluid Power Lab** 2 1/1/0
This course meets MnTC Goal Area 2. Students will begin to develop collegiate-level, transferable skills as they are introduced to the M State core abilities and liberal arts and sciences shared values. Students will begin to learn how to critically evaluate information and ideas, how to determine the ethical implications that come with decision making, and how to communicate effectively as they develop an understanding of course materials through written and oral exercises. Students will establish a digital folio, which will allow them to demonstrate their growing understanding and mastery of the shared values and core abilities.

Corequisite: None

Corequisite: None

**Web Development**

**INTD 1000 Foundations of Web Development** 3 2/1/0
In this course, students will be introduced to the foundational concepts necessary for a career in Web Development. Students will explore the Web Development program, research career paths and review technical skills needed to succeed in the field.

Corequisite: None

Corequisite: None

**INTD 1108 HTML** 3 2/1/0
In this hands-on course, students will learn the basics of creating Web pages using up-to-date techniques with HTML, CSS and XHTML. Students will learn to create standard-
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**Course Descriptions**

- **Prerequisite:** None
- **Corequisite:** None

**INTD 1113 Hands-On Programming**

This course introduces fundamental programming concepts in an exciting, hands-on learning environment. Using the LEGO Mindstorms system, students will implement code to control a robot's senses, actions and reactions. This course will also focus on 21st century skills such as time management, teamwork, problem solving and communications.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 1117 Photoshop**

Students will develop fundamental skills in developing Web graphic images using Photoshop. The course will concentrate on the design of graphics as it pertains to the delivery over the Internet.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 1124 Cascading Style Sheets**

This course focuses on the use of Cascading Style Sheets in the creation of Web pages. Students will create and utilize CSS to provide sophisticated page layout and design for Web pages and websites. The course emphasizes standards-based design with CSS and testing sites for maximum browser compatibility.

- **Prerequisite:** INTD1108
- **Corequisite:** None

**INTD 1130 Electronic Commerce**

This course introduces online technologies and trends and their influence on the electronic commerce marketplace. Students will learn various revenue models and how to market on the Web. The course introduces online auctions and various legal and ethical issues. Students will learn about important security issues, such as spam and phishing. Students will learn how to plan for electronic commerce and develop an online marketing plan.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 1140 Javascript**

In this course, students will be given a brief introduction to the technologies of the Internet and the World Wide Web as well as the context in which the various Web programming technologies fit into this framework. Students will learn the basics of Web programming using Javascript. Students will apply programming concepts to client-side Web development.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 1150 Databases on the Server**

This course is an introduction to server-based database systems. It introduces the students to the following topics: relational database design, administering enterprise-level databases systems, structured query language and normalization. This class will be taught using an enterprise-level database system in MySQL.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 2210 Interface Design**

Students will learn the concepts and skills necessary for designing websites for the targeted user. This course is focused on the interface design process, with emphasis on the important topics of visual design, writing for the Web and accessibility.

- **Prerequisite:** INTD1124 OR concurrent enrollment in INTD1124 OR consent of instructor
- **Corequisite:** None

**INTD 2213 Flash**

Students will learn how to design and deliver cross-platform, low-bandwidth animations, presentations and Web applications using Flash and Actionscript.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 2226 Web Programming**

In this course, students will utilize the knowledge learned in previous classes to create client-side programs used to manipulate Web applications. Students will utilize project-planning skills, as well as utilize problem-solving techniques to write effective applications. The use of Ajax, rich internet applications and frameworks will also be introduced.

- **Prerequisite:** INTD1110 OR INTD1110
- **Corequisite:** None

**INTD 2228 Web Projects**

In this class, students will utilize the knowledge learned in previous classes to create Web applications using both client- and server-side technologies. The focus of this course is a top-down approach whereby students are assigned a project, they determine the needs of the project, and they develop a project plan. Then they will identify what it will take to complete that Web project. Students will participate in group-based programming activities, learn about project management and implement technologies as needed to create a working system.

- **Prerequisite:** INTD2226
- **Corequisite:** None

**INTD 2231 Emerging Technologies**

Computer professionals are constantly learning new technologies. Students will explore the exciting world of social media while researching new technologies. After instructor approval, the student will research the selected emerging Web-related topic using Web resources and prepare a research paper.

- **Prerequisite:** None
- **Corequisite:** None

**INTD 2236 Advanced Web Programming**

In this class, students will utilize the knowledge learned in previous classes to create server-side PHP programs used to manipulate Web applications, files, email and databases. Students will utilize problem-solving skills, as well as utilize problem-solving techniques to write effective applications.

- **Prerequisite:** INTD2226 AND INTD2246
- **Corequisite:** None

**INTD 2238 Web Portfolio**

In this course, students will plan, design and create a professional portfolio using Web technologies. The purpose of the portfolio is to showcase the student's accomplishments in the student's major field and provide the student with a concrete representation of his or her skills and abilities.

- **Prerequisite:** INTD2210 OR consent of instructor
- **Corequisite:** None

**INTD 2246 PHP**

Students will learn how to develop dynamic websites using PHP. Topics covered will include basic syntax, deploying PHP Web pages and database connections.

- **Prerequisite:** INTD1140
- **Corequisite:** None
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Information Technology

ITSS 1100 Information Technology Help Desk 3 2/1/0
This course is an introduction to information technology user support. Important skill sets involving customer service, troubleshooting, user support management, product evaluation, user support management and user training are introduced. This course also emphasizes teamwork and technical writing.
Corequisite: None

ITSS 1120 Information Technology Research and Documentation 3 1/2/0
Using the World Wide Web, students will research current trends and technical issues in information technology. Research topics will include software applications, hardware products, security issues, and technical problems and solutions. Students will develop technical documentation and training materials for the purpose of supporting end users. Emphasis will also be placed on refining Web searching skills to locate vendor documentation, trade journals, white papers and other useful IT resources.
Corequisite: None

ITSS 2100 Supporting End-User Applications 3 2/1/0
This course emphasizes the knowledge, skills and abilities necessary to improve the productivity of the computer user. Students will learn about providing support for the user's computer, including the operating system and the software applications installed on the computer.
Corequisite: ITSS1100

Mathematics

MATH 1000 Technical Mathematics
This course presents basic mathematical topics as they are applied in a technical program. The course includes a review of basic mathematical operations and continues with the development of algebraic and trigonometric skills in a technical setting. Most concepts will be applied through course-specific problems. This course is not an MnTC Goal Area 4 mathematics course, nor does it prepare students for taking an MnTC Goal Area 4 mathematics course. This course shall not be used as a replacement for either MATH 0090 or MATH 1020, or their transfer equivalents. This course may be taken only by students enrolled in the following programs: Carpentry, Construction Electricity, HVAC, Refrigeration and Air Conditioning, Telecommunications Engineering Technology, Industrial Maintenance and Alternative Energy Manufacturing.
Corequisite: None

MATH 1020 Intermediate Algebra
This course includes equations of lines, systems of equations; rational expressions and equations; functions; radical expressions and equations; complex numbers; absolute value equations and inequalities; and solving quadratic equations using factoring, completing the square and the quadratic formula.
Corequisite: None

MATH 1100 World of Math
Meets MnTC Goal Areas 2 and 4. This liberal arts mathematics course provides an introduction to several areas and concepts in mathematics including problem solving, numerical sequences, methods of counting, probability and statistics. The course is appropriate as general education for those who do not intend to pursue the regular college mathematics courses.
Corequisite: None

MATH 1102 Finite Math
This course is an introduction to systems of linear equations and inequalities, matrices, linear programming, mathematics of finance and elementary probability and statistics. This course is intended for all liberal arts and science students, but is highly recommended for students in areas of management, health sciences and other applied technologies.
Corequisite: None

MATH 1114 College Algebra
Meets MnTC Goal Areas 2 and 4. This course includes rational, polynomial, exponential, logarithmic, inverse and quadratic functions. The course also includes equations, inequalities, complex numbers and systems of linear equations. Additional topics may include matrices and determinants.
Corequisite: None

MATH 1115 Functions/Trigonometry
Meets MnTC Goal Areas 2 and 4. This course includes trigonometric functions, right triangle trigonometry, radian measure and circular functions, identities, equations, inverse functions, oblique triangles, complex numbers, vectors, polar coordinates and conic sections.
Corequisite: None

MATH 1116 College Trigonometry
Meets MnTC Goal Areas 2 and 4. Topics include trigonometric functions, right triangle trigonometry, radian measure and circular functions, identities, equations, inverse functions, laws of cosines and sines. Optional topics may include complex numbers, vectors and polar coordinates.
Corequisite: None

MATH 1118 Precalculus
Meets MnTC goal areas 2 and 4. This course includes trigonometric identities and polynomial, exponential, logarithmic, rational and trigonometric functions, their inverses and their graphs. Optional topics may include matrices and determinants, conic sections, vector concepts and polar coordinates.
Corequisite: MATH1210 AND Math 1020 with a C or higher or by placement score

MATH 1122 Applied Calculus and Linear Algebra
Meets MnTC Goal Areas 2 and 4. This course is an introduction to optimization, the simplex method, differential and integral calculus with an emphasis on application in the areas of business and the life and social sciences. This course is intended for all liberal arts and science students but is highly recommended for students pursuing business careers.
Corequisite: None

MATH 1134 Calculus I
Meets MnTC Goal Areas 2 and 4. This course includes limits and continuity, derivatives, definite and indefinite integrals of algebraic, trigonometric, exponential and logarithmic functions, and applications of the derivative and definite integral.
Corequisite: None

MATH 1135 Calculus II
Meets MnTC Goal Areas 2 and 4. This course includes integration of logarithmic,
Mechanical Drafting and Design

MCDD 1102 Mechanical Engineering Drawing I  3  1/2/0
The objective of this course is to develop the student's understanding of principles of technical communication, including engineering drawing, dimensioning, lettering, CAD, and design conventions. Students will learn to create and read technical drawings, develop an understanding of materials, and apply standard drafting practices. Students will also gain knowledge of the computer-aided drafting and design (CADD) software.

Prerequisite:  None
Corequisite: None

MCDD 1106 Mechanical Engineering Drawing II  4  0/4/0
The objective of this course is to develop the student's knowledge of advanced engineering drawing techniques, including orthographic projection, dimensioning, and advanced CADD applications. Students will learn to create and read complex technical drawings, and apply advanced drafting practices.

Prerequisite: MCDD1102
Corequisite: None

MCDD 1114 Manufacturing Process  2  2/0/0
The objective of this course is to develop the student's understanding of material processing, casting, molding, forming, separating operations, assembling, finishing, and automation. Students will learn the fundamental principles of manufacturing processes and their applications in various industries.

Prerequisite: None
Corequisite: None

MCDD 1120 Drafting Practices  2  2/0/0
The objective of this course is to develop the student's knowledge of engineering drawing change orders, engineering communications, attitudes, workforce diversity and finances.

Prerequisite: None
Corequisite: None

Mass Communication

MCOM 1112 Introduction to Mass Communication  3  3/0/0
This course provides an introduction to the field of mass communication, including an overview of the history and development of mass communication, the role of the mass media in society, and the relationship between the mass media and various aspects of contemporary culture. Students will learn to critically analyze mass communication messages and understand the impact of mass media on society.

Prerequisite: None
Corequisite: None

MCOM 1140 Popular Culture and Social Media  3  3/0/0
This course explores the role of popular culture and social media in society, including an examination of the history of popular culture, the impact of social media on communication and society, and the economic and political impact of popular culture and social media. Students will learn to critically analyze popular culture and social media messages and understand the impact of these messages on society.

Prerequisite: Assessment in ENGL 1101
Corequisite: None
### Multicultural Studies

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<tr>
<td>MCS 2231</td>
<td>Multicultural America: Service Learning</td>
<td>1</td>
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</tbody>
</table>

This course provides an introduction to multicultural perspectives on American education via a hands-on experience working and interacting with diverse cultures in an educational setting. Participants will study the nature of the service learning necessities that students may meet outside of regular class hours (20-25 hours) and may need their own transportation to service learning sites.

### Manufacturing

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>METC 1112</td>
<td>Manufacturing Processes</td>
<td>4</td>
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</tr>
<tr>
<td>METC 1152</td>
<td>Safety and Accident Prevent</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>METC 2208</td>
<td>Basic Electricity and Electronics</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>METC 2222</td>
<td>Fluid Power Systems</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>METC 2254</td>
<td>Quality Measurement and Controls</td>
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This course teaches the fundamentals of traditional and non-traditional manufacturing processes including mass reducing, mass conserving, joining, material treatment and surface treatment processes. Hands-on experiences in laboratories provides class participants with basic skills in machining, welding and wood processing technologies.

### Marketing

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<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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<tbody>
<tr>
<td>MKTG 1050</td>
<td>Direct Selling</td>
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<td>MKTG 1106</td>
<td>Professional Selling</td>
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<td>MKTG 1108</td>
<td>Social Media</td>
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<tr>
<td>MKTG 1116</td>
<td>Advertising and Promotion</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>MKTG 1120</td>
<td>Introduction to Social Media</td>
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</table>

This introductory class will focus on the Internet marketing strategy of Search Engine Optimization (SEO). It will cover how search engines work, what people search for, the actual search terms or keywords typed into search engines and which search engines are preferred by their targeted audience. Optimizing a website may involve editing its content and HTML and associated coding to both increase its relevance to specific search terms and improve its position in search engine results.
<table>
<thead>
<tr>
<th>Course #</th>
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<th>CR</th>
<th>Lec/Lab/OJT</th>
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<tbody>
<tr>
<td>MKTG 2204</td>
<td>Advanced Professional Selling</td>
<td>3</td>
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<tr>
<td>MKTG 2206</td>
<td>Sales Management</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>MKTG 2212</td>
<td>Retail Management</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>MKTG 2214</td>
<td>E-Marketing</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>MKTG 2218</td>
<td>Retail Management</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>MKTG 2222</td>
<td>Human Resource Management</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>MKTG 2230</td>
<td>Marketing Research</td>
<td>3</td>
<td>2/1/0</td>
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<tr>
<td>MKTG 2234</td>
<td>Computer Marketing Applications</td>
<td>3</td>
<td>2/1/0</td>
</tr>
<tr>
<td>MKTG 2236</td>
<td>Small Business Management</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>MKTG 2250</td>
<td>Strategic Selling and Account Management</td>
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<td>2/1/0</td>
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</table>

**MKTG 2200** (Advanced Professional Selling) - This course provides opportunity for the student to apply the steps of a sales presentation by planning and performing sales presentations in role-playing situations. The student applies strategies in sales communications, customer-oriented selling and sales management.

**MKTG 2206** (Sales Management) - This is an advanced management course that focuses on sales force planning, implementation and control. This course covers the managerial topics of sales planning, staffing, training and directing, as well as analyzing and evaluating the sales force.

**MKTG 2212** (Retail Management) - Class emphasis is on the strategic decisions made by retailers and how those decisions impact how, when, where and in what quantities customers will buy. Emphasis is also on hands-on application of the theories and principles introduced in class. Topics include using professional retailing terminology, analyzing environmental influences and identifying management practices that can help the retailer achieve the mission of the organization as well as make operational decisions such as site selection, determining merchandising practices, managing inventory and determining pricing strategies.

**MKTG 2214** (E-Marketing) - This course examines emerging electronic technologies and their impact on a firm's marketing strategy. Emphasis is placed on trends in e-marketing as well as the unique opportunities and challenges faced in the electronic environment. Students will apply the components of the traditional marketing mix to an electronic marketing strategy.

**MKTG 2218** (Retail Management) - Class emphasis is on the strategic decisions made by retailers and how those decisions impact how, when, where and in what quantities customers will buy. Emphasis is also on hands-on application of the theories and principles introduced in class. Topics include using professional retailing terminology, analyzing environmental influences and identifying how retailers can appropriately respond to those influences as they make operational decisions such as site selection, determining merchandising practices, managing inventory and determining pricing strategies.

**MKTG 2222** (Human Resource Management) - The purpose of this course is to acquaint the student with the importance of human resource management and how it fits into the organizational objectives of the employer. The content addresses techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function.

**MKTG 2230** (Marketing Research) - This course covers market research principles and procedures that are necessary for marketing professionals to be successful. Topics covered include survey methods and techniques, problem identification, data collection techniques, sample type and size, presentation of findings and using the Internet as a source.

**MKTG 2234** (Computer Marketing Applications) - This course challenges students to produce computer projects using spreadsheet databases, graphics and word processing. The emphasis is on documents produced by marketing departments and marketing firms. The student plan, creates, prints and evaluates projects individually and with a team.

**MKTG 2236** (Small Business Management) - This course provides a summary of many of the major issues faced by anyone starting a small business. The course teaches the fundamentals of small business management by blending basic management principles with tested and proven real world techniques for planning, organizing and operating a small business successfully. The course utilizes a variety of learning tools including the textbook, PowerPoint, lectures, written assignments, cases, websites and hands-on activities.

**MKTG 2250** (Strategic Selling and Account Management) - This is an advanced sales course designed to explore and apply proven business practices that are currently being used in the field by sales professionals. Its focus is business-to-business, face-to-face personal selling. Key elements include strategic planning to prepare for sales calls, making sales calls, communicating proposed solutions, overcoming objections and closing sales. Other elements include understanding organizational structure, business-to-business buying behavior, and understanding and influencing multiple decision makers.

**MKTG 2290** (Supervised Occup Exp I) - For this course, projects, reports and discussions are coordinated to relate to the student's employment situation. Employment in an approved wholesale/retail marketing occupation, training verification and evaluation are required of each student. A maximum of six SOE credits will apply toward graduation.

**MKTG 2292** (Supervised Occup Exp II) - For this course, projects, reports and discussions are coordinated to relate to the student's employment situation. Employment in an approved wholesale/retail marketing occupation, training verification and evaluation are required of each student. A maximum of six SOE credits will apply toward graduation.

**MKTG 2298** (Small Business Plan Development) - This is an advanced management course that focuses on sales force planning, implementation and control. This course covers the managerial topics of sales planning, staffing, training and directing, as well as analyzing and evaluating the sales force.

**MKTG 2400** (Marketing Management) - This is a capstone course designed to be taken near the end of the completion of the marketing required courses. This course is designed to integrate learning acquired in prior marketing courses with an emphasis on strategic marketing planning. This class will involve all aspects of developing a comprehensive marketing plan for a product or service. Students will work in teams to research, develop, and present a marketing strategy for a new product.

**MKTG 2404** (Management Strategy) - From a management perspective, students will study strategic management concepts and analytical techniques. Students will learn how to improve managerial decision-making by using a case study format to assess business opportunities and formulate effective strategies which will enhance the long-term performance of the organization. The course is intended to integrate previous program coursework. This capstone course should be taken during the student's final semester.

**Medical Laboratory Technician**

**MLT 1110** (Prin/Proc Phlebotomy) - This course is designed for phlebotomy and medical laboratory technician students. The course covers knowledge and performance of venipuncture, micro (capillary) and arterial blood, body fluid collection, specimen handling and storage. Strict adherence to the safety techniques for pathogen is stressed. The course also covers point-of-care (bedside) analysis and electrocardiography.

**MLT 1112** (Clinical Phlebotomy) - This course provides clinical phlebotomy experience for phlebotomy technician students in an affiliate hospital/clinical laboratory under the supervision of qualified technicians and technologists. Training includes blood and body fluid collection, processing and storage.

**MLT 1113** (Basic Laboratory Techniques I) - This is an introductory course for Medical Laboratory Technician students covering the techniques, interpretation and correlation of results in chemistry, immunology and microbiology. Other topics included in the course are instrumentation, calculations, preparations of reagents, quality assurance and quality control, specimen collection, transportation, analysis and result reporting.

**MLT 1114** (Basic Laboratory Techniques II) - This is an introductory course for Medical Laboratory Technician students covering the techniques, interpretation and correlation of results in urinalysis, hematology, and immunohematology. Other topics included in the course are instrumentation,
calculations, preparation of reagents, quality assurance and quality control, specimen collection, transportation, analysis and result reporting.

**Prerequisite:** CHEM1104 AND ZOO1122 AND ZOO1126 AND BIOL1257

**Corequisite:** None

**MLT 2217 Clinical Hematology**

This course is a clinical experience at an affiliate hospital laboratory under the supervision of qualified laboratory personnel. Students perform tests on cells in the blood and body fluids. The course also covers principles and procedures for coagulation studies.

**Prerequisite:** ZOO1122 AND ZOO1126 AND CHEM1104 AND BIOL2257

**Corequisite:** None

**MLT 2218 Clinical Urinalysis and Phlebotomy**

This course provides a clinical experience in performing routine and special urinalysis and seminal fluid testing under the supervision of laboratory personnel. The course also includes experience in phlebotomy under the supervision of laboratory personnel.

**Prerequisite:** CHEM1104 AND ZOO1122 AND ZOO1126 AND BIOL2257

**Corequisite:** None

**MLT 2219 Clinical Chemistry and Special Chemistry**

This course provides a clinical experience in the chemistry laboratory at an affiliate hospital. Students learn to perform laboratory chemistry methods on automated and semi-automated instruments under the supervision of qualified laboratory personnel. The course also includes clinical experience in special chemistry testing including hormones, vitamins, therapeutic drug monitoring and drugs of abuse testing.

**Prerequisite:** CHEM1104 AND ZOO1122 AND ZOO1126 AND BIOL2257

**Corequisite:** None

**MLT 2220 Clinical Blood Bank**

This course is a clinical experience in a blood bank department of an affiliate hospital. Students perform blood typing and compatibility testing as well as other immunohematology routine testing with supervision.

**Prerequisite:** BIOL1125 AND ZOO1122 AND ZOO1126 AND BIOL2268 AND BIOL2267

**Corequisite:** None

**MLT 2221 Clinical Microbiology**

This course provides a clinical experience at an affiliate hospital that covers bacterial identification methods with laboratory personnel supervision. The course also covers immunological and serological testing of body fluids.

**Prerequisite:** CHEM1104 AND ZOO1122 AND ZOO1123 AND ZOO1126 AND BIOL2268

**Corequisite:** None

**MLT 2222 Clinical Chemistry and Special Chemistry**

This course is a clinical experience in the chemistry department of an affiliate hospital under the supervision of qualified laboratory personnel. Students will learn to perform body fluid chemistry methods on automated and semi-automated instruments. The course also includes clinical experience in supervision including hormones, vitamins, therapeutic drug monitoring and drugs of abuse.

**Prerequisite:** ZOO1122 AND ZOO1123 AND ZOO1126 AND BIOL1125 AND BIOL2265

**Corequisite:** None

**MLT 2230 Clinical Applications**

This is a didactic course offered during the medical laboratory technician clinical experience, which addresses the integration of new information and pertinent information. The course includes case studies, new methods and correlation of test results to diseases/disorders.

**Prerequisite:** CHEM1104 AND BIOL2257 AND ZOO1122 AND ZOO1123 AND ZOO1126 AND ENGL1101

**Corequisite:** None

**MRNT 1104 Drive System Theory**

This course covers the operational theory of the stern-mounted vertical drives and outboard gear cases. Gear ratios, upper housings, lower housings, inputs and outputs will be investigated. Common drive systems from outboard and stem drive are covered in this course. Identification, theory of disassembly, measurement, shimming and assembly procedures will be outlined in this course. Failure analysis is emphasized during this course.

**Prerequisite:** None

**Corequisite:** None

**MRNT 1105 Introduction to Marine**

This course covers information on laws governing the use of public waterways administered by both state and federal agencies as well as the National Marine Manufacturer’s Association regulations. Students will learn the history of marine systems along with the identification of each type. The course also covers the manufacturers’ service and parts literature used in the operation of marine businesses, emphasizing the service department.

**Prerequisite:** None

**Corequisite:** None

**MRNT 1106 Drive System Service**

This course teaches the repair procedures for the common stern-mounted vertical-drive systems built by MerCruiser and outboards built by Mercury Marine and OMC. Complete drive disassembly, measurement, analysis, shimming and rebuilding will be performed. Failure analysis of components will be covered in detail.

**Prerequisite:** None

**Corequisite:** None

**MRNT 1114 Introduction to Boat Rigging**

This course provides training in the procedures necessary to prepare boats for showroom and/or customer delivery. Motor mounting, controls, instrumentation and accessories are discussed. Students will perform rigging and adjustment procedures on boats, along with lake testing.

**Prerequisite:** None

**Corequisite:** None

**MRNT 1120 Marine Starting and Charging Systems**

This course teaches the service procedures necessary for off-road products (2-cycle/4-cycle) to repair charging and starting system components. Electrical systems are applied to test and troubleshoot complete circuits as well as components of each. Fundamental rebuilding principles and system analysis are emphasized. Safe battery testing and service are performed.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2203 Marine Advanced Fuel Systems**

This course covers the many types of fuel systems used on current 2- and 4-cycle higher-end marine products. Most training will be on horsepower ranges above 700hp in outboards and sterndrive engines. The main focus is on larger carbureted and fuel-injected systems along with fuel distribution and associated parts of those systems.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2207 EFI and Advanced Electrical Systems**

This course teaches the theory of operation and service of the EFI/DFI (electronic fuel injection/direct fuel injection) systems used on sterndrive and outboard applications. The student will also gain a strong grasp of high-tech ignition systems and propulsion control. Engine service will be outlined along with seasonal service, engine preparation and inspection. Students will also focus on diagnostic procedures to increase their troubleshooting skills with the aid of laptops and scan tools.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2210 Engine Service**

This a capstone course that will emphasize the perfection of skills acquired by the student during previous training in the marine program. While some new material will be covered, a majority of this course will be a review of earlier information attained but to a much deeper level than previously experienced. The student will focus on troubleshooting, repair and servicing product based upon simulated customer requests and complaints.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2212 Performance Testing**

This course will provide instruction in boat performance improvement. Students will study proper construction and applications. Performance analysis for dynamometer testing and test wheels will be emphasized. Students will conduct performance tests of varied marine products.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2224 Marine Internship**

This course is designed to provide the student with a purposeful occupational experience in the marine field. Each internship is an individualized experience. A training plan is created for each student in conjunction with the employer to provide experience related to the skills and knowledge acquired in the student’s training program. Procedures necessary for new boat preparation, motor mounting, accessories, controls and instrumentation are practiced at the internship site. Additional skills from completed courses will be included in the training plan.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2218 Adv Electrical Diagnosis**

This course covers the highly technical electrical system used on higher horsepower marine products. Student will perform adjustments and normal service procedures on live units. System troubleshooting procedures will be stressed in this course.

**Prerequisite:** None

**Corequisite:** None

**MRNT 2221 Advanced Drive Systems and Testing**

This course teaches the service procedures for advanced technology drive systems used in sternmounted vertical drives and outboards. Dual-propeller drive systems, high-speed designs and heavy-duty drive systems will be covered in this course. Complete disassembly, measurement, analysis, shimming and rebuilding procedures will be taught and performed.

**Prerequisite:** None

**Corequisite:** None
<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
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<td>MRNT 2224</td>
<td>Corequisite: None</td>
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<td>MRNT 2224</td>
<td>Marine Independent Study Lab</td>
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<tr>
<td>MRNT 2223</td>
<td>Engine Performance Rebuild and Diagnostics</td>
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<td>MUSC 1118</td>
<td>Rock and Pop Music</td>
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<td>MUSC 1120</td>
<td>Introduction to Music Technology</td>
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<tr>
<td>MUSC 1121</td>
<td>Basic Theory and Musicianship I</td>
<td>3</td>
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<td>MUSC 1122</td>
<td>Basic Theory and Musicianship II</td>
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<td>MUSC 1123</td>
<td>Sight Singing and Ear Training I</td>
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<td>MUSC 1124</td>
<td>Sight Singing and Ear Training II</td>
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<td>MUSC 1130</td>
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<td>MUSC 1135</td>
<td>Voice Ensemble</td>
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<td>MUSC 1140</td>
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<td>MUSC 1145</td>
<td>Chamber Chorale</td>
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<tr>
<td>MUSC 1150</td>
<td>History of Jazz</td>
<td>3</td>
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</table>

**Music**

- **MUSC 1111 Fundamentals of Music** 3 3/0/0
  - Meets MnTC Goal Area 6. This course focuses on the fundamentals of music and music notation with skills developed through listening, writing music and in-class performances. Assumes no previous training in music.

- **MUSC 1112 Beginning Class Guitar** 1 1/0/0
  - Meets MnTC Goal Area 6F. Group guitar lessons are designed for students with no guitar experience. Includes emphasis on solo and ensemble playing as well as technique and theory.

- **MUSC 1113 Begging Class Voice** 1 1/0/0
  - Meets MnTC Goal Area 6F. This course provides class instruction in the healthy use of the voice in singing and speaking and practical application of vocal techniques. Recommended for beginning voice students, for non-signers who would like to learn to sing, for anyone who uses his/her voice but especially for music, theater, speech, speech therapy and elementary education majors. A maximum of two semesters may be taken for credit.

- **MUSC 1114 Beginning Class Piano** 2 2/0/0
  - Meets MnTC Goal Area 6F. Group piano lessons are designed for students with no piano experience. The course includes an emphasis on solo and ensemble playing as well as improvisation, technique and theory.

- **MUSC 1115 America’s Musical Heritage** 3 3/0/0
  - Meets MnTC Goal Areas 6 and 7. This survey course for the general college student introduces the elements, structural designs and historical styles of music. Emphasis is placed on expansion of listening skills, musical experiences, field research and cultural contexts of American musical styles, including jazz, country, R&B, hip hop, rap, salsa, reggae and urban folk styles.

- **MUSC 1116 World Music** 3 3/0/0
  - Meets MnTC Goal Areas 6 and 8. This survey course for the general college student introduces the elements, structural designs and historical styles of music. Emphasis is placed on expansion of listening skills and musical experiences with music of the Western notated tradition (classical music), Native America, Africa, India, Latin America, Asia and Eastern Europe.

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<tbody>
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<td>MUSC 1151</td>
<td>Ind Voice Lessons</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. Students interested in individual voice lessons should contact the music department so that instruction can be arranged. There is an additional fee. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 1160</td>
<td>Makings of a Rock Band</td>
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<td>Meets MNTC Goal Area 6F. Students study and prepare music in the various styles of pop, rock, metal, blues and jazz. The group(s) will perform each semester. Special emphasis will be given to songwriting, improvisation and performing. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 1162</td>
<td>Jazz Ensemble</td>
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<td>Meets MNTC Goal Area 6F. The Jazz Ensemble meets on a weekly basis, studies and prepares music in the various styles of jazz and performs one concert each semester. Special emphasis will be given to jazz improvisation as an integral part of this music. Enrollment is open to any instrumentalist at the discretion of the instructor. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<tr>
<td>Corequisite: None</td>
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<tr>
<td>MUSC 1164</td>
<td>Concert Band</td>
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<td>Meets MNTC Goal Area 6F. The M State Concert Band is an instrumental group that meets three times per week on a regularly scheduled basis. The group will study and prepare music from a wide range of composers and styles and performs a minimum of one concert each semester. This ensemble will participate in campus life venues, festivals and occasional area tours. Small ensemble performances will also be included in this experience. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<tr>
<td>Corequisite: None</td>
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<tr>
<td>MUSC 1168</td>
<td>Pep Band</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. The M State Pep Band is an instrumental group that meets two times per week on a regularly scheduled basis. The group will study and prepare music from a wide range of composers and styles and performs a minimum of one concert each semester. This ensemble will participate in sporting events, campus life venues and other events. May be repeated for credit.</td>
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<tr>
<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 1181</td>
<td>Private Instrumental Lessons</td>
<td>1</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. Individual woodwind, brass, percussion, string and guitar lessons are offered, subject to instructor availability. Students should contact the music department to arrange instruction. There is an additional fee. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 1185</td>
<td>Private Music Composition Lessons</td>
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<td>Meets MNTC Goal 6. Individual music composition and advanced theory discussion and lessons are offered, subject to instructor availability. Students should contact the music department to arrange instruction. There is an additional fee, and the course may be repeated for credit.</td>
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<tr>
<td>Prerequisite: None</td>
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<tr>
<td>Corequisite: None</td>
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<tr>
<td>MUSC 1191</td>
<td>Ind Piano Lessons</td>
<td>1</td>
<td>0/0</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. Students should contact the music department to arrange individual piano lessons. There is an additional fee. May be repeated for credit.</td>
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<tr>
<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 1192</td>
<td>Piano Pedagogy</td>
<td>2</td>
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<td>This course is a general survey of piano methods, teaching repertoire and curriculum for piano teachers of beginning and intermediate students.</td>
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<td>Prerequisite: None</td>
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<tr>
<td>Corequisite: None</td>
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<tr>
<td>MUSC 2223</td>
<td>Sight Singing and Ear Training III</td>
<td>1</td>
<td>0/0</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. This course is designed to improve skills in two areas: 1) to recognize and notate tonal melodies and rhythmic patterns, and 2) to reproduce at sight what is notated. Must be taken concurrently with MUSC 2224.</td>
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<tr>
<td>Prerequisite: MUSC2124</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2224</td>
<td>Sight Singing and Ear Training IV</td>
<td>1</td>
<td>0/0</td>
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<td></td>
<td>Meets MNTC Goal Area 6F. This course is designed to improve skills in two areas: 1) to recognize and notate tonal melodies and rhythmic patterns, and 2) to reproduce at sight what is notated. Must be taken concurrently with MUSC 2223.</td>
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<tr>
<td>Prerequisite: MUSC2223</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2231</td>
<td>Advanced Theory and Musicianship III</td>
<td>3</td>
<td>0/0</td>
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<tr>
<td></td>
<td>Meets MNTC Goal Areas 2 and 6. This course offers continued study and application of concepts from MUSC 1121 and 1122, including functional harmony, basic style and form analysis, chromatic harmony and an introduction to 20th century harmonic practices. Course includes comparisons of music from various stylistic periods and beginning studies in counterpoint.</td>
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<tr>
<td>Prerequisite: MUSC1122 AND MUSC1124</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2232</td>
<td>Advanced Theory and Musicianship IV</td>
<td>3</td>
<td>0/0</td>
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<td></td>
<td>Meets MNTC Goal Areas 1121 and 1122, including functional harmony, basic style and form analysis, chromatic harmony and an introduction to 20th century harmonic practices. Course includes comparisons of music from various stylistic periods and beginning studies in counterpoint.</td>
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<tr>
<td>Prerequisite: MUSC2231</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2251</td>
<td>Individual Voice Lessons</td>
<td>2</td>
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<td>Meets MNTC Goal Area 6F. Individual voice lessons of one hour per week are open to advanced students with instructor's consent. The course is required. There is an additional fee, and it may be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2281</td>
<td>Private Instrumental Lessons</td>
<td>2</td>
<td>0/0</td>
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<td></td>
<td>Meets MNTC Goal Areas 2 and 6. Individual woodwind, brass, percussion and guitar lessons of one hour per week are open to advanced students with instructor's consent. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2285</td>
<td>Advanced Music Composition</td>
<td>2</td>
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<td></td>
<td>Meets MNTC Goal 6. Individual advanced music composition and advanced theory discussion and lessons. Subject to instructor availability. Students should contact the music department to arrange instruction. Additional fee. May be repeated for credit.</td>
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<tr>
<td>Prerequisite: MUSC1185</td>
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<td>Corequisite: None</td>
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<tr>
<td>MUSC 2291</td>
<td>Individual Piano Lessons</td>
<td>2</td>
<td>0/0</td>
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<td>Meets MNTC Goal Area 6F. Individual piano lessons of one hour per week are open to advanced students with instructor's consent and required of piano performance or piano pedagogy majors. Course includes additional studio classes and required performances at the instructor's discretion. Interested students should contact the music department to arrange instruction. There is an additional fee. May be repeated for credit.</td>
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<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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**Nursing**

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<tr>
<th>Course #</th>
<th>Course Title</th>
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<th>Lec/Lab/OJT</th>
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<tbody>
<tr>
<td>NURS 1400</td>
<td>Introduction to Professional Nursing</td>
<td>2</td>
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<td>This course will introduce the student to the concepts of professional nursing to include the evolution of nursing practice, professional behavior, scope of practice, therapeutic communication, nursing process, evidence-based practice, medical terminology, care plan and documentation, physiologic adaptation health care delivery system, spirituality and death and dying.</td>
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<tr>
<td>Prerequisite: CSCI1101 AND MATH0090 OR CPTTR1100 AND MATH0090 OR CPTTR1104 AND MATH0090</td>
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<td>Corequisite: None</td>
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<th>Course #</th>
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<th>Lec/Lab/OJT</th>
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<tr>
<td>NURS 1406</td>
<td>Nursing Fundamentals I</td>
<td>3</td>
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<td>This course begins to prepare students to provide safe, therapeutic nursing care to diverse patient populations across the lifespan. Content includes aseptic techniques and infection control; holistic assessment; basic pharmacological principles and concepts; safe medication administration; pain management; complementary/alternative therapies; and perioperative nursing care. This course also integrates the evolution of nursing practice, professional behavior, scope of practice, therapeutic communication, nursing process, evidence-based practice, medical terminology, care plan and documentation, physiologic adaptation health care delivery system, spirituality and death and dying.</td>
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<tr>
<td>Prerequisite: CSCI1101 AND MATH0090 OR CPTTR1100 AND MATH0090 OR CPTTR1104 AND MATH0090</td>
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<td>Corequisite: None</td>
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<tr>
<td>NURS 1415</td>
<td>Nursing Clinical I</td>
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<td>This course will promote the application of fundamental skills while providing holistic nursing care to a diverse group of patients. This course incorporates but is not limited to application of the nursing process, critical thinking, reporting and recording, physical assessment, medication administration as well as other fundamental nursing skills within the role of the professional nurse.</td>
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<td>Prerequisite: NURS1400 AND NURS1406</td>
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<td>Corequisite: None</td>
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<tr>
<th>Course #</th>
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<tbody>
<tr>
<td>NURS 1416</td>
<td>Nursing Fundamentals II</td>
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<td>This course is designed to prepare students to apply teaching and learning principles in promotion, maintenance and restoration of health to diverse patient populations across the lifespan and integrates the content and skill necessary to promote and maintain health and wellness of the gastrointestinal, metabolic, immune, hematologic, cardiovascular, respiratory and urinary systems, as well as fluid and electrolyte balance.</td>
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<tr>
<td>Prerequisite: NURS1400 AND NURS1406</td>
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<tr>
<td>Corequisite: None</td>
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</table>
Course #  Course Title  CR  Lec/Lab/OJT  Course #  Course Title  CR  Lec/Lab/OJT
NURS 1426  Reproductive Health  2  2/0/0  Prerequisite:  NURS1400 AND NURS1406
This course introduces the student to antepartal, intrapartal and postpartal nursing care for mother and infant. Holistic care and wellness promotion is emphasized. Students will plan nursing care for diverse clients across the lifespan to maintain and promote reproductive wellness to include normal sexuality, fertility and family planning. Students will plan nursing care to maintain and promote wellness for pediatric patients, to include normal growth and development.
Corequisite:  None
NURS 2120  Professional Nursing Pharmacology  2  2/0/0  Prerequisite:  NURS1400 AND NURS1415 AND NURS1416 AND NURS1426 OR NURS2410
This course will provide the nursing student with specific considerations related to medication administration for drug classifications related to disease processes. Actions, therapeutic uses, adverse effects and interactions of drug categories will be discussed. Nursing considerations for categories of common drug classifications will be covered. Legal and ethical considerations for the professional nurse in regard to drug administration will be studied.
Corequisite:  BIOL2232 AND NURS1406 OR NURS2410
NURS 2410  Role Transition  2  2/0/0  Prerequisite:  NURS1400 AND NURS1406 AND NURS1415 AND NURS1416 AND NURS1426 OR NURS2410
This course is designed to help the practical nursing student prepare for his/her transition to the Associate Degree Nursing role. Primary content includes role differentiation, physical assessment, nursing process care planning and teaching and learning.
Corequisite:  None
NURS 2426  Reproductive Disorders  2  2/0/0  Prerequisite:  NURS1400 AND NURS1406 AND NURS1415 AND NURS1416 AND NURS1426 OR NURS2410
This course is designed to prepare students to plan care to meet basic human needs to assist patients/clients as they adapt to abnormal pregnancy, delivery, post-partum, reproductive conditions and/or newborn illnesses or abnormalities.
Corequisite:  None
NURS 2437  Nursing Clinical II  4  0/4/0  Prerequisite:  NURS2410 OR NURS1404 AND NURS1415 AND NURS1416 AND NURS1426 OR NURS1406 AND NURS1415 AND NURS1416 AND NURS1426
The focus of this clinical course is for the student to assess, plan, implement and evaluate care for one to two patients/clients.
Corequisite:  None
NURS 2438  Restorative Nursing I  4  4/0/0  Prerequisite:  NURS2410 OR NURS1404 AND NURS1415 AND NURS1416 AND NURS1426 OR NURS1406 AND NURS1415 AND NURS1416 AND NURS1426
This course is designed to prepare students to plan care to meet basic human needs to assist patients/clients across the life-span as they adapt to neurological, sensory, musculoskeletal, gastrointestinal, metabolic and immunological dysfunction.
Corequisite:  None
NURS 2447  Nursing Clinical III  4  0/4/0  Prerequisite:  NURS2410 OR NURS1404 AND NURS1415 AND NURS1416 AND NURS1426
This course is designed to prepare students to plan care to meet basic human needs to assist patients/clients across the life-span as they adapt to dysfunction of the intergumentary, urinary cardiac, hematologic and respiratory systems, as well as fluid, electrolyte abnormalities.
Corequisite:  None
NURS 2448  Restorative Nursing II  3  3/0/0  Prerequisite:  NURS1400 AND NURS1406 AND NURS1414 AND NURS1426 AND NURS2426 AND NURS2435 AND NURS2437 AND NURS2438 AND NURS2464
This course is designed to prepare students to plan care to meet basic human needs to assist patients/clients across the life-span as they adapt to dysfunction of the intergumentary, urinary cardiac, hematologic and respiratory systems, as well as fluid, electrolyte abnormalities.
Corequisite:  None
NURS 2455  Advanced Intravenous Therapy  1  0/1/0  Prerequisite:  NURS1415 AND NURS2425 OR NURS2410
This lab course will focus on advanced nursing skills performed by the professional nurse. Concepts will include advanced medication calculations and nursing care for patients throughout the life span which include peripheral catheters, central catheters, safe administration of blood products, chemotherapy and parenteral nutrition.
Corequisite:  None
NURS 2464  Nursing Leadership  1  1/0/0  Prerequisite:  NURS2415 AND NURS2445 OR NURS2410
This course is designed to prepare students for their role as nurse leader. Areas of focus include knowledge and skills necessary to make decisions regarding setting priorities, delegation, management, supervision, teaching, continuity of care, legal parameters of nursing practice and ethical issues in nursing.
Corequisite:  None
NURS 2466  Mental Health Nursing  2  2/0/0  Prerequisite:  None
This course introduces the student to concepts of mental health, mental illness and its theories along with psycho-pharmacology. Emphasis is placed on the holistic nursing care of patients and clients with psychiatric and substance abuse disorders.
Corequisite:  None

Paralegal

PARA 1101  Introduction to Paralegal  3  3/0/0  Prerequisite:  None
This course provides an overview of the paralegal profession, the legal office and the legal system.
Corequisite:  None
PARA 1102  Research and Writing I  3  3/0/0  Prerequisite:  None
This course is a general introduction to recorded sources of law. It will examine where and how it can be found. The course will include discussion of the sources of law and practical writing exercises.
Corequisite:  ENGL1101 OR ENGL009S
PARA 1104  Civil Law for Paralegals  3  3/0/0  Prerequisite:  None
This course prepares the paralegal for working with civil litigation and its associated processes. Included in the study are rules for civil procedure, court and non-court processes, applicable appellate procedures, mediation, arbitration and the role of the paralegal as it relates to civil law.
Corequisite:  None
PARA 1105  Criminal Law for Paralegals  3  3/0/0  Prerequisite:  None
This course prepares the paralegal for working with criminal defense or criminal prosecution. Included in the study is the organization of the criminal justice system, the nature of crimes, constitutional issues, applicable appellate procedures and the role of the paralegal as it relates to criminal law.
Corequisite:  None
PARA 1106  Wills, Trusts and Probate  3  3/0/0  Prerequisite:  None
This course includes a study of the procedures, documents and other techniques used in the planning for transfer of property after death and the administration of estates.
Corequisite:  None
PARA 1110  Torts for Paralegal  3  3/0/0  Prerequisite:  None
This course includes the study of the procedures, documents and techniques used in the practice of civil litigation, personal injury and family law. Topics for civil litigation include case intake, discovery, trial preparation, trial practice and post-judgment relief. Topics for family law include marriage, separation, divorce, annulment, adoption and custody.
Corequisite:  None
PARA 1112  Legal Ethics for the Paralegal  3  3/0/0  Prerequisite:  None
This course covers the attorney-client privilege as it relates to paralegals, unauthorized practice of law, regulation of paralegals, ethical codes and rules.
Corequisite:  None
PARA 2202  Research and Writing II  3  3/0/0  Prerequisite:  PARA1102
This course is a continuation of Research and Writing I. Students will develop skills in identifying, analyzing and researching legal issues. Writing exercises will be more complex, including preparation of legal memoranda.
Corequisite:  None
PARA 2204  Real Property  3  3/0/0  Prerequisite:  None
This course includes the law dealing with interest in, ownership of and title to real estate. Emphasis will be placed on legal descriptions, recording systems, procedures and documents for real property transfer and zoning of real property.
Corequisite:  None
PARA 2210  Advanced Paralegal Practices  3  3/0/0  Prerequisite:  None
This course provides in-depth study of law using statute and case research. Students will examine legal issues in different areas of law and participate in discussion of these topics. Topics will range from law office structure and finances to procedural law and interviewing techniques. Instructor may include legal topics that are hot at the time of course offering.
Corequisite:  None
PARA 2212  Family Law  3  3/0/0  Prerequisite:  None
This course will explore and research family law concepts of marriage, divorce, annulment, child custody, property settlements and adoption.
Corequisite:  None

www.minnesota.edu  151  Minnesota State Community and Technical College  Course Catalog 2013-2014  COURSE DESCRIPTIONS
Personal Development

PDEV 1101 Campus Life- Active Living 3 3/0/0
This course is designed to help M State students strengthen and develop critical and creative thinking skills associated with a college academic experience, make social adaptations to a new environment and make connections with faculty, staff and resource offices. Topics include an understanding of individual risks and barriers, time management and personal responsibility. This class is also designed to develop student awareness of how to live a healthy holistic lifestyle. Students will also participate in physical activities that promote a healthy, drug-free on-campus environment. Additional topics to be discussed may include but are not limited to goal setting, stress management, and drug and alcohol use.
Prerequisite: None
Corequisite: None

PDEV 1102 Contemporary Career Search 0/1/0
This course is designed to introduce contemporary career topics as employer expectations, job market trends and networking, and various aspects of the employment search process including legal and ethical issues. To apply their knowledge of the employment process, students develop resumes, letters and applications, as well as identify and use effective interviewing techniques. This course emphasizes a comprehensive knowledge of career processes that will serve students throughout their working lives.
Prerequisite: None
Corequisite: None

Physical Education

PE 1100 Introduction to Curling 2 1/1/0
This course will focus on the introduction to the fundamentals of play, rules, scoring and equipment of the sport.
Prerequisite: None
Corequisite: None

PE 1109 Wellness Skills 2 1/1/0
This course is designed to introduce wellness concepts and provide the knowledge and skills necessary to develop a healthy physical, mental and social lifestyle. Students will actively seek to develop and maintain a balance of these elements through increased knowledge of appropriate activities including positive and responsible belief systems and choices. Topics may include anatomy, physiology, kinesiology, emotional/mental health, nutrition, fitness, weight management, drug use/abuse, planning and commitment to change. Course includes physical activity participation by students.
Prerequisite: None
Corequisite: None

PE 1130 Beginning Golf 1 0/1/0
The purpose of this course is to cover the fundamentals of golf necessary to play at the beginning recreational level. Topics of discussion include rules, etiquette, equipment and terminology. Students will be taught in the classroom and on the golf course. An additional fee will be assessed.
Prerequisite: None
Corequisite: None

PE 1141 Introduction to Strength Training 1 0/1/0
This course is an introduction to weight lifting, weight room safety, periodization, energy systems, nervous system, muscular system and how this information is used to formulate a weight training program as a means to achieve muscular strength, muscular endurance, tone or size. This class may be repeated once for credit.
Prerequisite: None
Corequisite: None

PE 1190 Varsity Football 1 0/1/0
This course presents students with the opportunity to participate in the sport of football at the college-level. The student will have opportunities in a variety of situations to learn about and develop their self-image, characteristics of high achievement and physical skills in a competitive environment. May be repeated once for credit.
Prerequisite: Permission of head coach
Corequisite: None

PE 1192 Varsity Basketball 1 0/1/0
This course presents students with numerous opportunities in a variety of situations to learn about and develop their self-image, characteristics of high achievement and physical skills in a competitive basketball environment. This class may be repeated once for credit.
Prerequisite: None
Corequisite: None

PE 1193 Varsity Baseball 1 0/1/0
This course presents students with numerous opportunities in a variety of situations to learn and develop the characteristics of high achievement and physical skills in a competitive intercollegiate baseball setting.
Prerequisite: Permission of head coach
Corequisite: None

Philosophy

PHIL 1130 Critical Thinking 3 3/0/0
This course focuses on studying the structure of arguments, the detection of common argument fallacies, the creation of cogent arguments and the acquisition of skills needed to translate clearly constructed arguments into persuasive essays on contemporary topics. Students will study inductive and deductive styles of thinking, valid and invalid argument forms, the differences between facts and values, judgment and belief, and the importance linguistic definition plays in constructing strong arguments.
Prerequisite: None
Corequisite: None

PHIL 1200 Applied and Professional Ethics 3 3/0/0
Meets MnTC Goal Areas 2 and 9. In this course students will explore ethical issues that arise in professional settings including business, medical and technical settings. The course will also look at the philosophical underpinnings of current professional policies and how philosophy can offer insights that can enhance and deepen such policies.
Prerequisite: None
Corequisite: None

PHIL 1201 Ethics 3 3/0/0
Meets MnTC Goal Areas 2, 6 and 9. This course is an introduction to the topic of ethics. In this course, the following questions are examined: What is ethics? How do we make ethical decisions? Are things that are legally right necessarily right? Should we consider our own interests when making ethical decisions? Are things equally right simply because God says they are right? If our culture says something is ethically right, does that mean it is ethically right? The course also examines numerous topical ethical issues such as racism, terrorism and censorship.
Prerequisite: None
Corequisite: None
PHIL 1211 Intro to Philosophy 3 3/0/0
Meets MnTC Goal Areas 1 and 6. This course is an introduction to philosophy. In this course, the following questions are examined: Does God exist? Does God not exist? Can evil and God both exist? Do humans have a free will? Do humans have souls? Is there life after death? What can we know? Why do some people believe that knowing anything is possible? Prerequisite: None Corequisite: None

PHIL 2200 Philosophy of Communications 3 3/0/0
Meets MnTC Goal Areas 1 and 2. This course will be a survey of several 20th century philosophical movements, such as logical positivism, ordinary language philosophy, hermeneutics, and semiotics. Careful attention to language is one of the keys to the resolution of philosophical problems. Students will be introduced to theories of meaning and truth and the structure of language. This course will explore the relation of language to thought and the world; semantics and syntax; descriptions and reference; and structuralism and the possibility of objective knowledge. The works of representative thinkers in the analytic tradition could include Frege, Moore, Russell and Wittgenstein, while representatives from the continental tradition could include the likes of Ferdinand de Saussure, Umberto Eco, Hans-Georg Gadamer and Roland Barthes. Prerequisite: ENGL1101 Corequisite: None

PHIL 2220 Environmental Ethics 3 3/0/0
Meets MnTC Goal Areas 9 and 10. This course examines the basic positions and concepts within the field of environmental philosophy. A primary emphasis will be placed upon understanding our moral obligations toward the natural world. Representative course topics may include the following: What is nature? Do humans have direct duties toward the natural world? What is deep ecology? Should we conserve or preserve our natural environment? Do intrinsic values exist in nature? Is a land ethic possible? What is ecofeminism? Prerequisite: None Corequisite: None

PHIL 2224 Philosophy of Religion 3 3/0/0
Meets MnTC Goal Areas 2, 6 and 8. This course explores proposed answers to the question, What role can religion play when considering questions about the meaning of life? The course will consider the traditional arguments for the existence of God as expressed by Western thinkers as well as non-Western efforts to reconcile order and disorder in the universe. The course will focus on the relationship between faith and reason and will reflect on the nature of religious experience and how diverse cultures express various ways of knowing about the divine. Prerequisite: None Corequisite: None

PHIL 2225 Bioethics 3 3/0/0
Meets MnTC Goal Areas 2 and 9. This course explores ethical issues that arise from advancements in science and technology (e.g. genetic engineering, cloning, patent rights) as well as look at the philosophical underpinnings of current scientific research and how philosophy is different from science and the law. Prerequisite: None Corequisite: None

PHIL 2230 Political and Social Philosophy 3 3/0/0
Meets MnTC Goal Areas 5 and 7. This course addresses issues with regard to political philosophy and social philosophy. This course will be an introduction to some basic problems in political and social philosophy. Students will be introduced to the main areas of political philosophy and social philosophy and the main American and non-American contributors to each area. Prerequisite: None Corequisite: None

PHIL 2300 Political and Social Philosophy 3 3/0/0
Meets MnTC Goal Areas 5 and 7. This course addresses issues with regard to political and social philosophy and social organizations over the course of human history. The course will explore a detailed philosophical analysis of the writings (both classical and contemporary) about social and political concepts such as freedom, democracy, socialism, communism, fascism and anarchy with a particular interest in the evolution of these concepts. Questions concerning the nature, justification and limits of political power will be explored. In addition to this, theories of distributive justice, culpability, causality and responsibility will be examined in connection with the study of important political and social positions. Prerequisite: None Corequisite: None

PHRM 1001 Fundamental Concepts of Pharmacy 3 3/0/0
This course introduces the student to the organization and function of the institutional, ambulatory and industrial pharmacy. Emphasis is placed upon the duties and responsibilities of the pharmacy technician and the calculations required to accurately prepare patient medications for distribution. Prerequisite: MATH0052 Corequisite: None

PHRM 2001 Pharmacy Prin / Pract I 4 2/2/0
This course covers drug names, classifications and mechanisms of action, the use of computers in pharmacy and their practical applications. The student will be introduced to hospital and retail dispensing techniques as well as basic customer service. Prerequisite: PHRM1001 Corequisite: PHRM1001

PHRM 2002 Pharmacy Prin / Pract II 5 2/3/0
This course covers intravenous drug admixture, TPN compounding, critical care intravenous admixture and critical care drug products, and the procedures required to develop and maintain inventory control. Prerequisite: PHRM1001 AND PHRM2001 Corequisite: None

PHRM 2004 Drug Properties / Distribution 3 2/1/0
This course provides the student with basic physical and chemical drug properties and the functions related to purchasing and inventory control in the pharmacy. Emphasis is placed upon the theory, stability and safety of drug products, and the procedures required to develop and maintain inventory control. Prerequisite: PHRM1001 AND PHRM2001 Corequisite: None

PHRM 2010 Experiential / Hospital 3 0/0/3
This supervised instructional experience in the clinical setting introduces the student to tasks performed by the pharmacy technologist. Prerequisite: PHRM2002 AND PHRM2004 Corequisite: None

PHRM 2012 Experiential / Retail 3 0/0/3
This supervised instructional experience in the clinical setting introduces the student to tasks performed by the pharmacy technologist. Prerequisite: PHRM2002 AND PHRM2004 Corequisite: None

PHYS 1105 Fundamental Concepts of Physics 3 3/0/0
Meets MnTC Goal Area 3. This is a demonstration-based course that provides an introduction to selected topics in classical and modern physics. Topics will include measurement and significant digits, graphing, dimensional analysis, mechanics of motion, vibrations, waves, sound, electricity and magnetism, light and optics, atomic physics and atomic spectra, lasers and optical fibers, nuclear physics and radiation. The course uses active learning techniques with lab-like experiences. It uses many demonstrations and instructor-guided small group problem-solving activities. Simple algebra is used to ensure that students grasp the course concepts. This course is intended for all students but especially designed for non-science majors who want an appreciation of and a limited working knowledge in some major areas of physics. Prerequisite: MATH090 AND Math 0909 or assessed into a higher math Corequisite: None

PHYS 1160 Fund of Physics - Mechanics 2 1/1/0
Meets MnTC Goal Area 3. This course is an introduction to selected topics in classical physics. The topics covered include measurement and significant digits, dimensional analysis, vectors, motion, force, work and energy, momentum and rotational dynamics. An introductory-level college algebra is used frequently to ensure that students grasp the
Principles and retain a working knowledge of them. This course may be taken separately from PHYS 1105 and is intended for all students but especially designed for those who need an introductory-level working knowledge of physics.

**Prerequisite:** MATH1020

**Corequisite:** None

**PHYS 1107** Physics of Music 3 3/0/0

Meets MnTC Goal Areas 3 and 6. This course is an introduction to physics as it applies to the art and performance of music. The course will be a mixture of lecture and lab-like experiences with both elements meeting concurrently. Experiments will be conducted by both students and professional musicians and are designed to be a special experience for music students. The lab will include student-designed experiments. Students will design and perform musical experiments on the greenhouse gas emissions topic.

**Prerequisite:** None

**Corequisite:** None

**PHYS 1120** Introduction to Astronomy 3 3/0/0

Meets MnTC Goal Area 3. This course introduces the student to basic concepts of astronomy, the use of astronomical instruments and recent discoveries in astronomy and cosmology. This non-lab course with lab-like experiences is designed for science and non-science majors.

**Prerequisite:** MATH0900 AND Math 0900 or assessed into a higher math

**Corequisite:** None

**PHYS 1401** College Physics I 4 3/1/0

Meets MnTC Goal Area 3. This course gives a theoretical and practical introduction to physics, including kinematics in one and two dimensions, force and dynamics, bodies in equilibrium, work and energy, linear momentum, rotational motion, fluids, waves and sound. Lab equipment is used to illustrate these concepts. A mastery of college algebra and some trigonometry is essential for success in this course. The ability to use computers for creating reports and spreadsheets is needed for lab work. Physics 1401 is intended for all students but especially designed for students majoring in forestry, biological sciences, dentistry, pharmacy, veterinary medicine, physical therapy and other fields related to medicine. Lab is required.

**Prerequisite:** MATH1115

**Corequisite:** None

**PHYS 1402** College Physics II 4 3/1/0

Meets MnTC Goal Area 3. This course is open to all students and gives a theoretical and practical introduction to physics. It is a continuation of PHYS 1401, College Physics I. However, it may be taken without having taken PHYSICS 1401. Topics include thermodynamics, selected topics in electricity and magnetism, DC and AC circuit theory, light, and electromagnetic radiation, atomic physics, spectroscopy, lasers and photonics, and nuclear physics. Lab equipment is used to illustrate these concepts. A mastery of college algebra and some trigonometry is essential for success in this course. Lab is required. Physics 1402 is intended for all students but especially designed for students majoring in forestry, biological sciences, dentistry, pharmacy, veterinary medicine, physical therapy and other fields related to medicine.

**Prerequisite:** MATH1134

**Corequisite:** None

**PHYS 1411** University Physics I 5 3/2/0

Meets MnTC Goal Area 3. This course, which is open to all students but especially suited for engineering students, gives a theoretical and practical introduction to physics for math, science, and engineering majors. It is a calculus-based course. Topics include kinematics of one and two dimensions, force and dynamics, bodies in equilibrium, work and energy, linear momentum, rotational motion, fluids, waves and sound. Lab equipment is used to illustrate these concepts. A mastery of college algebra and some trigonometry is essential for success in this course. The ability to use computers for creating reports and spreadsheets is needed for lab work. Lab is required.

**Prerequisite:** MATH1134

**Corequisite:** None

**PHYS 1412** University Physics II 5 3/2/0

Meets MnTC Goal Area 3. This course is open to all students but is especially suited for engineering students. The course is a continuation of PHYS 1411, University Physics I. However, it may be taken without having taken PHYSICS 1411. Topics include thermodynamics, selected topics in electricity and magnetism, DC and AC circuit theory, optics, light and electromagnetic radiation, atomic physics, spectroscopy, lasers, photonics and nuclear physics. Lab equipment is used to illustrate these concepts. A mastery of college algebra as well as knowledge of calculus and trigonometry is essential for success in this course. Lab is required.

**Prerequisite:** MATH1134

**Corequisite:** None

**PHYS 2970** Internship Experience 1-3 None

This course is designed to provide the student with a monitored meaningful work experience related to his or her field of interest. This experience will increase employability and enhance life skills. Completion of this course requires a written report and an evaluation from the student’s supervisor. Each internship is an individualized experience, therefore this course is offered with variable credits. The student may choose from 1, 2 or 3 credits as pre-arranged with the internship site supervisor and corresponding faculty. Each credit will require a minimum of 45 hours of on-the-job learning. This course will be graded Pass/Fail only.

**Prerequisite:** Instructor approval

**Corequisite:** None

**PLBG 1102** Piping Trades and Job Safety 2 2/0/0

This course introduces the student to the plumbing profession. Topics will include history, safety, plumbing tools, plumbing terminology, plumbing system components, basic plumbing principles and fundamentals of rigging.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1104** Building Sewers and Drainage Systems 3 1/2/0

This course will introduce the student to basic proper techniques and procedures for the installation of plumbing systems. Topics will include drain, waste and vent systems, potable water systems, gas piping systems and system testing.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1106** Piping Grades, Elevations and Calculations 3 2/1/0

This course covers the application of mathematics to plumbing calculations in applying code regulations pertaining to proper installation procedures of horizontal drainage piping. The student will use formulas common to the piping industry.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1108** Plumbing/Piping Drawings 2 1/1/0

This course provides the student with a technical understanding and skills in blueprint reading needed by plumbers. Topics will include floor plans, elevation plans, detail drawings and interpretation of isometric drawings.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1110** Copper Pipe Procedures 2 1/1/0

This course provides the student with the technical knowledge and skills for completing copper piping procedures. Topics include safety, appropriate usage, sizes and weights of pipe tubing, fittings including flared and compression types, soldering and brazing techniques for copper pipe work.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1112** Plastic Pipe Procedures 2 1/1/0

This course provides the student with an understanding and the skills for completing plastic piping procedures. Topics include safety, joining drainage, waste and vent water distribution piping, and applicable state plumbing code for plastic piping procedures.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1114** Steel Pipe Procedures 2 1/1/0

This course provides the student with an understanding and the skills for completing steel piping procedures. Topics include appropriate usage, fittings, safety, tools, equipment and skill development in cutting, threading and fabricating steel piping systems.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1116** Plumbing Systems 3 2/1/0

This course will provide the student with continued studies in plumbing systems. Topics will include drain, waste and vent systems, potable water systems, gas piping systems, system testing and advanced plumbing principles.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1120** Plumbing Installation 3 0/3/0

This course will provide the student with continued studies of proper techniques and procedures for the installation of plumbing systems. Topics will include drain, waste and vent systems, potable water systems, faucets, fixtures, water heaters and testing systems.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1122** Plumbing Repair and Service Work 2 1/1/0

This course provides the student with practical experiences in repair, maintenance and servicing of plumbing systems common to a variety of settings.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1124** Plumbing Field Internship 3 0/0/3

This course will provide the student with the opportunity to utilize the skills, techniques and procedures developed in previous coursework in an actual work environment. The student will complete industry training under the supervision of an approved employer.

**Prerequisite:** None

**Corequisite:** None

**PLBG 1126** Oil Burner Service Work 3 1/2/0

This course covers the servicing of the fuel pump, testing and servicing the fuel supply, the oil burner nozzle, basic oil burner controls, combustion testing and adjusting the oil burner for maximum efficiency.

**Prerequisite:** None

**Corequisite:** None
PLBG 1128 Heating Systems Design and Installation 3 2/1/0
This course provides the student with a technical understanding of heating system design and installation. Topics include heat loss calculations, heating system selection and design, installation techniques, testing procedures and operation of heating systems.
Prerequisite: None
Corequisite: None

PLBG 1130 Hydronic Heating 3 1/2/0
This course provides the student with a technical understanding of hydronic heating system design. Topics include heat loss calculations and heating systems selection and design.
Prerequisite: None
Corequisite: None

PLBG 1132 Water Treatment/ Conditioning 3 2/1/0
In this course the student will learn water softer service, water treatment in boilers, pH balance, testing of sanitary water and gray water hazards.
Prerequisite: None
Corequisite: None

PLBG 1134 Advanced Plumbing Blueprints 3 1/2/0
This course will provide the student with continued studies in blueprint reading. Topics will include specifications, fixture drawings, shop drawings and advanced isometrics.
Prerequisite: None
Corequisite: None

PLBG 1136 Basic Plumbing Code 2 2/0/0
This course will introduce the student to model plumbing code rules and regulations. Topics will include the Minnesota State Plumbing Code and Uniform Plumbing Code.
Prerequisite: None
Corequisite: None

PLBG 1138 Advanced Plumbing Code 3 3/0/0
This course will provide the student with continued studies of model plumbing code rules and regulations. Topics will include the Minnesota State Plumbing Code and Uniform Plumbing Code.
Prerequisite: None
Corequisite: None

PLBG 1140 Plumbing Service Learning Project 3 0/0/3
This course will provide the student with the opportunity to utilize the skills, techniques and procedures developed in previous coursework in a designated community service learning project. The student will perform community service under the supervision of an approved community partner.
Prerequisite: None
Corequisite: None

Practical Nursing

PNSG 1200 Concepts of Nursing 2 2/0/0
This course explores the role of the practical nurse. The core values of integrity, holism, caring, patient-centeredness, diversity, excellence and ethics are introduced. Curriculum threads including the nursing process, critical thinking, communication, documentation, teamwork, self-awareness and evidence-based practice are integrated throughout the course.
Prerequisite: Acceptance into the practical nursing program
Corequisite: None

PNSG 1205 Nursing Pharmacology 3 3/0/0
This course will introduce the foundations of basic pharmacology within the scope of practical nursing. Curriculum threads including drug classifications, therapeutic effects, side effects, interactions and dosage calculations are integrated throughout the course.
Prerequisite: None
Corequisite: PNSG1207 AND BIOL2262 AND BIOL2263

PNSG 1207 Health Promotion I 5 3/2/0
This course will introduce the foundations of nursing care for diverse populations. Curriculum threads including nursing principles and application of safety, asepsis and infection control, data collection, medication administration, perioperative care, patient comfort, fluids and electrolytes, nutrition, laboratory values and diagnostics, and the integumentary system are integrated throughout the course.
Prerequisite: None
Corequisite: PNSG1200 AND BIOL2260 AND BIOL2261

PNSG 1209 Maternal Child Health 3 3/0/0
This course focuses on the nursing care of the maternal-child patient within the scope of the practical nurse. Curriculum threads including the female reproductive system and sexual health, peripartum nursing care, nursing care related to the newborn, infant, child and adolescent, and nursing care of the gynecological patient are integrated throughout the course.
Prerequisite: PSYC2222 AND PNSG1200 AND BIOL2262 AND BIOL2263
Corequisite: None

PNSG 1216 Practical Nursing Clinical I 5 0/5/0
This course introduces the student to patient-centered care within the scope of practical nursing. The student begins to demonstrate caring, integrity and holism with actual patients. The student applies principles of critical thinking, the nursing process, ethics and values while providing care to diverse patients. Curriculum threads of data collection, medication administration, documentation, safety and communication are integrated throughout this nursing course.
Prerequisite: American Heart Association Health Care Provider CPR AND PNSG1200 AND PNSG1207
Corequisite: PNSG1209 AND PNSG1217 AND PNSG1225

PNSG 1217 Health Promotion II 4 2/2/0
The course will expand on the foundations of health promotion, maintenance and restoration to a diverse population. Curriculum threads include pathophysiology, data collection, pharmacology and nursing care related to the musculoskeletal, respiratory, urinary, male reproductive and gastrointestinal systems.
Prerequisite: PNSG1207
Corequisite: BIOL2262 AND BIOL2263

PNSG 1212 Psychosocial Nursing 2 2/2/0
This course focuses on nursing care that assists with promotion and support of the emotional, mental and social well-being of diverse clients within the scope of the practical nurse. Curriculum threads of coping mechanisms, stress and crisis management, therapeutic communication, mental health and illness, grief and loss, end-of-life concepts and cognitive challenges are integrated throughout the course.
Prerequisite: PSYC2222
Corequisite: PNSG1200

PNSG 1223 Health Promotion III 4 4/0/0
This course expands on the foundations of health promotion, maintenance and restoration of diverse populations. The curriculum threads include pathophysiology, data collection, pharmacology and nursing care related to the cardiovascular, immune, hematological, neurological, sensory and endocrine systems.
Prerequisite: PNSG1207 AND PNSG1216
Corequisite: None

PNSG 1226 Practical Nursing Clinical II 4 0/4/0
This course builds on patient-centered caring within the scope of practical nursing. The student will build on previously learned core values while integrating critical thinking, safety, quality and evidence-based practice to prioritize care of two patients. Curriculum threads including data collection, dosage calculations, pharmacological concepts, reinforcing patient teaching and documentation are integrated throughout the course.
Prerequisite: PNSG1209 AND PNSG1216 AND PNSG1217
Corequisite: None

PNSG 1232 Principles of Intravenous Therapy 1 0/1/0
This course builds on basic intravenous theory and skills. Curriculum threads include fluid and electrolytes, acid/base balance, intravenous fluids and equipment, push medications, central line dressing changes, central line cap changes, dosage calculations and successful venipuncture. The role of the practical nurse in intravenous therapy is integrated throughout the course.
Prerequisite: PNSG1216
Corequisite: Current Practical Nursing Licensure

POLS 1120 American National Government 3 3/0/0
Meets MnTC Goal Areas 5 and 9. This course provides an analysis of the organization, institutions and functions of the United States government.
Prerequisite: None
Corequisite: None

POLS 1130 State and Local Government 3 3/0/0
Meets MnTC Goal Areas 5 and 9. This course provides an analysis of the organization, procedure and functions of state and local governments and their relationship with the national government.
Prerequisite: None
Corequisite: None
**Course #** | **Course Title** | **CR** | **Lec/Lab/OJT**  
POLS 2204 Comparative Government  | 3  | 0/0 | Meets MnTC Goal Areas 5 and 8. This course provides an introduction to the various systems of government used around the world. Students will compare the processes and institutions of both industrialized and underdeveloped nations and explore how cultures and histories have affected the development of those political systems.  
Prerequisite: None  
Corequisite: None  
POLS 2206 Global Politics  | 3  | 0/0 | Meets MnTC Goal Areas 5 and 8. This course is an introduction to the field of global and international politics, with an emphasis on the history, structure and processes of global relations. Students will study the role of state and non-state actors such as nations, international conflict, war, global economic relations and international organizations. The course will also address current global challenges such as terrorism, arms control, the use of foreign aid in the developing world and/or other pressing issues facing the international political system.  
Prerequisite: None  
Corequisite: None  
POLS 2220 Introduction to Constitutional Theory  | 3  | 0/0 | Meets MnTC Goal Areas 2, 5 and 9. This course focuses on some of the significant constitutional issues that confront policymakers and citizens of the United States. The framework for study is the United States Constitution. Topics covered include governmental powers, separation of powers, civil liberties, civil rights and federalism.  
Prerequisite: None  
Corequisite: None  
POLS 2310 Ideas and Ideologies  | 3  | 0/0 | Meets MnTC Goal Areas 7 and 9. This course provides a survey of the most significant ideological systems in Western politics, with an emphasis on the most influential ideas of the 20th and 21st centuries. Modern political movements such as communism, fascism, liberalism, conservatism, feminism, environmentalism and others will be explored and evaluated, with emphasis on the philosophical roots of these systems.  
Prerequisite: None  
Corequisite: None  

**Psychology**

PSYC 1101 Human Interaction  | 3  | 0/0 | Meets MnTC Goal Areas 2 and 5. This is an introductory course emphasizing practical applications of psycho-social concepts, with specific emphasis on personality development, human relations and motivation. This course is applicable for students in occupational and health-related fields or general education.  
Prerequisite: None  
Corequisite: None  
PSYC 1200 General Psychology  | 3  | 0/0 | Meets MnTC Goal Areas 5 and 9. This is a comprehensive introductory overview of psychology that studies human behavior and mental processes. Topics include research methods, the history of psychology, theories of human behavior, the physiological basis of behavior, sensation, perception, behavioral learning, memory, problem solving, language development, personality theory, intelligence, the influence of groups on the behavior of individuals and altered states of consciousness such as sleep and dreams.  
Prerequisite: None  
Corequisite: None  
PSYC 1500 Positive Psychology  | 3  | 0/0 | Meets MnTC Goal Areas 5 and 9. This course includes different aspects of health psychology, humanistic psychology and positive psychology with emphasis on the integration of psychological, biological and physical factors and the consequences for health and well-being. The course starts with the body’s systems, psychological theories behind well-being, and positive emotions which are followed up by work methods and interventions to improve public health, well-being and a healthy work life. Gender and cultural perspectives will be considered throughout the course. Scientific methodology and the design for the study of positive psychology are also included in the course.  
Prerequisite: None  
Corequisite: None  
PSYC 2220 Abnormal Psychology  | 3  | 0/0 | Meets MnTC Goal Area 5. This course is an introduction to the diagnosis, etiology and treatment of maladaptive behavior. The course will include historical and theoretical approaches, prevention and community resources.  
Prerequisite: None  
Corequisite: None  
PSYC 2222 Developmental Psychology  | 3  | 0/0 | Meets MnTC Goal Area 5. This course is a study of human development from the lifespan perspective, including theories, stages and influences of development. The course views the individual from conception to death through physical, social, emotional and mental development.  
Prerequisite: None  
Corequisite: None  
PSYC 2224 Social Psychology  | 3  | 0/0 | Meets MnTC Goal Areas 5 and 7. This course includes theories and research involving the reaction of individuals to others and the influence of others on individuals. Topics include social thinking, social influence and social relations.  
Prerequisite: None  
Corequisite: None  
PSYC 2226 Behavior and Environmental Management  | 3  | 0/0 | Meets MnTC Goal Areas 2, 5 and 10. This course is an exploration of the scientific study of human behavior and its interrelatedness with the environment. This course describes and explains the acquisition, maintenance and change of behavior with an emphasis on human application within a variety of environmental contexts. This course uses critical thinking on the principles and procedures used to understand and change the environment and human behavior.  
Prerequisite: None  
Corequisite: None  
PSYC 2228 Cross-Cultural Psychology  | 3  | 0/0 | Meets MnTC Goal Area 7. This course is designed to cover the issues and themes current in the field of cross-cultural psychology. Examples of such issues include cultural variation along the lines of collectivism and individualism; psychological principles that might be universal compared to those that are culturally specific; and how content and context affect psychological functioning within, as well as between cultures. A range of substantive areas within psychology will be examined and compared across multiple cultures, including social, developmental, organizational, cognitive and health psychology.  
Prerequisite: None  
Corequisite: None  
PSYC 2230 Personality Psychology  | 3  | 0/0 | Meets MnTC Goal Area 5. This course examines historical and current theoretical perspectives of personality including psychoanalytic, humanistic, behavioral/learning, cognitive, biological and trait theories. This course is designed to examine the methods involved in personality psychology research, the ways in which humans differ with regards to personality, the variables that influence personality and how personality might influence behavior, as well as the development and assessment of personality.  
Prerequisite: PSYC1200  
Corequisite: None  

**PowerSports Technology**

PWST 1010 Introduction to PowerSports I  | 2  | 1/1/0 | This course focuses on the study of two-cycle engine technology. The importance of occupational safety, the use of shop equipment, measuring instruments and service literature, along with appropriate service department etiquette will be addressed. Two-cycle engine theory along with proper lubricants will be taught and expressed with the PowerSports and Marine industry shop experience as a basis for study.  
Prerequisite: None  
Corequisite: None  
PWST 1012 Introduction to PowerSports II  | 2  | 1/1/0 | This course focuses on the study of four-cycle engine technology. The importance of occupational safety, the use of shop equipment, measuring instruments and service literature will be addressed. Four-cycle engine theory along with proper lubricants will be covered. Students will compare the advantages and disadvantages of two-cycle and four-cycle engines. All these will be taught and expressed with the PowerSports and Marine industry shop experience as a basis for study.  
Prerequisite: PWST1010  
Corequisite: None  
PWST 1302 Snowmobile I  | 5  | 2/3/0 | This course covers snowmobile engine designs, component identification and engine service procedures. This course also covers snowmobile fuel systems and service.  
Prerequisite: None  
Corequisite: None  
PWST 1304 Snowmobile Clutching  | 2  | 1/1/0 | This course identifies major components of constant variable transmission systems and discusses maintenance, routine adjustment and tuning of variable transmission clutch systems.  
Prerequisite: None  
Corequisite: None  
PWST 1402 Chainsaws  | 2  | 1/1/0 | Students will learn manufacturers’ repair and testing techniques. Students will learn saw repair, chain sharpening and maintenance of chainsaws. Students will be evaluated according to industry standards. Stihl bronze certification is available upon successful completion of the Stihl training portion of the class.  
Prerequisite: None  
Corequisite: None  
PWST 1404 Generators  | 2  | 1/1/0 | This course covers generator components and test procedures. Students will test generator voltages and learn how to diagnose and repair generators. Students should have a basic understanding of electricity and electrical meter usage.  
Prerequisite: None  
Corequisite: None
### Radiologic Technology

**RADT 1108 Introduction to Radiologic Technology and Patient Care** 3 2/1/0
- Aims to provide the basic concepts of patient care, including consideration of the physical and psychological needs of the patient and family.

**RADT 1114 Radiographic Procedures I** 4 2/2/0
- Designed to provide the student with the knowledge necessary to perform basic radiographic procedures related to the thoracic and abdominal organs (including gastrointestinal studies), upper and lower extremities and pelvic girdle.

**RADT 1124 Radiographic Procedures II** 4 2/2/0
- This course will provide the student with the knowledge necessary to perform radiographic procedures relative to the urinary system, the bony thorax, skull, vertebral column and arthrology.

**RADT 1132 Principles of Radiobiology** 4 3/1/0
- Designed to establish a basic knowledge of atomic structure and terminology and provide an overview of the principles of radiation protection and interaction with living systems.

### Other Courses

**PWST 2302 Advanced Power Equipment** 4 2/2/0
- This course covers overhaul procedures on outdoor power equipment. Students will make adjustments for optimum performance, learn multi-angle valve grinding procedures and the effects of modifications on a four-cycle engine. The course will also cover electrical and engine troubleshooting.

**PWST 2304 Motorcycles I** 3 1/2/0
- Focuses on the techniques and materials used in motorcycle service and repair. Students will learn engine service and repair methods. Students will also learn motorcycle identification and related components.

**PWST 2306 Snowmobile Drives and Suspensions** 3 1/2/0
- This course covers suspension operation and components. Students will learn suspension set-up and adjustment techniques and various suspension designs used by manufacturers. Students will perform service suspension on various manufacturers' snowmobiles.

**PWST 2308 Advanced Snowmobiles** 3 1/2/0
- Students will demonstrate troubleshooting skills. Students will perform electrical tests used in diagnosing electrical failures on snowmobiles. Students will learn and demonstrate a systematic approach to troubleshooting snowmobiles.

**PWST 2310 Motorcycles II** 4 2/2/0
- This course covers electrical and suspension systems. Students will learn where motorcycle electrical components are located and their specific testing procedures. Students also learn the different types of suspension systems and repair procedures. Students will learn how to set up a motorcycle suspension for optimum performance.

**PWST 2312 Advanced Motorcycle Systems** 3 1/2/0
- This course is designed to test troubleshooting skills and knowledge. Students will be presented with motorcycle problems and, using a systematic approach, students will identify and repair the unit. The course is designed to simulate the role of a technician in a dealership. Students will be expected to write a work order, estimate repairs, make the repair and finalize the work order.

**RADT 1108 Introduction to Radiologic Technology and Patient Care** 3 2/1/0
- Provides a fundamental background in ethics. The historical content and philosophical basis of ethics as well as the elements of ethical behavior will be discussed. The student will examine a variety of ethical issues and dilemmas found in clinical practice. An introduction to legal terminology, concepts and principles will also be presented. Topics will include misconduct, malpractice, legal and professional standards and the ASRT scope of practice. The importance of proper documentation and informed consent is emphasized.

**RADT 1114 Radiographic Procedures I** 4 2/2/0
- Designed to establish a knowledge base in factors that govern and influence the production and recording of radiographic images as well as provide a basis for analyzing those images. Film and electronic imaging with related accessories will be emphasized. Included is the importance of minimum imaging standards, diagnostic problems, quality control techniques for image evaluation and the factors that can affect image quality. Class demonstrations/labs are used to demonstrate application. Actual images will be included for analysis.

**RADT 1144 Radiographic Procedures III** 3 2/1/0
- This course will provide the student with the knowledge necessary to perform radiographic procedures relative to traumatic injury, surgical and portable radiography. In addition the student will be introduced to highly specialized studies of the central nervous system, cardiovascular system and cross-sectional imaging. Special imaging equipment, physical settings and techniques used in these highly specialized studies will also be included.

**RADT 1158 Radiographic Clinical III** 6 0/0/6
- This clinical course emphasizes the basic radiographic procedures and positioning related to the digestive system, urinary system, the bony thorax and the vertebral column. The student also will continue to acquire and build skills in performing radiographic procedures and positioning related to the thoracic and abdominal cavities and the upper and lower extremities including the shoulder girdle and the pelvis.

### Additional Courses

**PWST 2302 Advanced Power Equipment** 4 2/2/0
- This course covers overhaul procedures on outdoor power equipment. Students will make adjustments for optimum performance, learn multi-angle valve grinding procedures and the effects of modifications on a four-cycle engine. The course will also cover electrical and engine troubleshooting.

**PWST 2304 Motorcycles I** 3 1/2/0
- Focuses on the techniques and materials used in motorcycle service and repair. Students will learn engine service and repair methods. Students will also learn motorcycle identification and related components.

**PWST 2306 Snowmobile Drives and Suspensions** 3 1/2/0
- This course covers suspension operation and components. Students will learn suspension set-up and adjustment techniques and various suspension designs used by manufacturers. Students will perform service suspension on various manufacturers' snowmobiles.

**PWST 2308 Advanced Snowmobiles** 3 1/2/0
- Students will demonstrate troubleshooting skills. Students will perform electrical tests used in diagnosing electrical failures on snowmobiles. Students will learn and demonstrate a systematic approach to troubleshooting snowmobiles.

**PWST 2310 Motorcycles II** 4 2/2/0
- This course covers electrical and suspension systems. Students will learn where motorcycle electrical components are located and their specific testing procedures. Students also learn the different types of suspension systems and repair procedures. Students will learn how to set up a motorcycle suspension for optimum performance.

**PWST 2312 Advanced Motorcycle Systems** 3 1/2/0
- This course is designed to test troubleshooting skills and knowledge. Students will be presented with motorcycle problems and, using a systematic approach, students will identify and repair the unit. The course is designed to simulate the role of a technician in a dealership. Students will be expected to write a work order, estimate repairs, make the repair and finalize the work order.

**RADT 1108 Introduction to Radiologic Technology and Patient Care** 3 2/1/0
- Provides a fundamental background in ethics. The historical content and philosophical basis of ethics as well as the elements of ethical behavior will be discussed. The student will examine a variety of ethical issues and dilemmas found in clinical practice. An introduction to legal terminology, concepts and principles will also be presented. Topics will include misconduct, malpractice, legal and professional standards and the ASRT scope of practice. The importance of proper documentation and informed consent is emphasized.

**RADT 1114 Radiographic Procedures I** 4 2/2/0
- Designed to establish a knowledge base in factors that govern and influence the production and recording of radiographic images as well as provide a basis for analyzing those images. Film and electronic imaging with related accessories will be emphasized. Included is the importance of minimum imaging standards, diagnostic problems, quality control techniques for image evaluation and the factors that can affect image quality. Class demonstrations/labs are used to demonstrate application. Actual images will be included for analysis.

**RADT 1144 Radiographic Procedures III** 3 2/1/0
- This course will provide the student with the knowledge necessary to perform radiographic procedures relative to traumatic injury, surgical and portable radiography. In addition the student will be introduced to highly specialized studies of the central nervous system, cardiovascular system and cross-sectional imaging. Special imaging equipment, physical settings and techniques used in these highly specialized studies will also be included.

**RADT 1158 Radiographic Clinical III** 6 0/0/6
- This clinical course emphasizes the basic radiographic procedures and positioning related to the digestive system, urinary system, the bony thorax and the vertebral column. The student also will continue to acquire and build skills in performing radiographic procedures and positioning related to the thoracic and abdominal cavities and the upper and lower extremities including the shoulder girdle and the pelvis. The student is also introduced to skull radiography, surgical procedures, radiographic exposure factors and off-peak (e.g. evening and weekend) clinical hours.

**RADT 1168 Radiographic Clinical III** 6 0/0/6
- This clinical course emphasizes the basic radiographic procedures and positioning related to the skull, facial bones, parasanal sinuses and detailed areas of the skull. The clinical experience provides an opportunity to work with increased independence.

**RADT 2222 Imaging Equipment** 3 2/1/0
- Designed to establish a knowledge base in radiographic, fluoroscopic, mobile and tomographic equipment (including computed tomography) requirements and design including circuitry of the x-ray machine. The content will also provide a basic knowledge of quality control. Computer applications in the radiologic sciences related to image capture, display, storage and distribution are presented as well.

**RADT 2244 Legal and Ethical Issues in Radiologic Technology** 3 3/0/0
- Content is designed to provide a fundamental background in ethics. The historical and philosophical basis of ethics as well as the elements of ethical behavior will be discussed. The student will examine a variety of ethical issues and dilemmas found in clinical practice. An introduction to legal terminology, concepts and principles will also be presented. Topics will include misconduct, malpractice, legal and professional standards and the ASRT scope of practice. The importance of proper documentation and informed consent is emphasized.

**RADT 2248 Radiographic Clinical IV** 6 0/0/6
- This clinical course provides the student with the opportunity to function more independently in all areas of basic radiography and to develop clinical skills in regular radiographic areas and procedures, with continuing experience in trauma and surgical procedures. The student will be exposed to special procedures and will begin rotations through the specialized areas of nuclear medicine, radiation therapy, computed tomography, ultrasound and magnetic resonance imaging.

### Course Catalog 2013-2014

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Minnesota State Community and Technical College

Course Catalog 2013-2014
### Refrigeration and Air Conditioning

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
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<td>RADT 2258</td>
<td>Radiographic Clinical V</td>
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<tr>
<td>REF 1102</td>
<td>Refrigeration Principles</td>
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<td>REF 1104</td>
<td>Refrigeration Lab</td>
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<td>REF 1106</td>
<td>Electrical Fundamentals</td>
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<td>Electrical Lab</td>
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<tr>
<td>REF 1110</td>
<td>Refrig. A/C and Htg Prin</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>REF 1112</td>
<td>Refrig. A/C and Htg Lab</td>
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<td>0/3/0</td>
</tr>
<tr>
<td>REF 1113</td>
<td>Refrigeration Electrical Circuits Fundamentals</td>
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<td>3/0/0</td>
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<td>REF 1130</td>
<td>Refrigeration Management</td>
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<td>REFR 1140</td>
<td>Gas Heating</td>
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<td>REFR 2202</td>
<td>Commercial Refrigeration and Air Conditioning Principles</td>
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<td>REFR 2205</td>
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<td>REFR 2206</td>
<td>Commercial Electrical Principles</td>
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<td>REFR 2212</td>
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<td>REFR 2213</td>
<td>Advanced Electrical Theory</td>
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<td>REFR 2215</td>
<td>Advanced Electrical Applications</td>
<td>3</td>
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<tr>
<td>REFR 2216</td>
<td>Refrigeration Internship</td>
<td>3</td>
<td>0/0/3</td>
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<tr>
<td>REFR 2220</td>
<td>HVAC Troubleshooting</td>
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<tr>
<td>REFR 2242</td>
<td>Heat Load Estimating</td>
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### Sociology

<table>
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<tbody>
<tr>
<td>SOC 1111</td>
<td>Intro to Sociology</td>
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<tr>
<td>SOC 1113</td>
<td>Social Problems</td>
<td>3</td>
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<tr>
<td>SOC 1144</td>
<td>Sociology Service Learning</td>
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<tr>
<td>SOC 2210</td>
<td>Social Deviance</td>
<td>3</td>
<td>3/0/0</td>
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<tr>
<td>SOC 2211</td>
<td>Sociology of the Family</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>SOC 2215</td>
<td>Criminology</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>SOC 2216</td>
<td>Minority Group Relations</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td>SOC 2217</td>
<td>Rural Sociology</td>
<td>3</td>
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### Spanish

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<tbody>
<tr>
<td>SPAN 1111</td>
<td>Beginning Spanish</td>
<td>4</td>
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<tr>
<td>SPAN 2211</td>
<td>Intermediate Spanish</td>
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<tr>
<td>SPAN 2212</td>
<td>Intermediate Spanish II</td>
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### Management Skills

<table>
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<th>CourseTitle</th>
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<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>SUPL 1110</td>
<td>Budget and Financial Management</td>
<td>3</td>
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</tr>
<tr>
<td>SUPL 1118</td>
<td>Lead and Facilitate Teams</td>
<td>3</td>
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### Social Work

<table>
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<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>THPY 1135</td>
<td>Deep Tissue Massage</td>
<td>2</td>
<td>1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Prerequisite:</td>
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<td></td>
<td>None</td>
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</tbody>
</table>

This course introduces students to social welfare and social work, including fields of practice, institutions, populations served, special issues and an introduction to some social work methods and theories. A general historical and comprehensive overview of the profession is provided, including its values, ethics, methods, multiple settings and a beginning use of system theory.

### Massage Therapy

<table>
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<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>THPY 1130</td>
<td>Advanced Massage</td>
<td>2</td>
<td>1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td></td>
<td></td>
<td>None</td>
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<tr>
<td>Prerequisite:</td>
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<td>None</td>
</tr>
</tbody>
</table>

This course introduces students to a variety of specialized modalities of massage. Specialization in the massage industry increases the marketability of therapists and is strongly recommended. Students will be familiar with the basic principles of each modality presented. In addition to lectures presented by the instructor, students will be responsible for researching modalities of particular interest to them.

<table>
<thead>
<tr>
<th>Course #</th>
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<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>THPY 1135</td>
<td>Deep Tissue Massage</td>
<td>2</td>
<td>1/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td></td>
<td></td>
<td>None</td>
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<tr>
<td>Prerequisite:</td>
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<td>None</td>
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</tbody>
</table>

This course teaches students to identify the location and movements of skeletal muscles. Students will identify bones and bony landmarks. They will learn muscle origin and insertion using specific boney landmarks as points of anatomical reference. They will learn directional terms and terms of movement. Students will learn to identify and describe the movement of each muscle.

### Theater

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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<tbody>
<tr>
<td>THTR 1125</td>
<td>Theatre Technical Practicum</td>
<td>2</td>
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</tr>
<tr>
<td>Corequisite:</td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td></td>
<td>None</td>
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</tbody>
</table>

This course is designed for students who participate as a construction or run crew member on a main stage or approved theatrical production. May be repeated twice.

### Transportation Technology

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>TRNS 1100</td>
<td>Introduction to Shop Technology</td>
<td>4</td>
<td>3/0</td>
</tr>
<tr>
<td>Corequisite:</td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td></td>
<td>None</td>
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</tbody>
</table>

This course is the study of occupational safety, shop orientation procedures and power and hand tool usage. The use of shop equipment applications, fasteners, measuring instruments and service literature, along with appropriate service department etiquette, will be addressed. Four- and two-stroke engine theory along with their proper lubricants will be covered. All these will be taught and expressed with the PowerSports and Marine industry shop experience as a basis for study.
<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRNS 1102</td>
<td>Introduction to Transportation</td>
<td>2</td>
<td>1/0</td>
</tr>
<tr>
<td></td>
<td>This course is the study of occupational safety, shop operation procedures, power and hand tool use, shop equipment applications, fasteners, measuring instruments, service literature, general service knowledge, acceptable work habits, industry standards and expectations.</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRNS 1104</td>
<td>Transportation Electronics</td>
<td>3</td>
<td>2/0</td>
</tr>
<tr>
<td></td>
<td>This course prepares the student for the electronics-related courses that follow. The theory and operation of electricity and test instruments will be studied.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRNS 1109</td>
<td>Fuel Systems I</td>
<td>4</td>
<td>2/2/0</td>
</tr>
<tr>
<td></td>
<td>This course covers the basics in many types of fuel systems used on current two- and four-cycle off-road/marine products. Training will be on most realms of models from high-performance to standard output recreational equipment. The incorporation of fuel distribution systems is studied, along with fuel make-up and its properties. Included in this course will be practices of pre-delivery, inspection and troubleshooting, along with seasonal service requirements.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<td></td>
</tr>
<tr>
<td>TRNS 1111</td>
<td>Electrical Systems I</td>
<td>4</td>
<td>2/2/0</td>
</tr>
<tr>
<td></td>
<td>This course introduces electrical systems used on powersports/marine equipment, focusing primarily on ignition and electrical components. Students will learn the theories of ignition, induction, AC and DC circuits, and electronic and computer controls. Emphasis will be on proper use of test equipment and system operation.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<tr>
<td>TRNS 1112</td>
<td>Heating Ventilation A/C</td>
<td>3</td>
<td>1/2/0</td>
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<tr>
<td></td>
<td>This course teaches the principles of air conditioning and its relationship to the heating system. The various types and the diagnosis of malfunctions, testing and repair are studied in the classroom. Practical experience is performed on live systems: recovering, evacuating, component replacement, charging and performance testing of the systems.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<td></td>
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<tr>
<td>TRNS 1118</td>
<td>Welding I</td>
<td>2</td>
<td>0/2/0</td>
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<tr>
<td></td>
<td>This class introduces students to welding safety, welding and cutting fundamentals. The course provides the theory of welding and the training to develop the necessary skills to cut and weld metal.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<tr>
<td>TRNS 1120</td>
<td>Welding II</td>
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<td></td>
<td>This course teaches skills needed to weld metals in a variety of positions using various methods of welding. The class will also introduce aluminum welding.</td>
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<tr>
<td></td>
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<td>TRNS 1125</td>
<td>Starting and Charging Theory</td>
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<tr>
<td></td>
<td>This course covers the service and repair of starting and charging systems for off-road products, both two- and four-stroke.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<tr>
<td>TRNS 1126</td>
<td>Starting and Charging Lab</td>
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<tr>
<td></td>
<td>This course covers the hands-on testing of starting and charging systems and their components. Included in this course will be practices of pre-delivery, inspection and troubleshooting, along with seasonal service requirements.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<tr>
<td>TRNS 1193</td>
<td>Fuel Systems I Lab</td>
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<tr>
<td></td>
<td>This course covers the application of information learned in the Fuel Systems I Theory course. Students will apply the theories of testing the operability of the fuel systems of both two- and four-stroke engines. Included in this course will be practices of pre-delivery, inspection and troubleshooting, along with seasonal service requirements.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td>Corequisite: None</td>
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<td>TRNS 1194</td>
<td>Fuel Systems I Theory</td>
<td>2</td>
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<td>This course covers the basics in many types of fuel systems used on current two- and four-cycle off-road/marine products. Training will be on most realms of models from high performance to standard output recreational equipment. The incorporation of fuel distribution systems is studied, along with fuel make-up and its properties.</td>
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<td></td>
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<td></td>
<td>Corequisite: None</td>
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<tr>
<td>TRNS 1195</td>
<td>Fuel Systems I Marine Service</td>
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<td></td>
<td>This course covers the application of information learned in the Fuel Systems I Theory course. Students will apply the theories of testing the operability of the fuel systems of both two- and four-stroke engines. Included in this course will be practices of pre-delivery, inspection and troubleshooting, along with seasonal service requirements. This course is intended for the Marine student and will be focusing on marine equipment.</td>
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<tr>
<td></td>
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<td></td>
<td>Corequisite: None</td>
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<tr>
<td>TRNS 1197</td>
<td>Electrical Systems I Lab</td>
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<tr>
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<td>This course applies the information learned in the Electrical Systems I Theory course. Students will test charging systems, ignition systems and starting systems for their proper functionality. Students will also be exposed to proper troubleshooting techniques for these systems.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>Corequisite: TRNS1198</td>
<td></td>
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</tr>
<tr>
<td>TRNS 1198</td>
<td>Electrical Systems I Theory</td>
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<td>2/0/0</td>
</tr>
<tr>
<td></td>
<td>This course introduces electrical systems used on powersports/marine equipment, focusing primarily on ignition and electrical components. Students will learn the theories of ignition, induction, AC and DC circuit, and electronic and computer controls. Emphasis will be on proper use of test equipment and system operation.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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<td></td>
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<tr>
<td>TRNS 1199</td>
<td>Electrical Systems I Marine Service</td>
<td>2</td>
<td>0/2/0</td>
</tr>
<tr>
<td></td>
<td>This course applies the information learned in the Electrical Systems I Theory course. Students will test charging systems, ignition systems and starting systems for their proper operation. Students will also be exposed to proper troubleshooting techniques of these systems. This course is intended for the Marine program student and applies specifically to marine products.</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td>Corequisite: TRNS1198</td>
<td></td>
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<tr>
<td>TRNS 2108</td>
<td>Power Hydraulics</td>
<td>2</td>
<td>1/1/0</td>
</tr>
<tr>
<td></td>
<td>This course covers the theory and service of hydraulic systems used on a wide range of off-road applications. Power steering and power trim and tilt systems service will be performed. System troubleshooting as well as component service will also be included in this course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Course Catalog 2013-2014**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
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</thead>
<tbody>
<tr>
<td>VGAM 1111</td>
<td>Digital Modeling Creation</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>This course is a comprehensive introduction to three-dimensional (3D) modeling as it is used in computer games. Students will create two-dimensional (2D) and 3D graphics using Adobe Photoshop and Autodesk Maya. The course incorporates knowledge of history, themes, and cultural elements for digital sculpting as well as non-uniform rational B-splines (NURBS) and polygon modeling tool sets.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: Assessment into college algebra and college-level English composition for completion of prerequisite courses for college algebra and college-level English</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VGAM 1122</td>
<td>Two Dimensional Animation</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>This course will help students develop the technique and craft involved in hand-drawn two-dimensional (2D) animation and the fundamental principles of traditional animation as well as the fundamental principles of computer animation. Students will learn concepts such as potential versus kinetic energy, basic storytelling, virtual camera animation and vehicle animation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: VGAM1111</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VGAM 1133</td>
<td>Digital Texturing and Lighting</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>This course is a comprehensive introduction of digital textures that simulate details to a digital model that would be impossible to model. This course provides detailed attention on standard three-dimensional (3D) projections and UV (axes) mapping on a 3D software package (Autodesk Maya). Professional techniques for texture painting in Photoshop will be addressed along with techniques for overcoming common texture mapping problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: VGAM1111</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Corequisite: None</td>
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</tbody>
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**Wine Studies**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>CR</th>
<th>Lec/Lab/OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINE 1100</td>
<td>Introduction to Wine</td>
<td>3</td>
<td>3/0/0</td>
</tr>
<tr>
<td></td>
<td>This is a basic foundation course in the area of Wine Studies. The course will help students understand the process of wine making and develop the senses necessary to evaluate wines. Students will study the classical wine varietals of the world and learn wine service techniques according to the professional standards of sommelier. Note: All persons must be at least 21 years of age and have a photo ID as proof of age before enrolling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: All persons enrolling must be at least 21 years of age and present a photo ID</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisite: None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WINE 1201 Food and Wine Pairing  3  3/0/0
This course offers students the experience of observing and tasting how different wines affect food and how food affects different wines. The class takes into consideration food preparation methods, textures, acidic levels, taste and spice profiles, as well as characteristics of wine and wine servings including light, medium and heavy body; sweet vs. dry; sparkling or non-sparkling; chilled vs. non-chilled; low- or high-alcohol; and acid levels. Students will compare the historical rules of pairing to the evolving rules that reflect the standards of current societal trends. Note: All persons must be at least 21 years of age and have a photo ID as proof of age before enrolling.
Prerequisite: WINE1100 AND Note: All persons enrolling must be of at least 21 years of age and present a photo ID
Corequisite: None

WINE 1500 Old World Wines and New World Wines  3  3/0/0
This course examines wines from different countries including France, Italy, Spain, Portugal, the United States, Mexico, Chile, New Zealand and South Africa. Additional topics may include identifying the main regions, wine laws, wine varieties, and geography/climate for growing grapes and producing wine. Students will learn about the terroir elements and human-controlled elements of wine. Students will also be exposed to the cultural aspects of terroir such as celebrations and rituals based on geographical regions. Note: All persons must be at least 21 years of age and have a photo ID as proof of age before enrolling.
Prerequisite: WINE1100 AND Note: All persons enrolling must be of at least 21 years of age and present a photo ID
Corequisite: None

Women’s Studies

WMST 1130 Introduction to Women’s Studies  3  3/0/0
Meets MnTC Goal Areas 5 and 7. This course is an interdisciplinary study designed to enhance the student’s understanding of women’s cultural, social, historical, political and economic contributions and humanitarian achievements based on historical and diverse societal settings.
Prerequisite: None
Corequisite: None

WMST 1136 Global Perspectives of Women  3  3/0/0
Meets MnTC Goal Areas 6 and 8. This course examines the present-day realities of women’s lives around the world.
Prerequisite: None
Corequisite: ENGL1101

Zoology

ZOO 1122 Hematology and Coagulation  4  3/1/0
This is an introductory course for Medical Laboratory Technician students covering the production, maturation, function and abnormalities of blood cells and coagulation (stoppage of bleeding) to maintain body homeostasis. The course covers routine hematology procedures to identify normal, abnormal and immature cells. The course also covers coagulation procedures to detect deficiencies and abnormal conditions of blood clotting.
Prerequisite: None
Corequisite: None

ZOO 1123 Immunohematology  3  2/1/0
This course is an introduction to the clinical area of blood banking. The course covers compatibility theory, principles of antigens on red blood cells and antibodies in serum of blood. The course also includes blood typing and other basic immunohematological procedures.
Prerequisite: BIOL1125
Corequisite: None

ZOO 1126 Urinalysis and Body Fluids  2  1/1/0
This is an introductory course for Medical Laboratory Technician students. The course is an overview of the urinary system including abnormalities and diseases. The course also covers collection, handling, storage of, analysis of physical and chemical properties and identification of morphological elements of urine. The course also includes study of other body fluids including cerebral spinal fluid, amniotic fluid, serous fluid, synovial fluid, sputum, semen and feces.
Prerequisite: None
Corequisite: None
STAKEHOLDERS

Board of Trustees 166

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<th>Congressional District</th>
<th>Legislative District</th>
<th>Term Dates</th>
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<tr>
<td>Anna Anaya</td>
<td>2</td>
<td>57B</td>
<td>August 6, 2012-June 30, 2018</td>
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<tr>
<td>Brett Anderson</td>
<td>1</td>
<td>37B</td>
<td>July 1, 2011-June 30, 2013</td>
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<tr>
<td>Margaret Anderson Kelliher</td>
<td>At Large</td>
<td>60A</td>
<td>August 6, 2012-June 30, 2018</td>
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<tr>
<td>Duane Benson</td>
<td>1</td>
<td>31B</td>
<td>July 1, 2010-June 30, 2016</td>
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<tr>
<td>Alexander Cirillo, Jr.</td>
<td>6</td>
<td>56A</td>
<td>August 6, 2012-June 30, 2018</td>
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<tr>
<td>Cheryl Dickson</td>
<td>4</td>
<td>65B</td>
<td>August 6, 2012-June 30, 2014</td>
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<tr>
<td>Dawn Erlandson</td>
<td>At Large</td>
<td>60A</td>
<td>August 6, 2012-June 30, 2018</td>
</tr>
<tr>
<td>Clarence Hightower, Chair</td>
<td>3</td>
<td>45A</td>
<td>July 2, 2008-June 30, 2014</td>
</tr>
<tr>
<td>Philip Krinkie</td>
<td>At Large</td>
<td>4</td>
<td>July 1, 2010-June 30, 2016</td>
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<tr>
<td>Alfredo Oliveira</td>
<td>6</td>
<td>19A</td>
<td>August 6, 2012-June 30, 2014</td>
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<tr>
<td>David Paskach</td>
<td>7</td>
<td>21A</td>
<td>July 2, 2008-June 30, 2014</td>
</tr>
<tr>
<td>Maria Peluso</td>
<td>8</td>
<td>3A</td>
<td>August 6, 2012-June 30, 2014</td>
</tr>
<tr>
<td>Thomas Renier, Vice Chair</td>
<td>8</td>
<td>7A</td>
<td>July 1, 2010-June 30, 2016</td>
</tr>
<tr>
<td>Louise Sundin</td>
<td>5</td>
<td>60B</td>
<td>July 2, 2008-June 30, 2014</td>
</tr>
<tr>
<td>Michale Vekich, Treasurer</td>
<td>At Large</td>
<td>44A</td>
<td>July 1, 2010-June 30, 2016</td>
</tr>
</tbody>
</table>
Michael Burgraff
A Center for the Arts

David Collins
Hubbard County
Regional Economic Development Commission

Don Drummond
Minnesota State Community and Technical College - Moorhead Campus

Jean Evans
Essentia Health

Kathy Grell
Hubbard County

Brian Ingulsrud
American Crystal Sugar Company

Jerry Ness
Independent School District 544

Mayor Hal Leland
City of Fergus Falls

Laurie Lewandowski
SJE-Rhombus

Robert Louiseau
City of Detroit Lakes

Sue Myxter
Fargo Public Schools

Rep. Bud Nornes
State Representative

Ann Pate
Wadena-Deer Creek School Board

Michael Redlinger
City of Moorhead

Larry Schulz
Lake Region Healthcare

Harold Stanislaski
Fergus Falls Economic Improvement Commission

Nancy Straw
West Central Initiative

Ryan Tangen
Becker County

Daniel Wenner
Rural Minnesota CEP, Inc.

Wilbur Wright
Eide Bailly (retired)
Foundations Boards of Directors

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David Donehower Funeral Home

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Ulteig

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Jodi Ahles
Dougherty & Company LLC

Keith Gilbertson

Stacey Gravelle
Detroit Lakes Newspapers/DL Online

Jill Mack
Arvig Communication Systems

Ashley McNally
Ecumen/Emmanuel Community

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Tom Whelihan, Senior Dean of Academic Affairs
M State - Detroit Lakes Campus

Becky Niemi, Director of Advancement
M State - Detroit Lakes Campus

Fergus Falls

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Pemberton, Sorlie, Rufer, Kershner, P.L.L.P.

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Otter Tail Power Company

Gail E. Childs, Vice President
Edward Jones

Scott Colbeck
Independent School District 544

Ryan Hanson
Keller Williams Realty/Ryan Hanson Homes

Kevin King
Service Food Market

David F. Lundeen, Secretary
David F. Lundeen Law Office

Eunice MacFarlane
Emeriti Faculty M State - Fergus Falls Campus

Milt Paulson
Paulson Land Co.

Sara Piekarski
Discover Lodging

Ryan Retzlaff
Otter Tail Power Company

John Sethre
Sethre Farms

Brandi Sillerud
Lake Region Healthcare

Edward A. Strand, Treasurer
Retired, Lake Region Healthcare

Greg Wagner
West Central Initiative

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Fergus Area College Foundation

Jacki Maethner Jorud, Assistant
Fergus Area College Foundation

Gary Henrickson, Senior Dean
M State - Fergus Falls Campus

Robert Anderson, Financial
Fergus Area College Foundation
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Retired Faculty

Kay Gnoinsky
Retired Faculty

Mavis Goodroad
Past President

Faye Gronvold
Corner Stone Banks

Ryan Hoss
Bakers Nursery Gardens

Tom Julsrud, President
Student Government Representative

Pat Nelson
Community

Shannon Norton
Disabled American Veterans, Sensible Security

Larry Olson
Retired Faculty

Jesse Rostad
State Bank and Trust

Marlis Ziegler, Secretary

Ex-Officio:

Chuck Chadwick, Director
Moorhead Community and Technical College Foundation

Evonne Barnum, College Liaison
M State - Moorhead Campus

Dave Bellefeuille, Veterans Service Officer
M State - Moorhead Campus

Jean Kaspari, College Liaison
M State - Moorhead Campus

Wadena

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Rural Minnesota CEP, Inc.

Tyler Church, Vice Chair
Wadena - Deer Creek High School Principal

Dan Carlisle, Secretary
Pemberton, Sorlie, Rufer, Kershner, P.L.L.P.

Dave Fjeldheim
Sebeka School Superintendent/Principal

Zachary Kreklau
Ameriprise Financial

Dan Skogen
Lobbyist

Doug Stromberg
Stromberg Technologies

Ex-Officio:

Becky Niemi, Director of Advancement
M State - Detroit Lakes Campus
Kennedy, Peggy D. .................................................. President
BS, University of Wisconsin - Whitewater
MA, University of Minnesota
EdD, University of Minnesota

Abbott, Jill M. .................. Dean of Academic Affairs/Senior eCampus Dean
BS, Southwest State University
MS, South Dakota State University
EdD, University of South Dakota

Anderson, Shawn A. .................. Dean of Student Success/Senior Campus Dean
BS, Minnesota State University Moorhead
MS, Central Connecticut State University

Brimhall, Carrie Lee .................. Associate Vice President of Academic and Student Affairs
AA, Fergus Falls Community College
BA, Concordia College
MS, Capella University

Brock, Kathleen M. ............ Vice President/Chief Academic Officer
BA, University of Northern Iowa
MA, University of South Dakota
PhD, Iowa State University

Henrickson, Gary P. .................. Dean of Academic Affairs/Senior Campus Dean
BA, University of Minnesota
MA, University of Minnesota
MA, George Mason University
PhD, University of Minnesota

Hertel, Gary J. ...................... Dean of Academic Affairs
BS, University of Nebraska - Lincoln
MED, University of Nebraska - Lincoln
EdD, University of Nebraska - Lincoln

Jacobson, Jennifer Lynn .................................. Dean of Nursing
BSN, Minot State University
MSN, University of South Alabama

Johnson, Dacia A .................. Chief Human Resources Officer
BS, Minnesota State University Moorhead
MBA, Southwest Minnesota State University

Johnson, Mary Devine .................. Director of Communications and Marketing
BA, University of North Dakota
MA, University of North Dakota

Johnson, Monty V .................. Dean of Academic Affairs/Senior Campus Dean
BE, Wayne State College
MED, Iowa State University

Knudson, Daniel L. ............ Interim Chief Information Officer
BS, Minnesota State University Moorhead

Laymon, Denise Ann .................. Chief Development and Alumni Officer
BS, University of Mary
MS, University of Mary

Nordick, Patrick A .................. Chief Finance Officer
BS, Bemidji State University

Schaffhauser, Anthony ............ Dean of Student Access
BA, Tulane University
MS, University of Rochester

Shortle, Dllona .................. Dean of Academic Affairs
BS, University of Wisconsin, Oshkosh
MBA, Keller Graduate School of Management

Tucker, G.L. .................. Dean of Custom Training Services/Business & Entrepreneurial
BS, St. Cloud State University

Whelihan, Thomas M .................. Dean of Academic Affairs/Senior Campus Dean
BA, University of Minnesota, Duluth
MSED, University of Wisconsin-Superior

Wielinski, Peter A .................. Vice President/Chief Student Services Officer
BA, University of Minnesota Twin Cities
MSED, University of Wisconsin-Superior
PhD, Capella University
Ahlschlager, Patricia M ........................................... Nursing
BS, Metropolitan State College of Denver
MS, Minnesota State University Moorhead

Altenburg, Mark O .................................................. English
BA, North Dakota State University
MA, Hamline University

Amundson, Sonja C .................................................. Nursing
AAS, Miles Community College

Anderson, David L ................................................... Law Enforcement
BA, Minnesota State University Moorhead
MS, Minnesota State University Moorhead

Anderson, Heidi Rochelle ........................................... English
AA, Minnesota State Community and Technical College
MA, St. Cloud State University
BA, St. Cloud State University

Anderson, JaDean Jake ................................................ Biology
BA, Minnesota State University Moorhead

Anderson, Marc David ................................................ Biology
BS, North Dakota State University
MS, North Dakota State University
PHD, Iowa State University

Anderson, Sue Christine .............................................. Art
BS, Minnesota State University Moorhead
MS, Minnesota State University Moorhead

Arneson, Brenda ....................................................... Nursing
AAS, Clackamas Community College
BSN, Minnesota State University Moorhead

Ashworth, Teresa K .................................................... Music
BA, University of South Dakota
MED, North Dakota State University

Asmus, Jarrod L ......................................................... Baseball Coach
BS, North Dakota State University

Bagent, Jack Kevin ..................................................... Science
BA, University of Minnesota
DR, University of Minnesota

Bagent, Karoline Lisa ................................................ Nursing
MN, University of Minnesota

Bagne, Angela Grace Beach .......................................... Psychology
MS, North Dakota State University

Bainer, James Stephen .............................................. Diesel
DIPL, Staples Area Vocational Technical Institute

Baker, Adam Joseph, CPA ............................................ Accounting
AA, Fergus Falls Community College
BS, Minnesota State University Moorhead

Balluff, Mark Allen ..................................................... Math
BS, Minnesota State University Moorhead
MAT, Minot State University

Banerji, Nandini ........................................................ Science
BS, University of Delhi
MS, Indian Institute of Technology, Kanpur
MA, Indian Institute of Technology, Delhi
PHD, University of Vigo

Barfknecht, Joseph P ................................................ Football Coach
BS, Minnesota State University Moorhead

Baumann, William Anton ............................................ English
AA, Ridgewater College
BS, Minnesota State University, Mankato
MS, Iowa State University

Beacom, Teresa Ann .................................................. English
BA, College of Saint Benedict
MA, University of Missouri-Kansas City

Beaton, Allen M, CPA ................................................ Accounting
BS, San Diego State University

Benchama, Noureddine .............................................. Math
BS, Wichita State University
MS, Wichita State University

Bergquist, James D ..................................................... Physics
BS, North Dakota State University
PHD, VA Polytechnic Institute & State University

Bernstetter, Roberta A ............................................... Cosmetology
AA, Fergus Falls Community College
DIPL, Northwest Technical College - Wadena
BS, Bemidji State University

Beyer, Jennifer Ann .................................................... English
BA, Bemidji State University
MA, Bemidji State University

Bischof, Carol Muriel ................................................. Biology
BS, MS State University - College of Agriculture
MS, Miami University - Oxford, OH
Faculty Credentials

Bjerke, M. Shawn ............................................................... Biology
BS, North Dakota State University
MS, North Dakota State University

Blasczyk, Linda Kay .......................................................... Nursing
BSN, University of Mary
MSN, Concordia College

Bocnuk, Cheryl L .............................................................. Web Development
AA, Rainy River Community College
BA, St. Cloud State University
BA, St. Cloud State University
MMA, Metropolitan State University

Boe, Thomas L ................................................................. Dental
DDS, University of Minnesota
MBA, St. Cloud State University

Booth, Michael ............................................................... Math
BS, North Dakota State University
MS, North Dakota State University

Borcherding, Matthew John ............................................. Biology
MAT, Minnesota State University, Mankato
BS, Minnesota State University, Mankato

Boutwell, Renee .............................................................. Art
MS, University of South Dakota
BA, Florida State University

Brady, Colleen A ............................................................. Radiologic Technology
RT (R)(M), ARRT Registered Technologist
certified in Radiography and Mammography
BS, University of Minnesota Crookston
MS, Mesonstat University Moorhead

Brannick, Kristi Georjean ................................................ Biology
CERT, Anoka-Hennepin Technical College
AA, Normandale Community College
BS, St. Cloud State University
MS, St. Cloud State University

Bremer, John O ............................................................... English
AA, Rochester Community College
BA, St. Cloud State University
MA, North Dakota State University

Brewster, Kim Earl ......................................................... Culinary Arts, Wine Studies
DIPL, Northwest Technical College-Moorhead
BS, University of Mary

Brickner, Joan Marie ...................................................... English
ALA, Wayne State University
BA, Wayne State University
MA, Eastern Michigan University

Bry, Jeff D ................................................................. Sociology
BS, University of North Dakota
MA, University of North Dakota

Bucholz, Glen A ......................................................... Marine Engine Technology
DIPL, Detroit Lakes Technical College
DIPL, Detroit Lakes Technical College
BS, Bemidji State University

Burns, Arvid A ........................................................... Graphic Design

Bushaw, Valerie Mae .................................................. Dental Hygiene
AS, North Dakota State College of Science
AA, Minnesota State University, Mankato
BS, Northern Arizona University

Carley, Dane A ........................................................ Fire Services
AAS, Lake Superior College
BS, University of Cincinnati
MS, St. Cloud State University

Carlson, Daniel Q ......................................................... Music
BM, Concordia College
BM, Concordia College
MM, North Dakota State University

Carney, Paul .............................................................. English
BA, Southern Methodist University
MA, The University of Texas at El Paso
MA, The University of Texas at El Paso

Carter, Daniel J ............................................................. Computer and Network Technology
BS, Bemidji State University

Caswell, Ramona L. Johnson ........................................ Chemistry
BS, University of Wisconsin
MS, University of Minnesota

Charest, Lori Ann .......................................................... Ceramics
BFA, University of North Dakota

Christensen, Bryan Alan .............................................. Marketing
AAS, Minnesota State Community and Technical College
DIPL, Alexandria Technical and Community College
BS, University of Minnesota, Crookston
MBA, University of Mary
AAS, Minnesota State Community and Technical College
Faculty Credentials

**Christianson, Milan** .......................................................... Psychology  
MS, North Dakota State University

**Coley, Amy Marie** .................................................. Radiological Technology  
BS, University of Mary

**Condiff, Misty Lynn** .......................................................... Nursing  
BS, Bemidji State University  
AA, Hibbing Community College  
MS, University of North Dakota  
PHD, University of Minnesota

**Cox, John Charles** .......................................................... Art  
AA, Northland Community and Technical College  
BFA, University of Minnesota, Duluth  
MFA, University of South Dakota

**Cox, Rachel Marie** .......................................................... English  
BA, University of Minnesota, Duluth  
MA, University of South Dakota

**Craik, Marlene R** .......................................................... Network Technology Administration, Cisco  
AAS, Northwest Technical College-Moorhead  
AAS, Northwest Technical College-Moorhead  
BS, University of Mary

**Cummings, Pamela K** .......................................................... Paralegal  
BS, Moorhead State University

**Daeuber, Eric** .......................................................... Humanities  
BA, University of Western Ontario, Huron College  
MDIV, Brock University  
MLA, Moorhead State University

**Dahms, Shannon Kaye** .......................................................... Nursing  
BSN, Viterbo College  
MSN, Minnesota State University Moorhead

**Daniels, Jessica Brimhall** .......................................................... Biology  
BA, Concordia College  
MS, University of Minnesota

**DeJong, Travis J** .......................................................... Refrigeration and Air Conditioning  
DIPL, Minnesota State Community and Technical College

**Desjarlais, Sarah Miriam** .......................................................... Dental Hygiene  
BA, Augustana College  
AS, Argosy University

**Dittmann, Scarlet May** .......................................................... Massage Therapy  
CERT, Minnesota State Community and Technical College  
DIPL, Minnesota State Community and Technical College  
CERT, Sister Rosalind Gefre

**Donehower, James W** .......................................................... Paralegal  
BA, Concordia College  
JD, Vanderbilt University

**Doyle, Benjamin M** .......................................................... Industrial Maintenance  
AAS, Western Dakota Vo-Tech Institute

**Drange, Stephanie Annette** .......................................................... English  
BS, Minnesota State University Moorhead  
MED, Saint Marys University of Minnesota

**Drummond, Donald Gerard** .......................................................... Math  
BS, North Dakota State University  
MAT, Minot State university

**Dubbels, Thomas Kenneth** .......................................................... Counselor  
BS, North Dakota State University  
MS, Moorhead State University

**Durand, Heidi Lynn** .......................................................... Sociology  
BA, North Dakota State University  
MS, North Dakota State University

**Durgin, Jay C** .......................................................... History  
MA, University of North Dakota

**Dykhoff, Wayne Donald** .......................................................... Electrical Lineworker  
DIPL, Minnesota State Community and Technical College

**Dyrstad, Heidi L** .......................................................... Communication  
BA, Concordia College  
MA, North Dakota State University  
PHD, University of North Dakota

**Ebsen, Michelle Ann** .......................................................... Business: Management, Marketing and Sales  
BS, University of Mary  
MBA, University of Mary

**Ecker, Elizabeth L** .......................................................... English  
BS, North Dakota State University  
MA, North Dakota State University

**Eisenberg, Steven C** .......................................................... Biology  
MS, Rutgers  
BA, Rutgers

**Eklund, Rebekah J** .......................................................... Chemistry  
BS, Houghton College  
MS, Northeastern University

**Eklund, Clyde Wayne** .......................................................... Math  
BS, Bemidji State University  
MS, University of Minnesota
Faculty Credentials

Elhard, Kathy L .............................................. Nursing
AAS, Northwest Technical College
BSN, Minnesota State University Moorhead
MSN, Minnesota State University Moorhead

Eliason, David W ........................................... Diesel Equipment Technology
DIPL, Ridgewater College
AAS, North Dakota State College of Science

Ellefson, Megan Kelly ....................................... Math
BSC, University of Minnesota
MSC, University of North Dakota

Ellefson, Megan Kelly ....................................... Math
BSC, University of Minnesota
MSC, University of North Dakota

Embretson, Deborah L ....................................... Music
BA, St. Olaf College
MA, Hamline University

Erickson, Sara Kristina Kern ................................. Nursing
BSN, Jamestown College

Evans, Bill L ...................................................... Biology
AAS, Minnesota State Community and Technical College
BS, The Citadel
MS, Medical College of Georgia

Evans, Bill L ...................................................... Biology
AAS, Minnesota State Community and Technical College
BS, The Citadel
MS, Medical College of Georgia

Fankhanel, Amy Rebecca ................................. Nursing
BSN, University of North Dakota

Field, Marla C ............................................... Business: Management, Marketing and Sales
BA, Moorhead State University
BS, Moorhead State University

Fjeld, Dixie L ..................................................... Administrative
BA, Concordia College
MA, University of St. Thomas

Flaskerud, Debra L ......................................... Computer Programming
BS, Moorhead State University
MED, North Dakota State University

Francis, Daniel J .......................................... Digital Photography and Imaging
DIPL, Minnesota State Community and Technical College

Frank, Eugene D ........................................ Radiologic Technology
BS, Saint Francis Medical Center College
MA, Saint Marys University of Minnesota

Frannea, Ronald K .......................................... English
BA, Moorhead State University
MA, University of North Dakota

Freeman, Roberta J ....................................... Communication
AA, Bemidji State University
BS, Bemidji State University
MS, Bemidji State University
MA, North Dakota State University

Frider, Debra K ............................................... Dental Hygiene
AS, North Dakota State School of Science

Gaarder, Carolyn J ....................................... Health Information Technology
BA, College of Saint Scholastica
MLA, Minnesota State University Moorhead

Ganyo, Jennifer ............................................... English
BA, University of Minnesota, Morris
MFA, Minnesota State University Moorhead

Garza, Sarah Anne .................................. Medical Coding and Insurance
DIPL, Northwest Technical College
CERT, Northwest Technical College

Gausman, Thomas A, MFA ............................ Economics, Business
BA, University of Minnesota, Morris
MA, Northern Illinois University
MS, Northern Illinois University

Gerhardson, Stefanie Leigh ................................. Theatre
BS, Bemidji State University
BA, Bemidji State University

Gibbins, Darren Royce .................................... Graphic Design, Digital Photography and Imaging
AAS, Bismarck State College
BS, Moorhead State University

Godzinski, Ronald Peter .................................. Philosophy
BA, California State University - Chico
MA, Colorado State University

Goltz, Christopher A .................................. Computer Programming
BS, University of Mary

Griffin, Joseph A ........................................... Automotive Service Technology
DIPL, Brainerd Technical Institute
DIPL, Alexandria Technical College

Grubb, Darrin F ................................................. Economics
BA, Minnesota State University Moorhead
MBA, Minnesota State University Moorhead

Haagenson, Dana LaRae .................................. Accounting
BS, Minnesota State University Moorhead
Faculty Credentials

Haagenson, Loren M...........................................Human Resources
AA, Northland Community College
BS, Minnesota State University Moorhead
MM, University of Mary

Haecherl, Lisa M...........................................Dental Hygiene
AS, North Dakota State College of Science
BS, Valley City State University

Hagen, LeRoy Dean...........................................Dental Hygiene
DDS, School of Dentistry Marquette University

Halling, Melissa..............................................Math
BS, North Dakota State University
MA, Eastern Kentucky University

Haltli, Russell Alan.........................................Construction Electricity
AAS, North Dakota State College of Science

Hanson, Kenneth C..........................................English
BS, Dickinson State University
MFA, Minnesota State University Moorhead

Hanson, Nancy C.............................................English
AS, Minnesota State University Moorhead
BA, Minnesota State University Moorhead
MA, North Dakota State University

Hanson, Nancy...............................................Dental Hygiene
CERT, North Dakota State College of Science
AS, North Dakota State College of Science

Hanson, Robin Grollmus....................................English
AA, Pensacola Junior College
BA, Florida State University
MA, Pacific Lutheran University
MLS, University of Maryland

Hanstad, Tanya J.............................................Math
BA, Concordia College
MS, North Dakota State University

Hartner, Robin Lee..........................................Nursing
AS, Fergus Falls Community College
BSN, Minnesota State University Moorhead

Heikes, David Arnold......................................English
BS, University of South Dakota
MA, Western Washington University
MA, University of South Dakota

Herbrandson, Angela Kaye.................................Nursing
AAS, Minnesota State Community and Technical College
AS, Minnesota State Community and Technical College

Hetland, Mary K............................................Psychology
BA, Concordia College
MS, Minnesota State University Moorhead

Hibma, Jody Carroll........................................Biology
AS, Worthington Community College
BS, South Dakota State University
MS, Central Michigan University

Hibma, Julie Ann............................................Biology and Chemistry
BS, Central Michigan University
MS, Central Michigan University

Hilton, Kristi Marie.......................................American Sign Language
AAS, Southeast Technical Institute
BA, Minnesota State University Moorhead
MS, Minnesota State University Moorhead

Hinrichs, Andrew J.........................................Equine Science
BS, University of Minnesota, Crookston

Hintermeister, Melissa J..................................Graphic Design Technology
BA, Concordia College

Hintgen, Sharon Voigt......................................Math
BA, University of Minnesota, Morris
BS, Minnesota State University Moorhead
MS, Bemidji State University

Hjalmquist, Dave C.........................................Computer Programming
DIPL, Northwest Technical College-Moorhead
DIPL, Northwest Technical College-Moorhead

Holmquist, Sherrie L......................................Business: Management, Marketing and Sales
AAS, University of Minnesota, Crookston
MS, University of North Dakota

Hrdlicka, Janell Faye........................................Nursing
BSN, North Dakota State University

Hughes, Alan S..............................................Construction Electricity

Indieke, Gerald N..........................................Construction Electricity
DIPL, Northwest Technical College-Wadena

Jenser, Crystal Rae..........................................English
BA, Minnesota State University Moorhead
MFA, Minnesota State University Moorhead

Jesser, Joanna K............................................IT System Support, Information Technology
BSED, Mayville State University

www.minnesota.edu
Johnson, Brenda Kay .......................................................Architectural Technology
AAS, Minnesota State Community and Technical College

Johnson, Deb F ...............................................................Custom Training
BS, Moorhead State University

Johnson, Eric A ...............................................................Art
BS, North Dakota State University
MFA, University of North Dakota

Johnson, Erin Elizabeth .......................................................Biology
BA, Augustana College
PHD, University of Delaware

Johnson, Jay E .................................................................Math
BA, University of Minnesota, Morris
MAT, University of Wisconsin Eau Claire

Johnson, Keith ...................................................Construction Management
DIPL, Moorhead Area Technical Institute
BS, Minnesota State University Moorhead

Johnson, Mark L ............................................................Political Science and History
BA, University of North Dakota
MA, Louisiana State University and Agricultural and Mechanical College

Johnson, Mark S .............................................................Electrical Lineworker
CEC, Minnesota State Community and Technical College

Johnson, Peggy J .............................................................Music
BM, Colorado State University
MM, Colorado State University
DMA, University of Cincinnati

Johnson, Randall Joseph .....................................................Information Technology
CEC, Bismarck State College
BSC, University of Mary

Johnson, Robert P ..................................................Graphic Design Technology
DIPL, Northwest Technical College-Moorhead

Johnson, Sheri A ...........................................................Communication, Theatre
BA, South Dakota State University
MS, South Dakota State University
MA, South Dakota State University

Johnson, Stephen R .....................................................Electrical Lineworker
DIPL, Minnesota West Community and Technical College

Jorgens, Kelly J ..................................................Medical Administrative Assistant
AAS, North Dakota State College of Science
BS, Bemidji State University

Kaiser, Lynn Renee ......................................................Business: Management, Marketing and Sales
BS, Minnesota State University Moorhead
MMA, University of Mary

Kallinen, Brian P .............................................................Nursing
AS, Northland Community and Technical College

Kelman, Deborah C ..................................................Librarian
BA, University of Illinois
MS, Western Michigan University

Kiecker, Carole A ..........................................................Sociology
BA, Northern State University
MS, Northern State University

King, Steven J ..............................................................Football Coach, Athletic Director
AA, Fergus Falls Community College
BA, St. Cloud State University
MA, Northern State University

Knoke, Karen R .............................................................Math
BS, Moorhead State University
MA, University of St. Thomas

Kraemer, David J ..........................................................Carpentry
DIPL, Northwest Technical College-Detroit Lakes
BS, Bemidji State University

Kraft, Colleen F ..........................................................Culinary Arts
DIPL, Northwest Technical College-Moorhead

Laager, Lon A ..........................................................Counselor
BS, Bemidji State College
MS, Bemidji State College

Lacher, Marcus J ..................................................Administrative Management Technology
BS, Minnesota State University Moorhead
MA, University of St Thomas

Lamey, Camelia ..........................................................Biological Science
BA, University of Minnesota
MS, University of Oklahoma

Larsen, Barbara A .............................................................Nursing
BSN, University of North Dakota

Larsen, Nathanael ..........................................................Psychology
BA, Minnesota State University Moorhead
BS, Moorhead State University
MS, North Dakota State University
MSED, North Dakota State University
PHD, Capella University
Lebahn, Marilynn A  Business: Management Marketing and Sales
BS, North Dakota State University

Lee, Patrick M  Construction Electricity
DIPL, Wadena Area Vocational Technical Institute

Lindgren, Steven G  Psychology
BS, Northern State University
MS, South Dakota State University

Line, Donald W  Construction Electricity
DIPL, Wadena Area Vocational Technical Institute

Loveland, Richard Alan  Fire Service
AAS, Lake Superior College

Lovgren, Jennifer Elizabeth  Communication
BS, North Dakota State University
MA, North Dakota State University

Lundborg, Shelley Kay  Business
BA, Concordia College
MS, Minnesota State University Moorhead
MBA, University of Mary

Lutgen, Emily R  Biology
BA, Grinnell College
MS, University of Montana-Missoula

Mann, Kirk Joel  English
BA, Concordia College
MA, St. Cloud State University

Mann, Randolph W  ELL
BS, Dickinson State University
MA, Iowa State University

Massen, Christie L  Medical Laboratory Technology
BS, University of North Dakota
MS, University of North Dakota

McDaniels, Scott Gavin  Construction Electricity
DIPL, Minnesota State Community and Technical College

Meissner, Christopher W  Humanities
BA, Moorhead State University
MA, University of Kansas
PHD, University of Kansas

Miller, Dennis M  Automotive Service Technology
BS, Valley City State University

Miltich, Anthony J  English
AA, Itasca State Junior College
BA, Saint John’s University
MA, Bemidji State University
BS, Bemidji State University

Moeller, Michael Alan  Automotive Service Technology
DIPL, North Dakota State College of Science

Mohn, Shannon Dale  Automotive Service Technology
AAS, Hennepin Technical College

Mohn, Angie Kay  Nursing
AAS, College of Saint Catherine-Minneapolis
BS, North Central University
MSN, University of Minnesota

Moore, Cynthia L  Nursing
DIPL, Fergus Falls Community College
AS, Fergus Falls Community College
BSN, Minnesota State University Moorhead
MSN, Minnesota State University Moorhead

Morstad, Tracy L  Nursing
BSN, Southern Illinois University
MSN, University of Mary

Mrazek, Joseph A  Mechanical Drafting and Design
AA, Brainerd Community College
BS, Bemidji State University
MS, Bemidji State University

Murphy, Thomas James  Anthropology
BS, Black Hills State University
BS, Minnesota State University, Mankato
MS, Minnesota State University, Mankato

Mutzenberger, Reuben T  Math
BS, North Dakota State University
MED, North Dakota State University

Nansen, Gary Lee  Civil Engineering Technology
BEN, University of Minnesota

Neece, Shari L  English
BS, Minnesota State University Moorhead
LIC, Moorhead State University
MA, North Dakota State University

Nelson, Jeffrey O  Criminal Justice
AA, Northland Community College
BA, Minnesota State University Moorhead
<table>
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<tr>
<th>Name</th>
<th>Degree/Affiliation</th>
<th>Field</th>
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<tbody>
<tr>
<td>Nerdahl, Joyce E</td>
<td>LIC, Fergus Falls Community College, RN, Central Lakes College, BSN, Moorhead State University, MSN, University of Minnesota</td>
<td>Nursing</td>
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<td>Neuenfeldt, Phyllis H</td>
<td>BSED, North Carolina State University at Raleigh, MED, East Carolina University</td>
<td>Math</td>
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<td>Nevala, David E</td>
<td>DIPL, Western Iowa Tech Community College</td>
<td>Heating, Ventilation and Air Conditioning</td>
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<td>Nielson, Laurel A</td>
<td>BS, Mayville State University, MA, North Dakota State University</td>
<td>Sociology</td>
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<td>Nikolas, Arlin D</td>
<td>BA, Moorhead State University, MS, North Dakota State University</td>
<td>History</td>
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<td>Olson, Carla Nichole</td>
<td>BSN, North Dakota State University, MS, University of North Dakota</td>
<td>Nursing</td>
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<td>Olson, David D</td>
<td>BSED, Valley City State University, MAT, Minot State University</td>
<td>Math</td>
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<td>Otto, Teresa Uhde</td>
<td>BS, Bemidji State University, MS, University of Wisconsin-Stout, MA, Hamline University</td>
<td>English</td>
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<td>Parker, Anthony J</td>
<td>BSB, University of Minnesota, MBA, Colorado State University-Pueblo</td>
<td>Business Entrepreneurship</td>
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<td>Paton, John R</td>
<td>MA, University of Southern Maine, BA, University of Southern Maine</td>
<td>History</td>
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<td>Patrick, Judy A, CPA</td>
<td>BBA, University of New Mexico-Anderson/Man, MBA, Metropolitan State University</td>
<td>Accounting</td>
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<td>Peltier, Robin Theresa</td>
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<td>Dental</td>
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<td>Perry, Meghan Joy</td>
<td>BA, University of Minnesota</td>
<td>Study Skills Tutor</td>
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<td>Petermann, Shana R</td>
<td>BS, North Dakota State University, MS, North Dakota State University</td>
<td>Biology</td>
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<td>Peterson, Greg R</td>
<td>DIPL, Northwest Technical College-Moorhead</td>
<td>Diesel Equipment Technology</td>
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<td>Pierce, Patsy</td>
<td>CERT, Fergus Falls Community College</td>
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<td>Pladson, Kristie G</td>
<td>AS, North Dakota State College of Science, BS, Valley City State University, MS, Minnesota State University Moorhead</td>
<td>Dental</td>
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<tr>
<td>Potter, Brenda A</td>
<td>BS, Moorhead State University</td>
<td>Medical Administrative Assistant</td>
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<td>Preuss, Tim</td>
<td>BS, Concordia College, MED, North Dakota State University</td>
<td>Information Technology</td>
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<td>Prieve, Thomas M</td>
<td>BS, University of Minnesota, DVM, University of Minnesota</td>
<td>Equine Science</td>
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<td>Quamme, Kent</td>
<td>BS, North Dakota State University, MS, North Dakota State University</td>
<td>Business</td>
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<td>Redlin, Jennifer Anne</td>
<td>BS, North Dakota State University, MS, North Dakota State University</td>
<td>Psychology</td>
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<tr>
<td>Reed, Amber L</td>
<td>DIPL, Fergus Falls Community College, AS, Fergus Falls Community College, BSN, Minnesota State University Moorhead</td>
<td>Nursing</td>
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<tr>
<td>Reisenauer, Kent James</td>
<td>AAS, North Dakota State College of Science</td>
<td>PowerSport Technology</td>
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<tr>
<td>Retzlaff, Jason</td>
<td>AA, Fergus Falls Community College, BS, North Dakota State University, MS, North Dakota State University</td>
<td>Physical Education</td>
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<tr>
<td>Richter, Sarah Ann</td>
<td>BS, St. Cloud State University, MS, St. Cloud State University</td>
<td>Math</td>
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<tr>
<td>Ripplinger, Scott C</td>
<td>DIPL, East Grand Forks Technical Institute</td>
<td>Automotive Service Technology</td>
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<tr>
<td>Risbrudt, Susan Marie</td>
<td>CERT, Fergus Falls Community College, AAS, Central Lakes College, BSN, Minnesota State University Moorhead</td>
<td>Nursing</td>
</tr>
</tbody>
</table>
Faculty Credentials

Roberts, Randy R ........................................ Architectural Technology
DIPL, Northland Community and Technical College

Robertson, Maronda Sue ........................................ Counselor
BS, University of Wisconsin-Madison
MS, Minnesota State University, Mankato

Roers, Mary B ........................................ Nursing
AS, Fergus Falls Community College
ADN, Northland Community College
BSN, Moorhead State University
MSN, University of North Dakota

Rosell, Brian ........................................ Auto Body Collision Technology
DIPL, Northwest Technical College-Detroit Lakes

Rosen, Kenneth J ........................................ Construction Electricity
DIPL, Northwest Technical College

Ruud, Terry Edward ........................................ English
BS, Minnesota State University Moorhead
LIC, Minnesota State University Moorhead
MFA, Minnesota State University Moorhead

Samuelson, Kimberle Rae ........................................ Health Information Technology
DIPL, Northwest Technical College-Moorhead
AS, Minnesota State University Moorhead

Saraswathiamma, Manjusha T ........................................ Chemistry
BSC, Mahatma Gandhi University - India
MS, Mahatma Gandhi University - India
MS, Cochin University of Science and Technology
PHD, North Dakota State University

Schaefer, Sally J ........................................ Nursing
BSN, Minnesota State University Moorhead

Schirmer, Diana Rachel ........................................ English
BA, Minnesota State University Moorhead
MFA, Minnesota State University Moorhead

Schirmer, Joshua D ........................................ English
BA, Minnesota State University Moorhead

Schulz, Douglas L ........................................ Chemistry
PHD, Northwestern University

Schwalboski, Ann Marie ........................................ English
BS, St. Cloud State University
MA, Bowling Green State University
MFA, Emerson College

Schwandt, Kenneth F ........................................ Pharmacy Technology
BS, North Dakota State University

Schwandt, Eugene M ........................................ Carpentery

Seaborn, Susan J ........................................ Nursing
BSN, American Sentinel University

Seibold, Shaun E ........................................ Nursing
BS, The University of Montana-Missoula
UKN, Concordia College

Shepard, Jana Lee ........................................ English
BA, St. Cloud State University
MA, St. Cloud State University

Shumake, Crystal K ........................................ Dental Assisting
CERT, North Dakota State College of Science
AAS, Lake Superior College
BS, Minnesota State University Moorhead

Skatvold, Karina Marie ........................................ Dental Hygiene and Dental Assisting
BS, Old Dominion University
MA, University of Oklahoma Norman Campus

Smith, Cliff Fagerburg ........................................ Math
BS, Portland State University
MS, Portland State University

Smith, Leretta May ........................................ Sociology
BS, North Dakota State University
MS, North Dakota State University
PHD, South Dakota State University

Steidl, Carole Friestad ........................................ Dental Hygiene and Dental Assisting
AS, North Dakota State College of Science
BS, Valley City State University
MA, University of St. Thomas

Stende Miller, Mary Louise ........................................ Pharmacy Technology
BS, North Dakota State University

Stenerson, Diane Lynn ........................................ English
AS, Fergus Falls Community College
BS, Minnesota State University Moorhead
MED, Lesley University

Stigen, Nancy E, CMA ........................................ Accounting
AA, Moorhead Area Vocational Technical Institute
BS, Moorhead State University

Stone, Megan M ........................................ Psychology
BA, Minnesota State University Moorhead
MA, University of Colorado at Denver
Strom, Terri Lynn .................................................... Volleyball Coach  
AA, Fergus Falls Community College  
BA, University of Minnesota, Morris

Swanson, Alicia R .......................................................... Nursing  
BSN, North Dakota State University  
MSN, Concordia College

Swedberg, Marilyn .................................................. Psychology  
AA, Fergus Falls Community College  
BA, Moorhead State College  
MS, St. Cloud State University

Swenby, Christopher J .................................................. Carpentry  
BA, Concordia College

Synstelien, Loren A .................................................. Psychology  
AA, Fergus Falls Community College  
BA, Concordia College  
MSW, University of Connecticut- School of Social Work

Szczech-Johnson, Janet D .................................................. Network Technology  
BA, Minnesota State College Moorhead  
MA, Minnesota State University Moorhead  
MS, Bemidji State University

TenEyck-Stafki, Susan D .................................................. Childcare and Education  
BS, Moorhead State University  
LIC, Moorhead State University  
MS, Moorhead State University

Tharaldson, Brent A .................................................. Web Development  
AAS, Minnesota State Community and Technical College  
BA, Minnesota State University Moorhead

Thompson, Fonda Ruth .................................................. Medical Transcription  
DIPL, Minnesota State College Moorhead  
DIPL, Northwest Technical College-Moorhead

Thorstenson, Anthony M .................................................. Philosophy  
BA, University of Minnesota-Duluth  
MA, Ohio University

Titus, Mary J ................................................................. Art  
BA, University of North Dakota  
MFA, University of North Dakota

Todt, Rebecca W .......................................................... Nursing  
BS, Berea College

Tougas-Mann, Cynthia Kay .................................................. Childcare and Education  
AA, Central Lakes College  
BES, St Cloud State University

Trombley, Kathryn M .................................................. Communication  
BS, Saint John Fisher College  
MA, Central Michigan University

Trostvig, Michael R .................................................. Music  
MM, University of Colorado at Boulder

Ullmer, Mike W .................................................. Marine Engine Technology  
DIPL, Northwest Technical College  
DIPL, Northwest Technical College  
AAS, Fergus Falls Community College  
BS, Bemidji State University

Vigness, Jeannie Jo .................................................. Medical Administrative Assistant  
BS, University of Mary

Wagner, Dennis D .................................................. Construction Electricity  
AAS, North Dakota State College of Science

Walters, Christopher A .................................................. English  
BA, University of Minnesota  
MA, The State University of New York at Buffalo

Ward, Carrie M .................................................. Administrative  
BS, Minnesota State University Moorhead  
MA, Minnesota State University Moorhead

Weber, Celeste N .................................................. Counselor  
MS, Minnesota State University Moorhead

Weber, Dean A .................................................. Plumbing  
DIPL, Northwest Iowa Community College

Weber, Richard T .................................................. Diesel Equipment Technology  
DIPL, North Dakota State College of Science

Weibye, Darlene K .................................................. Cosmetology  
DIPL, Wadena Area Vocational Technical Institute

Werner, Perry N .................................................. Librarian  
BA, University of Nebraska at Kearney  
MA, University of Iowa  
MLIS, Emporia State University

Wgeishofski, Rory John .................................................. Cosmetology  
DIPL, Wadena Area Vocational Technical Institute

Whitney, Sara Lynn .................................................. Communication  
AA, Bismarck State College  
AAS, North Dakota State University  
BS, North Dakota State University  
MA, North Dakota State University
Faculty Credentials

Wiecks, Jana K ........................................... Medical Administrative Assistant
DIPL, Minnesota State Community and Technical College

Wiese, Gerald A ........................................... Auto Body Collision Technology
DIPL, Central Lakes College

Wika, Sue T .................................................. Sociology
BS, South Dakota State University
MSC, University of Reading
PHD, South Dakota State University

Wilkens, Eric S ............................................ Computer Network Security
AAS, Community College of the Air Force
BS, Bellevue University
MPA, University of Oklahoma Norman Campus
MS, Bellevue University
PHD, Capella University

Wilkens, Michele Lee ..................................... Accounting
AAS, Metropolitan Community College Area
BBA, Bellevue University
MBA, Bellevue University

Williams, Marcia E ...................................... Accounting
ASBA, North Dakota State College of Science
BSBA, University of North Dakota

Willoughby, Daniel R ..................................... Math
BS, Minnesota State University Moorhead
MS, Northern Arizona University

Winter, Doris A ........................................... Medical Administrative Assistant
DIPL, Alexandria Technical College

Wolden, Diane M .......................................... Nursing
BSN, College of Saint Benedict
MPH, University of Minnesota

Younger, Paul ............................................. Construction Management
BS, Minnesota State University, Mankato

Zachariason, Robert J ..................................... Construction Electricity
DIPL, Northwest Technical College

Zirbes, Joan M ............................................. Administrative Support
BS, Moorhead State University
Directions to Campuses

Detroit Lakes Campus
900 Highway 34 East

From the East on US Highway 10
At the first stoplight as you enter Detroit Lakes, turn right onto Kris Street. Cross over the railroad track and turn left onto Randolph Road. Travel approximately 1 mile to the stop sign on Roosevelt Avenue. Turn right and travel approximately a half mile to the stop light; turn right on State Highway 34. The campus is ahead on your left.

From the East on US Highway 34
Entering the city, the campus is on your right (across from the Cenex Station).

From the West on US Highway 10 East
Continue on Highway 10 to the stop light at the intersection of US Highways 10 and 59. Turn left and continue for approximately two blocks. Turn right onto State Highway 34. The campus is about 1 mile ahead on your left.

From the South on US Highway 59
Travel on Highway 59 to the stop light at the intersection of US Highways 59 and 10. Continue straight, passing over the bridge. Turn right onto State Highway 34; the campus is about 1 mile ahead on your left.

From the North on US Highway 59
Travel on Highway 59 to the intersection of US Highway 59 and State Highway 34. Turn left onto Highway 34; the campus is about 1 mile ahead on your left.

Fergus Falls Campus
1414 College Way

From the East on Interstate 94
Take Exit 54 and turn right onto Lincoln Avenue. Turn left onto College Way, and the campus is on your right.

From the West on Interstate 94
Take Exit 54 and turn left onto Lincoln Avenue. Turn left onto College Way, and the campus is on your right.

From the East on State Highway 210 West
Turn right onto Pebble Lake Road/Vernon Avenue and continue to Union Avenue. At the stop sign, turn right onto Vernon Avenue and then left onto Lincoln Avenue at the downtown intersection. Turn right onto College Way, and the campus is on your right.

From the North on State Highway 59
At the junction with Interstate 94, turn left onto County Road 88/Fir Avenue and continue to Tower Road. Turn right onto Tower Road and continue to Spartan Drive. Turn left at the north entrance to the campus.
Moorhead Campus
1900 28th Avenue South

From the West on Interstate 94
Take Exit 1B (20th Street) and turn left onto 20th Street. Cross over the interstate, and you will see the college on your left. Turn left at 28th Avenue South.

From the East on Interstate 94
Take Exit 1A and turn right onto Highway 75. Immediately after your turn, take another right at the Minnesota State Community and Technical College directional sign and follow the frontage road (28th Avenue) to the campus, which will be on your left.

From the East on Highway 10
Turn left at the 21st Street intersection, one stoplight beyond Highway 75 North. Follow 21st Street beneath the railroad bridge; the street angles to the right, but continue straight onto 20th Street South. Continue for approximately two miles to 28th Avenue South. The campus will be on your right.

North Moorhead Campus
1110 14th Street South

From the main campus, travel west on either 24th or 28th avenues (the main streets on the north or south sides of the campus). Turn right onto 14th Street South and continue to 12th Avenue South, where the campus is located.

Wadena
405 Colfax Ave SW

From the North on US Highway 71
At Colfax Avenue/State Highway 29, turn right and continue on Colfax Avenue for five blocks. From the South on US Highway 71
At Colfax Avenue/State Highway 29, turn left and continue on Colfax Avenue for five blocks. The campus is on your left.

From the East on US Highway 10 West
Turn left onto State Highway 71 and continue to Colfax Avenue/US Highway 29. Turn right onto Colfax Avenue and continue for five blocks. The campus is on your left.

From the West on US Highway 10 East
Turn right onto Highway 71 and continue to Colfax Avenue/Highway 29. Turn right onto Colfax Avenue and continue for five blocks. The campus is on your left. From the South/West on State Highway 29
The campus will be on your right shortly after entering the city limits.
Detroit Lakes
900 Highway 34 East
Detroit Lakes, MN 56501-2698
218.846.3700
Fax: 218.846.3794

Fergus Falls
1414 College Way
Fergus Falls, MN 56537-1000
218.736.1500
Fax: 218.736.1510

Moorhead
1900 28th Avenue South
Moorhead, MN 56560-4899
218.299.6500
Fax: 218.299.6810

Wadena
405 SW Colfax Avenue
Wadena, MN 56482-1447
218.631.7800
Fax: 218.631.7904

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