

2011-2012

College Catalog



M|State

Discover Your Future at
www.minnesota.edu

Detroit Lakes

Fergus Falls

Moorhead

Wadena

eCampus

Fast Facts

Enrollment:

Total number students served.....	9,154
Full-time students	52%
Part-time students	48%
Percent male	42%
Percent female.....	58%
Percent students of color.....	9%

Degrees offered:

Associate in Arts, Associate in Science,
Associate in Applied Science, Associate in Fine Arts,
certificates and diplomas

Largest programs:

Nursing, business, Associate of Arts transfer, radiologic
technology, construction electricity

Unique programs:

Biofuels technology, electrical line worker, equine science,
industrial mechanical maintenance, nanoscience technology,
power sports technology, sustainable food production, wine
studies

Intercollegiate sports:

Womens volleyball, golf, basketball and softball; mens
football, basketball, golf and baseball; member of Minnesota
College Athletic Conference and the National Junior College
Athletic Association

Student activities:

Music, art and drama, student government, student and
professional organizations, honor societies

Housing:

As a multi-campus college, housing options vary by community.
In Detroit Lakes there are ample off-campus housing options,
many within walking distance of the campus. Fergus Falls has
on-campus apartment-style living with a variety of amenities
and meal plan options, as well as off-campus housing options
in the community. The Moorhead campus has ample off-
campus apartments within walking distance of the campus.
In Wadena, off-campus housing options are available, many in
close proximity to the campus.

Highlights:

One college. Four Campuses. Online. That's not just a catchy
phrase but a way of life at M State, which offers more than
120 career and liberal arts programs at locations in the
heart of Minnesota lakes country and the Fargo-Moorhead
metropolitan area.

- Locations in Detroit Lakes, Fergus Falls, Moorhead, Wadena.
- Enjoy a rich college experience through student life activities focused on both on-campus and commuter students.
- The college offers the Associate in Arts degree on all campuses and online. The Fergus Falls campus offers the Associate in Fine Arts degree in visual art or music. These degree options provide easy transfer toward a degree at a four-year institution.
- The college ranks among the top three fundraising two-year colleges in Minnesota, providing more than \$170,000 in scholarships in the 2009-2010 academic year.
- All campuses provide career programs in health care services, trade and technology areas.
- All students have access to assistance through advising, counseling, tutoring, transfer assistance, career placement and more.
- The college offers 23 online majors and hundreds of online courses leading to degrees, diplomas and certificates.
- Get your questions answered during a live chat from 10 a.m.-7 p.m. or tour campus Mondays, Wednesdays, Fridays at 10 a.m. and 2 p.m. or call 1.888.696.7282

Discover your future at
minnesota.edu

M|State

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, or membership or activity in a local commission as defined by law. Inquiries regarding compliance, rights and other information may be addressed to the 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 the:

**Minnesota State
Community and Technical College**
Compliance Officer
Doug Andring
1900 28th Avenue South
Office B152
Moorhead, MN 56560
Telephone: 218-299-6870
Fax: 218-299-6513

**Office of Civil Rights
U.S. Department of Education**
111 N. Canal Street, Suite 1053
Chicago, IL 60606-7204
Telephone: 312-886-8434
FAX: 312-353-4888;
TDD: 312-353-2540
E-mail: OCR_Chicago@ed.gov

**U.S. Department of Education
Office for Civil Rights**
Customer Service Team
Mary E. Switzer Building
330 C Street, SW
Washington, DC 20202
Telephone: 1-800-421-3481
FAX: 202-205-9862;
TDD: 877-521-2172
E-mail: OCR@ed.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 their Web site at: <http://www.ncahigherlearningcommission.org/> or you can write to the association at 30 North LaSalle Street, Suite 2400; Chicago, IL 50502-2504; telephone (312)263-0456.

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 (October 2010). 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.

If you use a TTY, you can call us using the Minnesota Relay Service at (651) 297-5353 or 1-800-627-3529 and ask them to place a call to Minnesota State Community and Technical College. Upon request this information will be made available in alternate formats.



A member of the Minnesota State Colleges and Universities System.
An Equal Opportunity Educator/Employer
Un Educador/Empleador de Oportunidad Igual

Catalog Disclaimer

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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 Web site at www.minnesota.edu.

Welcome to
Minnesota State
Community and Technical College

Discover your future.

What kind of M State student do you want to be? A student in a career program headed for employment in two years or less? One who is pursuing a bachelor's degree, or beyond, but getting a start in a personal and affordable setting? Someone who is advancing his/her education when it's convenient through online education? Or are you a lifelong learner looking for customized training to fit your business? As a fully accredited institution, Minnesota State Community and Technical College is prepared to help you discover your future.

Through its four campuses in Detroit Lakes, Fergus Falls, Moorhead and Wadena, M State offers all that our region could ask of a two-year community and technical college: transfer and liberal arts programs, vocational and technical education, customized training for business and industry, continuing education opportunities for lifelong learners, athletic and cultural opportunities and strong student support services.

In addition to the four campuses, we also have our eCampus, which offers more than 22 majors online and 150 courses so students can advance their education when it works for them.

Each campus has a unique and proud history of providing programs and personal services to meet student needs for more than 40 years. The college staff offers outstanding support services, and the faculty provides excellent teaching. Our focus is on meeting the individual needs of each of our students.

M State students are involved in all aspects of college life. Our communities demonstrate their support for M State and its students by supporting our foundations and by participating in the college's cultural, athletic and continuing education program and events.

M State alumni have distinguished themselves in their fields both regionally and nationally. Graduates of our professional programs are working in high-demand careers, and graduates of our transfer programs are finding success in higher education and in life beyond college.

Welcome to Minnesota State Community and Technical College. If you need additional information, please contact us at 1-888-696-7282 from 7 a.m. to 7 p.m. Monday through Friday.

Mission

M State will be a regionally recognized organization focused on and partnering for innovation, learning and your future.

Vision

To provide accessible education with vigor and integrity to diverse learners, preparing them for dynamic learning, living, working and serving.



Detroit Lakes

900 Highway 34 East
 Detroit Lakes, MN 56501-2698
 218.846.3700 • 1.800.492.4836 • Fax: 218.846.3794

About the Campus

The Detroit Lakes campus, with a total enrollment of 1,700, 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, childcare, drafting and healthcare 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.



Fergus Falls

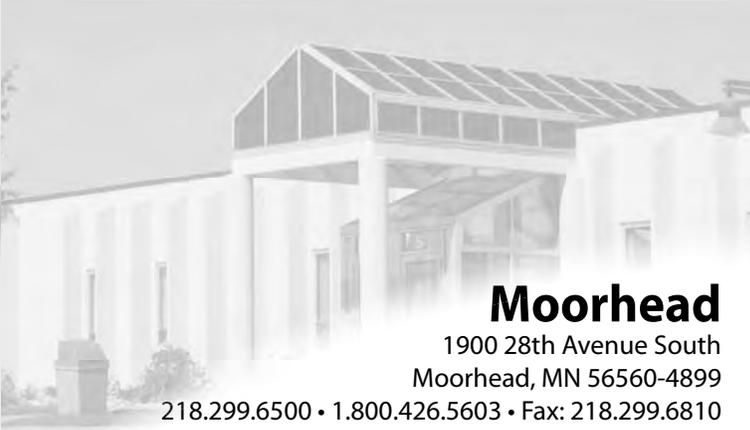
1414 College Way
 Fergus Falls, MN 56537-1000
 218.736.1500 • 1.877.450.3322 • Fax: 218.736.1510

About the Campus

The Fergus Falls campus, with a total enrollment of 3,200, has been providing high-quality academic programs in the liberal arts and health sciences for 50 years. Degree options include Associate of Arts, Associate of Fine Arts in Music and in Visual Arts, Associate of Science in Biological Sciences, Medical Laboratory Technology, Engineering, Environmental Science, Accounting and Business, Associate Diploma in Nursing and Certificates in Equine Science and Sustainable Food Production. 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, mens and womens golf, mens and womens basketball, baseball and softball. Visitors are amazed by the extensive art collection displayed across the campus, making it 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.



Moorhead

1900 28th Avenue South
Moorhead, MN 56560-4899

218.299.6500 • 1.800.426.5603 • Fax: 218.299.6810

About the Campus

The Moorhead campus, with a total enrollment of 4,450, 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 of 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 nanotechnology, biotechnology and engineering. Campus highlights include food service which features homemade meals made by students in the culinary program, student support services, intramural sports, student life opportunities with nearly 20 student organizations, and campus housing at nearby Minnesota State University Moorhead.

About the Community

Fargo-Moorhead, with a population of 150,000, 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.



Wadena

405 SW Colfax Avenue
Wadena, MN 56482-1447

218.631.7800 • 1.800.247.2007 • Fax: 218.631.7904

About the Campus

The Wadena campus, with a total enrollment of 1,000, offers degrees in a range of fields, including business, healthcare, cosmetology, industrial mechanical maintenance 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 of 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 4,400, M State's eCampus provides both an affordable and flexible way to advance your education. Whether you are taking classes or earning your degree, eCampus offers more than 150 classes and 22 programs and majors online so you can discover your future without ever setting foot on a campus. Classes are taught by full-time faculty members. There is easy online access to your instructors and advisors, as well as other resources like an electronic library and tutoring that will help you along the way. M State is fully accredited, courses are highly transferable and there is no requirement for continuous enrollment.



Custom Training & Workforce Development

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 & Credit Bearing 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

- Allied Health & Fire and 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:

Allied Health & Emergency Services

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

Applied Technology & 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
- Low Pressure Boiler Systems
- Manufacturing Employee Series
- Manufacturing Flow
- Manufacturing Procurement
- MN Commercial Vehicle Inspection
- 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

Mary Ryan, Director of Client Services

Custom Training Services
1900 S. 28th Ave,
Moorhead, MN 56560
218.291.4266 (fax)
218.849.2655 (cell)
mary.ryan@minnesota.edu

GL Tucker, Director of Manufacturing and Technical Products

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

Karen Schumacher, Director of Health and Emergency Services

Custom Training Services
Leadership and Emergency Services
1900 S 28th Ave
Moorhead, MN 56560
218.299.6586 (office)
218.291.4266 (fax)
218.556.5297 (cell)
karen.schumacher@minnesota.edu

Accreditation

**M State is accredited by
The Higher Learning Commission:
Member of the North Central Association**

30 North LaSalle Street, Suite 2400
Chicago, IL 50502-2504
Web site: <http://www.ncahigherlearningcommission.org>
Phone: 312.263.0456

M State 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
<http://natef.org>

Construction Electricity

(Moorhead, Wadena)
Approved as one year of credit toward students' journeyman's license by the:
Minnesota State Board of Electricity
1821 University Avenue, Suite S-128
St. Paul, MN 55104-2993
Phone: 651.642.0800
Fax: .651.642.0441

Cosmetology

(Wadena)
Approved by the Minnesota State Board of Cosmetology

Criminal Justice

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

Dental Hygiene

(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

(Moorhead)
Commission on Accreditation of Allied Health Education Programs
35 East Wacker Drive, Suite 1970
Chicago, IL 60601-2208
Phone: 312.553.9355
Fax: 312.553.9616

in cooperation with the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
Accreditation Services
c/o AHIMA
233 N. Michigan Ave, Suite 2150
Chicago, IL 60601-5800
Phone: 312.233.1130
Fax: 312.233.1430

Medical Lab Technician

(Fergus Falls)
National Accrediting Agency for Clinical Laboratory Science
8410 W. Bryn Mawr Avenue, Suite 670
Chicago, IL 60631
Phone: 773.714.8880
Fax: 773.714.8886

Nursing (AS)

(Detroit Lakes, Fergus Falls, Moorhead, Wadena)
MN Board of Nursing
2829 University Ave. Southeast, #200
Minneapolis, MN 55414-3253
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

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

Radiologic Technology Program

(Detroit Lakes and Distance)
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
Web site: www.jrcert.org

Plumbing - 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
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
www.nursingboard.state.mn.us
Phone: 888.234.2690 / 612.617.2270
Fax: 612.617.2190

Program Profiles

Discover your future at
minnesota.edu

M|State

Program Title	Degree	Credits	D	F	M	W	O
Accounting	Diploma	64	D		M		E
Accounting	AS	64		F			E
Accounting	AAS	72	D		M		E
Accounting Clerk	Diploma	33	D		M		
Administrative Assistant	AAS	60			M		
Administrative Management Technology	AAS	66	D				
Administrative Support	Diploma	33			M		WE
Administrative Support - Bookkeeping Emphasis	Diploma	49			M		
Administrative Support - Mircocomputer Emphasis	Diploma	49			M		
American Sign Language Studies	Certificate	18			M		
Architectural Technology	AAS	72	D				
Art	AFA	60		F			
Auto Body Collision Technology	Diploma	65	D				
Auto Body Collision Technology	AAS	72	D				
Automotive Service Technology	Diploma	69	D		M		
Automotive Service Technology	AAS	72	D		M		
Billing Compliance Specialist	Certificate	25					E
Bio-fuels Technology	AAS	72			M		
Biotechnology	AAS	63			M		
Biological Sciences	AS	60		F	M		
Business	AS	60		F	M		E
Business Entrepreneurship	AAS	67	D				E
Business Management	AS	60		F			
Business Management/Ownership	Diploma	32	D				
Business: Sales, Marketing, and Management	AAS	70			M		E
Business: Sales, Marketing, and Management	Diploma	70			M		
Carpentry	Diploma	64			M		
Carpentry	AAS	72			M		
Carpentry - Residential	Diploma	34					WE
Carpentry Assisting	Certificate	30			M		
Carpentry Science	Diploma	33				W	
Child Care and Education - Level II	Certificate	24	D				CC WE
Cisco Networking	Certificate	12	D			W	E CC
Civil Engineering Technology	AAS	72	D				
Computer & Network Technology	Diploma	31				W	E
Computer & Network Technology	AAS	70				W	E CC
Computer Network Security	AAS	67	D				
Computer Network Security	Certificate	12	D				E
Computer Programming	AAS	70			M		E
Computer Support Essentials	Certificate	15	D				E
Construction Electricity	Diploma	74			M	W	
Construction Electricity	Industrial Maintenance Emphasis - Diploma	72				W	
Construction Management	AAS	72			M		
Correctional Officer	Certificate	25			M		
Cosmetology	Diploma	58				W	
Criminal Justice	AS	60			M		
Culinary Arts	Diploma	64			M		
Dental Assisting	AAS	63			M		
Dental Assisting	Diploma	48			M		

Program Title	Degree	Credits	D	F	M	W	O
Dental Hygiene	AAS	88			M		
Diesel Equipment Technology	(Case IH & New Holland Sponsored) - AAS	79			M		
Diesel Equipment Technology	(John Deere Sponsored) - AAS	79			M		
Diesel Equipment Technology	(Truck Option) - AAS	79			M		
Diesel Equipment Technology	(General) - AAS	79			M		
Diesel Equipment Technology	(General) - Diploma	65			M		
Digital Photography & Imaging	Certificate	18			M		
Early Childhood & Paraprofessional Education	AS	60	D				CC WE
Electrical Lineworker Technology	AAS	72				W	
Electrical Lineworker Technology	Diploma	36				W	Baudette
Energy Services Technology	Diploma	36				W	
Energy Services Technology	AAS	68				W	
Engineering	AS	60		F	M		
Entrepreneurship	Certificate	16	D				CC E
Environmental Science	AS	60		F			
Equine Science	AAS	61		F			
Equine Science	Diploma	31		F			
Esthetist	Certificate	24				W	
Fire Department Company Officer	Certificate	22					E
Fire Service Preparation	Certificate	30			M		
Graphic Design Technology	Certificate	30			M		
Graphic Design Technology	AAS	60			M		
Health Information Technology	AAS	64					E
Human Resources	AAS	60			M		E
Human Resources	AS	60			M		E
HVAC - Heating, Ventilation, & Air Conditioning	Diploma	42				W	
Industrial Mechanical Maintenance	Diploma	39				W	CC
Information Technology	AS	60			M		
Information Technology	Diploma	60			M		
IT Systems Support	AAS	68	D				E
IT Systems Support	Diploma	34	D				
Landscape and Garden Center Technician	Diploma	34			M		
Liberal Arts and Sciences	AA	60	D	F	M	W	E
Liberal Arts and Sciences - Social Science Emphasis	AA	60	D	F	M		E
Management Information Systems	AS	60		F			
Manicurist	Certificate	17				W	
Manufacturing Engineering Technology	AAS	70					CC
Manufacturing Technician	Certificate	19					CC
Manufacturing Technology	Diploma	37					CC
Marine Engine Technology	Certificate	30	D				
Marine Engine Technology	Diploma	64	D				
Marine Engine Technology	AAS	69	D				
Marketing	AAS	68	D				
Massage Therapy	Diploma	32				W	
Mechanical Drafting & Design	AAS	72			M		
Mechanical Drafting & Design	Diploma	60			M		
Medical Administrative Assistant	AAS	60			M	W	E
Medical Coding & Insurance	Diploma	50			M	W	E
Medical Laboratory Technician	AS	60		F			

Program Title	Degree	Credits	D	F	M	W	O
Medical Office Assistant	Diploma	44			M	W	E
Medical Receptionist	Diploma	34			M	W	E
Medical Transcription	Diploma	40			M	W	E
Music	AFA	64		F			
Nanoscience Technology	AAS	62			M		
Nursing	(Mobility Option) - Associate Degree (RN)	32	D	F	M	W	E
Nursing	(Generic Option) - Associate Degree (RN)	64	D	F		W	
Paralegal	AAS	66	D				E
Pharmacy Technology	Diploma	36					E
Pharmacy Technology	AAS	60					E
Phlebotomy Technician	Certificate	10		F			
Plumbing Technology	Diploma	36			M	W	
Plumbing Technology	AAS	64			M	W	
PowerSports Technology	Diploma	65	D				
Practical Nursing	Diploma	47	D	F		W	
Practical Nursing	AAS	63	D	F	M	W	
Project Design Technician	Certificate	15					CC
Radiologic Technology	AAS	89	D				E
Refrigeration and Air Conditioning	Diploma	67			M		
Sales and Marketing	Diploma	32	D				
Sign Language Interpreter Preparation	AAS	65			M		
Supervision and Leadership	AS	64					CC
Supervisory Leadership	AAS	60					CC
Supervisory Leadership	Certificate	30					CC
Supervisory Leadership Essentials	Certificate	18					CC
Sustainable Food Production	Diploma	30		F			
Technological Studies I	Certificate	16					CC
Technological Studies II	Certificate	11					CC
Voice and Video Over Internet Protocol	Certificate	15				W	
Web Development	Diploma	62	D				E
Web Development	Certificate	30	D				E
Web Development	AAS	65	D				E
Welding	Certificate	15					CC
Wine Studies	Certificate	9			M		

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 the transfer to a four-year institution. The AA degree requires students to complete the Minnesota Transfer Curriculum. Majors listed are among the most popular; 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 20 general education credits. Minnesota State Community and Technical College 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 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.

Diploma is the vocational degree awarded upon completion of a technical program. Studies include technical credits only, with 6-12 general studies credits related to your technical education.

Certificate is awarded upon completion of a program requiring 30 or fewer credits and requires a minimum of 3 general education credits.

Detroit Lakes (D)

Fergus Falls (F)

Moorhead (M)

Wadena (W)

Corporate Credit (CC)

White Earth (WE)

eCampus (E)

Associate in Arts (AA) Degree:

(Effective Fall 2009)

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 A.A. 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 2.00 and a GPA of 2.00 with the Minnesota Transfer Curriculum.

Earn at least 20 of the 60 credits at M State.

Complete a minimum of 40 credits of liberal education. Students may satisfy the liberal education requirement with a variety of courses and credits. Some courses will serve more than one of the ten (10) required areas of emphasis. Fulfilling the minimum required credits of courses in each area of emphasis will not satisfy the 40 credit liberal education minimum. Some additional credits beyond the minimum requirements in Areas 1-10 are required to achieve the overall 40 credit liberal education component. Students should carefully review and tally their progress.

In order to be certified as having met all the requirements of the College's MINNESOTA TRANSFER CURRICULUM, a student must successfully complete courses as prescribed in the following Liberal education distribution areas with a minimum GPA of 2.00.

AREA 1: Written and Oral Communication

9 Credit Minimum

- ENGL1101 College Writing
plus one of the following English courses
- ENGL1205 Writing About Literature
ENGL1210 Writing About Current Issues
ENGL1215 Professional and Technical Writing
ENGL1220 Professional & Technical Writing (02)
plus one of the following Speech courses
- COMM1120 Introduction to Public Speaking
COMM1130 Small Group Communication(02)
COMM1140 Interpersonal Communication (02)

AREA 2: Critical Thinking

Students must complete 2 courses from any two of the following discipline areas:

- HUM2236 Technology in the Humanities (06,08)
MATH1213 Introduction to Statistics (04)
PHIL1201 Ethics (06 09)
MATH1114 College Algebra (04)
CHEM1101 Prin of General Chemistry(03)
SOC1111 Intro to Sociology(05 07)
CHEM1100 Fund Concepts Chemistry (03)
PHIL2200 Philosophy of Communications (01)
BIOL1104 Biology of Human Concerns (03)
BIOL1112 General Biology II (03)
BIOL2202 Principles of Nutrition (03)
CHEM1111 General Inorganic Chemistry I (03)
CHEM1112 General Inorganic Chemistry II (03)
ENGL1201 Technical Writing
ENGL2230 Environmental Literature(06, 10)
ENGL2231 Intro to Literature: Poetry(06, 07)
ENGL2234 Intro to Literature: Short Stories (06, 07)
ENGL2235 Intro to Literature: Drama (06, 08)
ENGL2236 Introduction to Literature: Novel (06, 07)
ENGL2237 Intro to Literature: Short Prose (06, 09)
ENGL2239 Nature Writers (06, 10)
ENGL2330 Individual Authors (06)
CHEM2224 Organic Chemistry I (03)
CHEM2225 Organic Chemistry II(03)

- HUM1110 Native American Culture (06,07)
HUM2210 Introduction to Film (06)
MATH1100 World of Math(04)
MATH1115 Functions/Trigonometry (04)
MATH1134 Calculus I (04)
MATH1135 Calculus II (04)
MATH2200 Principles of Arithmetic (04)
MATH2231 Analytical Geometry and Calculus III (04)
MATH2257 Linear Algebra (04)
MATH2259 Differential Equations(04)
MUSC1121 Basic Theory and Musicianship I (06)
MUSC1122 Basic Theory and Musicianship II (06)
PHIL1211 Intro to Philosophy (06)
PHYS1101 Physics & Environment (03L,10)
PSYC1101 Human Interaction(05)
PSYC1107 Environmental Psyc (05,10)
PHIL1200 Applied and Professional Ethics (09)
SOC2215 Criminology(05)
BIOL1107 Environmental Science Issues (03,10)
BIOL1108 Env Science Issues Lab (03 10)
PSYC2226 Behavior and Env Management (05,10)
MATH1102 Finite Math (04)
ILS1100 Integrative Learning Seminar I
HUM1101 Intro to Humanities (06)
MUSC2281 Private Instrumental Lessons (06)
COMM2240 Family Communication
MUSC2231 Advanced Theory and Musicianship III (06)
MUSC2232 Advanced Theory and Musicianship IV (06)
ENGL2320 Special Topics (06)
ENGL1220 Professional & Technical Writing (01)
MATH1207 Elementary Statistics(04)
PHIL2224 Philosophy of Religion (06,08)
PSCI2220 Intro to Constitutional Theory (05,09)
ECON1150 Essentials of Economics(05)
PHIL1130 Critical Thinking
MATH1122 Applied Calc/Linear Alg(04)
ENGL2304 Intro to Literature,Native American Focus(06)
BIOL2245 Molecular & Field Ecology (03L)
PHIL2230 Existentialism (06)
ENGL2323 Horror and Supernatural Fiction (06)
ENGL2322 Banned Literature (06,07)
SOC2118 Sociology of Aging (05, 07)
ENGL2372 Children & Literature (06,07)
ENGL2324 Travel Literature (06,10)
CHEM1115 Intro to Organic and Biochemistry (03L)
PHIL2225 Bioethics (09)
HONS1101 Introduction to Honors
HONS2900 Honors Capstone Seminar
COMM1100 Power and Comm in Human Relations(01)
ART1117 Beginning Printmaking (06)
ART1123 Global Art History: Asian, Islamic, African, Mesoamerican (06)
COMM1130 Small Group Communication (01)
COMM1140 Interpersonal Communication(01)
MATH1116 College Trigonometry (04)
MATH1118 Precalculus(04)
ENGL2374 The Poetics of Rock Lyrics (06)
ILS2100 Integrative Learning Seminar II

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).

- CHEM1101 Prin of General Chemistry (02)
BIOL2266 Diagnostic Microbiology
BIOL2257 Medical Microbiology
CHEM1100 Fund Concepts Chemistry (02)
BIOL1102 Introduction to Horticulture
BIOL1104 Biology of Human Concerns (02)
BIOL1112 General Biology II (02)
BIOL1161 Intro to Freshwater Biology(10)
BIOL2202* Principles of Nutrition (02)
CHEM1111 General Inorganic Chemistry I (02)
CHEM1112 General Inorganic Chemistry II (02)
CHEM2224 Organic Chemistry I (02)
CHEM2225 Organic Chemistry II (02)
PHYS1101 Physics & Environment (02,10)
PHYS1401 College Physics I
PHYS1402 College Physics II
PHYS1411 University Physics I

- PHYS1412 University Physics II
BIOL1111* General Biology I (10)
BIOL1107* Environmental Science Issues (02,10)
BIOL1108 Env Science Issues Lab (02,10)
BIOL2230 Human Anatomy and Physiology I
BIOL2232 Human Anatomy and Physiology II
PHYS1106 Fund of Physics - Mechanics
PHYS1105* Fundamental Concepts in Physics
BIOL2240* Genetics
BIOL1152* Food Science
PHYS1120* Introduction to Astronomy
BIOL2245 Molecular & Field Ecology(02)
GLST1510* Global Studies: Natural Science(08)
BIOL2010* General Ecology(10)
BIOL1115* Introduction to Biotechnology
BIOL2220 General Microbiology
CHEM1115 Intro to Organic and Biochemistry (02)

AREA 4: Mathematics and Logical Reasoning

Complete a minimum of 3 credits

- MATH1100 World of Math (2)
MATH1102 Finite Math (2)
MATH1114 College Algebra (2)
MATH1115 Functions/Trigonometry (2)
MATH1116 College Trigonometry (2)
MATH1118 Precalculus (2)
MATH1122 Applied Calc/Linear Alg (2)
MATH1134 Calculus I (2)
MATH1135 Calculus II (2)
MATH1207 Elementary Statistics (2)
MATH1213 Introduction to Statistics (2)
MATH2200 Principles of Arithmetic (2)
MATH2231 Analytical Geometry and Calculus III (2)
MATH2257 Linear Algebra (2)
MATH2259 Differential Equations (2)
PHIL2235 Symbolic Logic

AREA 5: History and the Social and Behavioral Sciences

Complete a minimum of 9 credits selected from two different discipline areas.

- ANTH1100 Anthropology (8)
ANTH1200 Medical Anthropology (8)
ECON1150 Essentials of Economics (02)
ECON2210 Macroeconomics
ECON2222 Microeconomics (09)
GEOG1110 World Geography (08)
HIST1110 Western Civilization: Ancient-1400 (08)
HIST1111 Western Civilization: 1400-1600 (08)
HIST1112 Western Civilization: 1600-1800 (08)
HIST1113 Western Civilization: 20th Century (08)
HIST1500 European Experience (08)
HIST1600 History of Baseball
HIST1800 History of the Civil Rights Movement (07)
HIST2211 American History Colonial Period (07)
HIST2212 American History 19th Century (07)
HIST2213 American History: 20th Century (07)
HONS1100 Introduction to Honors
PHIL2300 Political and Social Philosophy (07)
PSCI1120 American National Government (09)
PSCI1130 State and Local Government (09)
PSCI2204 Comparative Government (8)
PSCI2206 Global Politics (8)
PSCI2210 Judicial Politics (09)
PSCI2220 Intro to Constitutional Theory (02, 09)
PSYC1101 Human Interaction (02)
PSYC1107 Environmental Psyc (02, 10)
PSYC1200 General Psychology (09)
PSYC1500 Positive Psychology
PSYC2220 Abnormal Psychology
PSYC2222 Developmental Psychology (09)
PSYC2224 Social Psychology (07)
PSYC2226 Behavior and Env Management (02, 10)
PSYC2230 Personality Psychology
SOC1111 Intro to Sociology (02, 07)
SOC1113 Social Problems (09)
SOC1114 Sociology Service Learning
SOC2118 Sociology of Aging (02,07)
SOC2211 Marriage and Family

SOC2213 Sociology of the Family (07)
 SOC2215 Criminology (02)
 SOC2216 Minority Group Relations (07)
 SOC2217 Rural Sociology (07)
 SOC2220 Food, Culture and Society (07)
 SOC2222 Sociology of Agriculture
 WMST1130 Women's Studies (07)

AREA 6: The Humanities and Fine Arts

Complete a minimum of 9 credits selected from the 3 different discipline areas.

(A maximum of 3 Fine Arts credits may be utilized)

ART1108 Foundations of Art, 3-D
 ART1117 Beginning Printmaking (02)
 ART1121 World of Art I (08)
 ART1122 World of Art II (08)
 ART1123 Global Art History: Asian, Islamic, African, Mesoamerican (02)
 ART1124 American Art (07)
 ART1140 Handbuilt Ceramics
 ART1141 Ceramics I
 ART2241 Advanced Ceramics
 COMM2220 Oral Interpretation
 ENGL2200 Introduction to Creative Writing
 ENGL2222 Creative Writing: Fiction
 ENGL2223 Creative Writing: Personal Narrative
 ENGL2228 A Well Examined Life: Reading and Writing Memoir (07)
 ENGL2230 Environmental Literature (02, 10)
 ENGL2231 Intro to Literature: Poetry (02, 07)
 ENGL2234 Intro to Literature: Short Stories (02, 07)
 ENGL2235 Intro to Literature: Drama (02, 08)
 ENGL2236 Introduction to Literature: Novel (02, 07)
 ENGL2237 Intro to Literature: Short Prose (02, 09)
 ENGL2239 Nature Writers (02, 10)
 ENGL2302 American Ethnic Literature (07)
 ENGL2304 Intro to Literature, Native American Focus (02)
 ENGL2310 Intro to Mythology
 ENGL2314 Intro to Shakespeare
 ENGL2320 Special Topics (02)
 ENGL2321 Women in Literature (07)
 ENGL2322 Banned Literature (02, 07)
 ENGL2323 Horror and Supernatural Fiction (02)
 ENGL2324 Travel Literature (02, 10)
 ENGL2330 Individual Authors (02)
 ENGL2331 American Literature I (07)
 ENGL2332 American Literature II (07)
 ENGL2361 British Literature I (08)
 ENGL2362 British Literature II (08)
 ENGL2372 Children's Literature (02, 07)
 ENGL2374 The Poetics of Rock Lyrics (02)
 GLST1121 Humanities Italy (08)
 GLST1126 Cultures of Italy and Greece II (08)
 HUM1101 Intro to Humanities (02)
 HUM1105 Religion in the Humanities (08)
 HUM1110 Native American Culture (02, 07)
 HUM1120 Culture of Italy I (08)
 HUM1132 Women in the Humanities (07)
 HUM1134 Global Perspectives for Women (08)
 HUM2210 Introduction to Film (02)
 HUM2230 World Cinema (08)
 HUM2236 Technology in the Humanities (02, 08)
 HUM2281 Culture of the British Isles (08)
 HUM2293 Field Experience: Europe (08)
 HUM2295 Field Experience: The East (08)
 HUM2500 Honors Colloquy (07)
 MUSC1111 Fundamentals of Music
 MUSC1115 Exploring our American Musical Heritage (07)
 MUSC1116 The World of Music (08)
 MUSC1118 Rock and Pop Music
 MUSC1120 Introduction to Music Technology
 MUSC1121 Basic Theory and Musicianship I (02)
 MUSC1122 Basic Theory and Musicianship II (02)
 MUSC1150 History of Jazz
 MUSC2231 Advanced Theory and Musicianship III (02)
 MUSC2232 Advanced Theory and Musicianship IV (02)
 MUSC2281 Private Instrumental Lessons (02)
 MUSC2285 Advanced Music Composition
 PHIL1201 Ethics (02, 09)
 PHIL1211 Intro to Philosophy (02)

PHIL2224 Philosophy of Religion (02, 08)
 PHIL2230 Existentialism (02)
 PHIL2240 Non-Western Philosophical Perspectives (08)
 THTR1100 Introduction to Theatre
 THTR1105 Acting I
 THTR1111 Intro to Theater
 THTR1120 Theatre Performance Practicum
 THTR1125 Theatre Technical Practicum

The Fine Arts

ART1105 Intercultural Art & Design (07)
 ART1107 Foundations of Art, 2-D
 ART1110 Intro to Art
 ART1111 Beg Drawing
 ART1112 Beg Painting
 ART1113 Drawing II
 ART1116 Pastel Drawing
 ART1118 Intro to Watercolor
 ART2260 Art, Portfolio Design and Professional Dev
 ENGL2221 Creative Writing: Poetry
 MUSC1112 Beg Class Guitar
 MUSC1113 Beg Class Voice
 MUSC1114 Beg Class Piano
 MUSC1123 Sight Singing & Ear Training I
 MUSC1124 Sight Singing & Ear Training II
 MUSC1135 Voice Ensemble
 MUSC1141 Concert Choir
 MUSC1145 Area Chorale
 MUSC1151 Ind Voice Lessons
 MUSC1162 Jazz Ensemble
 MUSC1164 Concert Band
 MUSC1168 Pep Band
 MUSC1181 Private Instrumental Lessons
 MUSC1185 Private Music Composition Lessons
 MUSC1191 Ind Piano Lessons
 MUSC2223 Sight Singing & Ear Training III
 MUSC2224 Sight Singing & Ear Training IV
 MUSC2251 Individual Voice Lessons
 MUSC2291 Individual Piano Lessons
 THTR1112 Intro to Stagecraft
 THTR1121 Theatre Experimental Perform Practicum
 THTR1131 Acting Drama Lab
 THTR1141 Stage Craft

AREA 7: Human Diversity

Complete one course

ART1105 Intercultural Art & Design (06)
 ART1124 American Art (06)
 COMM2230 Intercultural Communication
 COMM2250 Gender Communication
 ENGL2228 A Well Examined Life: Reading and Writing Memoir (06)
 ENGL2231 Intro to Literature: Poetry (02, 06)
 ENGL2234 Intro to Literature: Short Stories (02, 06)
 ENGL2236 Introduction to Literature: Novel (02, 06)
 ENGL2302 American Ethnic Literature (06)
 ENGL2321 Women in Literature (06)
 ENGL2322 Banned Literature (02, 06)
 ENGL2331 American Literature I (06)
 ENGL2332 American Literature II (06)
 ENGL2372 Children's Literature (02, 06)
 HIST1800 History of the Civil Rights Movement (05)
 HIST2211 American History Colonial Period (05)
 HIST2212 American History 19th Century (05)
 HIST2213 American History: 20th Century (05)
 HUM1110 Native American Culture (02, 06)
 HUM1132 Women in the Humanities (06)
 HUM2500 Honors Colloquy (06)
 MCS2230 Multicultural America
 MUSC1115 Exploring our American Musical Heritage (06)
 PHIL2300 Political and Social Philosophy (05)
 PSCI2310 Ideas and Ideologies (09)
 PSYC2224 Social Psychology (05)
 PSYC2228 Cross-Cultural Psychology
 SOC1111 Intro to Sociology (02, 05)
 SOC2118 Sociology of Aging (02, 05)
 SOC2213 Sociology of the Family (05)
 SOC2216 Minority Group Relations (05)
 SOC2217 Rural Sociology (05)

SOC2220 Food, Culture and Society (05)
 WMST1130 Women's Studies (05)

AREA 8: Global Perspective

Complete one course

ANTH1100 Anthropology (05)
 ANTH1200 Medical Anthropology (05)
 ART1121 World of Art I (06)
 ART1122 World of Art II (06)
 CHIN1101 Introduction to Chinese
 ENGL2235 Intro to Literature: Drama (02, 06)
 ENGL2361 British Literature I (06)
 ENGL2362 British Literature II (06)
 FREN2211 Intermediate French I
 FREN2212 Intermediate French II
 GEOG1110 World Geography (05)
 GLST1121 Humanities Italy (06)
 GLST1126 Cultures of Italy and Greece II (06)
 GLST1500 Global Studies: International Internship
 GLST1510 Global Studies: Natural Science (03)
 HIST1110 Western Civilization: Ancient-1400 (05)
 HIST1111 Western Civilization: 1400-1600 (05)
 HIST1112 Western Civilization: 1600-1800 (05)
 HIST1113 Western Civilization: 20th Century (05)
 HIST1500 European Experience (05)
 HUM1105 Religion in the Humanities (06)
 HUM1120 Culture of Italy I (06)
 HUM1134 Global Perspectives for Women (06)
 HUM2230 World Cinema (06)
 HUM2236 Technology in the Humanities (02, 06)
 HUM2281 Culture of the British Isles (06)
 HUM2293 Field Experience: Europe (06)
 HUM2295 Field Experience: The East (06)
 MUSC1116 The World of Music (06)
 PHIL2224 Philosophy of Religion (02, 06)
 PHIL2240 Non-Western Philosophical Perspectives (06)
 PSCI2204 Comparative Government (05)
 PSCI2206 Global Politics (05)
 SPAN2211 Intermediate Spanish
 SPAN2212 Intermediate Spanish II

AREA 9: Ethical and Civic Responsibility

Complete one course

ECON2222 Microeconomics (05)
 ENGL2237 Intro to Literature: Short Prose (02, 06)
 MCOM1133 Modern Media
 PHIL1200 Applied and Professional Ethics (02)
 PHIL1201 Ethics (02, 06)
 PHIL2220 Environmental Ethics (10)
 PHIL2225 Bioethics (02)
 PSCI1120 American National Government (05)
 PSCI1130 State and Local Government (05)
 PSCI2210 Judicial Politics (05)
 PSCI2220 Introduction to Constitutional Theory (02, 05)
 PSCI2310 Ideas and Ideologies (07)
 PSYC1200 General Psychology (05)
 PSYC2222 Developmental Psychology (05)
 SOC1113 Social Problems (05)

AREA 10: People and the Environment

Complete one course

BIOL1107 Environmental Science Issues (02, 03)
 BIOL1108 Env Science Issues Lab (02, 03)
 BIOL1111 General Biology I (03)
 BIOL1161 Intro to Freshwater Biology (03)
 BIOL2010 General Ecology (03)
 ENGL2230 Environmental Literature (02, 06)
 ENGL2239 Nature Writers (02, 06)
 ENGL2324 Travel Literature (02, 06)
 PHIL2220 Environmental Ethics (09)
 PHYS1101 Physics & Environment (02, 03)
 PSYC1107 Environmental Psych (02, 05)
 PSYC2226 Behavior and Env Management (02, 05)
 SFP1100 Principles of Sustainability

AA Social Science Emphasis

AA 60 Credits

D F M E

The Associate of Arts degree with Emphasis in Social Science provides the necessary lower division coursework for transfer to a four-year major in sociology, social work or human services. Transferability of courses from Minnesota State Community and Technical College (M State) to public higher education systems in Minnesota is enhanced by transfer agreements that are in place. Coursework will transfer in its entirety to the Bachelor of Social Work at Minnesota State University Moorhead, and may transfer in part or entirety to other programs and/or postsecondary institutions.

Course #	Course Title	Crds
SPCH1114	Intro to Public Speaking.....	3
PSYC1200	General Psychology.....	3
BIOL1104	Biology of Human Concerns.....	3
ECON1150	Essentials of Economics.....	3
ENGL1102	College Writing II.....	3
ENGL1101	College Writing.....	3
PSCI1120	American National Government.....	3
SOC1111	Intro to Sociology.....	3
	MNTC Goal Area 2.....	3
	MNTC Goal Area 3.....	3
	MNTC Goal Area 4.....	3
	MNTC Goal Area 5.....	3
	MNTC Goal Area 6.....	6
	MNTC Goal Area 7.....	3
	MNTC Goal Area 8.....	3
	MNTC Goal Area 9.....	6
	MNTC Goal Area 10.....	3

Accounting

AS 60 Credits

F E

The A.S. in Accounting is a two-year degree in accounting designed both for the student who wishes 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
BUS1146	Personal Finance.....	3
BUS2150	Legal Environ of Business.....	3
BUS2204	Principles of Management.....	3
BUS2206	Principles of Marketing.....	3
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II.....	3
ACCT2213	Managerial Accounting.....	3
ACCT2255	Income Tax-Individual.....	3
ACCT2215	Computerized Acct App.....	3
ENGL1101	College Writing.....	3
BUS1120	Spreadsheet & Database Concepts.....	3
PSYC1200	General Psychology.....	3
ECON2210	Macroeconomics.....	3
ECON2222	Microeconomics.....	3
SOC1111	Intro to Sociology.....	3
PHIL1201	Ethics.....	3
	MN Transfer Elective.....	12

Accounting

Diploma 64 Credits

D M E

This major provides the knowledge and skills necessary to examine, analyze, interpret and correct accounting data for the purpose of preparing 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
GSSI1104	Human Relations.....	3
ACCT1101	Payroll.....	3
ACCT1108	Business Math/Calculators.....	3
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II.....	3
ACCT1120	Business Law.....	3
ACCT1124	Spreadsheet Applications.....	3
ACCT2215	Computerized Acct App.....	3
ACCT2216	QuickBooks.....	3
ACCT2620	Intermediate Accounting I.....	4
ACCT2622	Intermediate Accounting II.....	4

ACCT2213	Managerial Accounting.....	3
ACCT2255	Income Tax-Individual.....	3
ADMS2124	Computer Technology Information.....	3
GSCO1102	Applied Communications.....	3
CPTR1104	Intro to Computer Tech.....	3
GSWS1102	Contemporary Career Search.....	1
ACCT2201	Financial Accounting I Lab.....	1
ACCT2202	Financial Accounting II Lab.....	1
ACCT2203	Managerial Accounting Lab.....	1
	Technical Elective.....	10

Accounting

AAS 72 Credits

D M E

This major provides the knowledge and skills necessary to examine, analyze, interpret and correct accounting data for the purpose of preparing 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
ENGL1101	College Writing.....	3
ECON2210	Macroeconomics.....	3
SPCH1114	Intro to Public Speaking.....	3
ACCT1101	Payroll.....	3
ACCT1108	Business Math/Calculators.....	3
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II.....	3
ACCT1120	Business Law.....	3
ACCT1124	Spreadsheet Applications.....	3
ACCT2215	Computerized Acct App.....	3
ACCT2216	QuickBooks.....	3
ACCT2620	Intermediate Accounting I.....	4
ACCT2622	Intermediate Accounting II.....	4
ACCT2213	Managerial Accounting.....	3
ACCT2255	Income Tax-Individual.....	3
CPTR1104	Intro to Computer Tech.....	3
ACCT2201	Financial Accounting I Lab.....	1
ACCT2202	Financial Accounting II Lab.....	1
ACCT2203	Managerial Accounting Lab.....	1
	MN Transfer Elective.....	9
	Technical Elective.....	10

Accounting Clerk

Diploma 33 Credits

D M

This major provides the knowledge and skills necessary to perform routine calculating, journalizing, posting and verifying duties to maintain accounting records and to 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
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II.....	3
ACCT1124	Spreadsheet Applications.....	3
ACCT2215	Computerized Acct App.....	3
ACCT2255	Income Tax-Individual.....	3
GSCO1102	Applied Communications.....	3
CPTR1104	Intro to Computer Tech.....	3
ACCT2201	Financial Accounting I Lab.....	1
ACCT2202	Financial Accounting II Lab.....	1
	Technical Electives.....	4

Administrative Assistant, AAS

AAS 60 Credits

M

The Associate of Applied Science (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 effectively 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 higher-level skills of strong verbal, listening and writing skills; interpersonal skills and the ability to keep confidences; technology skills using and integrating a variety of software applications; developing organizational, time management, team building, customer service and soft skills; and developing critical thinking and problem-solving skills to create a positive office environment.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
ADMS1112	Desktop Publishing.....	3
ADMS1116	Business Communications I.....	3
ADMS1200	Keyboarding I/Keyboarding II.....	4
ADMS1120	Office Procedures.....	3
ADMS2212	Integrated Office Software Appl.....	3
ADMS2124	Computer Technology Information.....	3
ADMS1130	Office Software Applications.....	3
ACCT1012	Principles of Bookkeeping.....	3
ADMS1128	Records/Database Management.....	3
ADMS2216	Business Communications II.....	3
ADMS1300	Word Processing/Advanced Word.....	4
COMM1120	Introduction to Public Speaking.....	3
	MN Transfer Elective.....	6
	Technical Electives.....	10
	MNTC Goal Area 5.....	3

Administrative Management Technology

AAS 66 Credits

D

The Administrative Management Technology program is designed for students who after completion of this degree may seek employment as office managers, office analysts, office assistants, customer service managers and other business-related employment. In addition, graduates may continue their study in a baccalaureate degree program in careers such as computers, operations management or business administration. This degree is also meant for students who wish to enhance their computer skills in today's business world via international industry certifications to help further their career. Students should consult an advisor/counselor for transfer opportunities to various Minnesota colleges.

Course #	Course Title	Crds
BUS1141	Introduction to Business.....	3
CPTR1104	Intro to Computer Tech.....	3
ACCT2211	Financial Accounting I.....	3
ADMS1116	Business Communications I.....	3
ENGL1101	College Writing.....	3
ADMS1112	Desktop Publishing.....	3
PHIL1201	Ethics.....	3
PSYC1200	General Psychology.....	3
SPCH1114	Intro to Public Speaking.....	3
INTD1113	Dreamweaver.....	3
MKTG1110	Customer Service.....	3
ADMS2124	Computer Technology Information.....	3
ADMT2230	Administrative Project Management.....	2
GWS1102	Contemporary Career Search.....	1
ADMS1100	Keyboarding I.....	3
ADMS1110	Word Processing.....	3
ADMT1173	Microsoft Office Access Certification.....	1
ADMT1174	Microsoft Office PowerPoint Certification.....	1
ADMT2224	Applied Event Management.....	1
ACCT1124	Spreadsheet Applications.....	3
ADMT2222	Event Planning.....	2
	Technical Elective.....	10
	MN Transfer Elective.....	6

Administrative Support

Diploma 33 Credits

M WE

The Administrative Support diploma program will prepare students to provide a wide range of office tasks for a variety of entry-level positions in the business office setting. Students will develop skills in communications, software applications, office procedures, bookkeeping, filing and document processing to create a positive office environment.

Course #	Course Title	Crds
ACCT1012	Principles of Bookkeeping.....	3
ADMS1200	Keyboarding I/Keyboarding II.....	4
ADMS1128	Records/Database Management.....	3
ADMS1116	Business Communications I.....	3
ADMS1120	Office Procedures.....	3
ADMS1300	Word Processing/Advanced Word Processing.....	4
ADMS1130	Office Software Applications.....	3

ADMS2216	Business Communications II.....	3
	MN Transfer Elective.....	3
	Technical Electives.....	4

Administrative Support -

Bookkeeping Emphasis

Diploma 49 Credits

M

This emphasis is designed to prepare students to perform bookkeeping and payroll procedures in addition to the job responsibilities that are required for administrative support.

Course #	Course Title	Crds
ACCT1101	Payroll.....	3
ACCT2211	Financial Accounting I.....	3
ACCT1012	Principles of Bookkeeping.....	3
ACCT1124	Spreadsheet Applications.....	3
ACCT2215	Computerized Acct App.....	3
ADMS1100	Keyboarding I.....	3
ADMS1102	Keyboarding II.....	3
ADMS1112	Desktop Publishing.....	3
ADMS1116	Business Communications I.....	3
ADMS1120	Office Procedures.....	3
ADMS1122	Machine Transcription.....	2
ADMS1128	Records/Database Management.....	3
CPTR1104	Intro to Computer Tech.....	3
GWS1102	Contemporary Career Search.....	1
GSSI1104	Human Relations.....	3
ACCT2201	Financial Accounting I Lab.....	1
	Technical Electives.....	12

Administrative Support -

Microcomputer Emphasis

Diploma 49 Credits

M

This emphasis prepares students to produce creative brochures, newsletters, announcements and technical manuals using various professional publishing and word processing software programs in addition to the job responsibilities that are required for administrative support.

Course #	Course Title	Crds
ACCT1012	Principles of Bookkeeping.....	3
ACCT1124	Spreadsheet Applications.....	3
ADMS1100	Keyboarding I.....	3
ADMS1102	Keyboarding II.....	3
ADMS1110	Word Processing.....	3
ADMS1112	Desktop Publishing.....	3
ADMS1116	Business Communications I.....	3
ADMS1120	Office Procedures.....	3
ADMS1122	Machine Transcription.....	2
ADMS1128	Records/Database Management.....	3
ADMS2212	Integrated Office Software Applications.....	3
ADMS2124	Computer Technology Information.....	3
CPTR1104	Intro to Computer Tech.....	3
CPTR1106	Microcomputer Databases.....	3
GWS1102	Contemporary Career Search.....	1
GSSI1104	Human Relations.....	3
	Technical Electives.....	4

American Sign Language Studies

Certificate 18 Credits

M

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 fields and prepares students for continued educational studies in more advanced preparation for ASL Interpreter Certification. This program does not prepare students to become interpreters.

Course #	Course Title	Crds
ASL1111	ASL & Deaf Culture I.....	3
ASL1112	ASL & Deaf Culture II.....	3
SPCH2216	Intercultural Comm.....	3

ASL1113	ASL & Deaf Culture III.....	4
ASL1114	ASL & Deaf Culture IV.....	4
CPTR1100	Fund Computer Concepts.....	1

Architectural Technology

AAS 72 Credits

D

Men and women 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 also will be enrolled in general education courses selected to complement their technical education. This degree can allow students to continue their education in a number of baccalaureate programs at four-year institutions.

Course #	Course Title	Crds
BLDG1122	Construction Estimating II.....	2
ENGL1101	College Writing.....	3
CPTR1104	Intro to Computer Tech.....	3
BLDG1114	Blueprint Reading I.....	2
ENGR1100	Project Management.....	1
ARCH1126	Residential Project I.....	3
ARCH1122	CADD for Architecture.....	4
CONM2206	Building Codes.....	2
BLDG1120	Construction Estimating I.....	2
ARCH2236	Presentation.....	2
ARCH2226	Residential Project II.....	4
ARCH2244	Commercial Projects.....	4
ARCH2250	Project Administration.....	2
ARCH2230	Mechanical and Electrical Integration.....	2
CONM1124	Building Systems.....	3
CADD1102	Fundamentals of CADD.....	4
ENGR1118	Engineering Applications.....	3
ENGR1126	Engineering Graphics.....	3
SPCH1114	Intro to Public Speaking.....	3
CIVL1102	Survey I: Fundamentals.....	2
PSCI1130	State and Local Government.....	3
	MN Transfer Elective.....	9
	Technical Electives.....	6

Art

AFA 60 Credits

F

The 60-credit AFA in Art provides a means for art students to both pursue a four-year degree and/or a career in art. The AFA in Art emphasizes a visual arts focus and offers students preparation for fine arts study at the university level. The AFA in Art at M State provides students the skills to help them develop into professional artists, and it ensures that students will have the necessary coursework to prepare for advanced studies in art. Coursework must be represented from at least six of the 10 MnTC goal areas.

Course #	Course Title	Crds
ART2260	Art, Portfolio Design & Professional Development.....	1
ART1116	Pastel Drawing.....	3
ART1107	Foundations of Art, 2-D.....	3
ART1108	Foundations of Art, 3-D.....	3
ART1111	Beg Drawing.....	3
ART1113	Drawing II.....	3
ART1112	Beg Painting.....	3
ART1140	Handbuilt Ceramics.....	3
ART1121	World of Art I.....	3
ART1122	World of Art II.....	3
ENGL1101	College Writing.....	3
COMM1120	Introduction to Public Speaking.....	3
PSYC1200	General Psychology.....	3
	MN Transfer Elective.....	6
	MNTC Goal Area 3.....	6
	MN Transfer Elective.....	20

Auto Body Collision Technology

Diploma 65 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 windshields. 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.

Course #	Course Title	Crds
ABCT1100	Intro to Auto Body.....	2
ABCT1102	Auto Body Off Car Repair.....	4
ABCT1104	Auto Body Lab I.....	3
ABCT1106	Intro to Refinishing.....	2
ABCT1110	Panel Replacement.....	2
ABCT1112	Auto Body Refinishing.....	4
ABCT1114	Auto Body Lab II.....	4
ABCT1116	Glass and Trim.....	2
ABCT2206	Mechanical Components I.....	2
ABCT2208	Major Collision Lab I.....	3
ABCT2214	Major Collision Lab II.....	5
ABCT2222	Auto Body Internship.....	1
ABCT1118	Basic Electrical.....	2
ABCT2210	Collision Damage Repair.....	5
ABCT2212	Mechanical Components II.....	2
ABCT2216	Spot Repair & Paint Blending.....	2
ABCT2204	Body Shop Operation.....	3
ABCT2202	Unibody/Frame Alignment.....	5
TRNS1118	Welding I.....	2
TRNS1120	Welding II.....	1
COMM1100	Power and Communications in Human Relations.....	3
	MN Transfer Elective.....	3
	Sociology Elective.....	3

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 windshields. 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.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
PHIL1201	Ethics.....	3
PSYC1200	General Psychology.....	3
ABCT1100	Intro to Auto Body.....	2
ABCT1102	Auto Body Off Car Repair.....	4
ABCT1104	Auto Body Lab I.....	3
ABCT1106	Intro to Refinishing.....	2
ABCT1110	Panel Replacement.....	2
ABCT1112	Auto Body Refinishing.....	4
ABCT1114	Auto Body Lab II.....	4
ABCT1116	Glass and Trim.....	2
ABCT1118	Basic Electrical.....	2
ABCT2202	Unibody/Frame Alignment.....	5
ABCT2206	Mechanical Components I.....	2
ABCT2208	Major Collision Lab I.....	3
ABCT2210	Collision Damage Repair.....	5
ABCT2212	Mechanical Components II.....	2
ABCT2216	Spot Repair & Paint Blending.....	2
ABCT2222	Auto Body Internship.....	1
TRNS1118	Welding I.....	2
TRNS1120	Welding II.....	1
	MN Transfer Elective.....	11
	Technical Electives.....	4

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 in Automotive Service Technology will choose from diploma and AAS degree programs. 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 have a variety of opportunities including drive line technician, driveability technician, alignment and suspension specialist, transmission specialist, service advisor and manager. Opportunities for advancement may include factory and dealer representatives, management and self-employment.

Course #	Course Title	Crds
AMST2292	Internship	1
AMST1102	Alignment & Suspension I	3
AMST1126	Engines II	3
AMST1105	Brakes I	3
AMST1122	Engines I	3
AMST2201	Alignment & Suspension II	3
AMST2211	Exhaust Analysis Fuel Sys	3
AMST2206	Body Elec/Mechanical I	3
AMST2209	Body Elec/Mechanical II	3
AMST2214	Elec Powertrain Cntrl I	3
AMST2233	Auto Transmission I	3
AMST2218	Elec Powertrain Cntrl II	3
AMST2237	Auto Transmission II	3
AMST2220	Ignition Systems	3
COMM1100	Power and Communications in Human Relations	3
TRNS1102	Introduction to Transportation	2
AMST1109	Starting & Charging	3
AMST1132	Drive Trains I	3
AMST1136	Drive Trains II	3
AMST2240	Heating Ventilation A/C	3
AMST1111	Automotive Electronics	3
AMST2225	Brakes II	3
	MN Transfer Elective	3
	Psychology Elective	3

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 in Automotive Service Technology will have option to choose from diploma and AAS degree programs. 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 have a variety of opportunities including drive line technician, driveability technician, alignment and suspension specialist, transmission specialist, service advisor and manager. Opportunities for advancement may include factory and dealer representatives, management and self-employment.

Course #	Course Title	Crds
AMST2233	Auto Transmission I	3
COMM1100	Power and Communications in Human Relations	3
PHIL1201	Ethics	3
AMST1132	Drive Trains I	3
AMST1102	Alignment & Suspension I	3
AMST1122	Engines I	3
AMST1105	Brakes I	3
AMST1111	Automotive Electronics	3
AMST2211	Exhaust Analysis Fuel Sys	3
AMST2220	Ignition Systems	3
AMST2237	Auto Transmission II	3
AMST2240	Heating Ventilation A/C	3
AMST2214	Elec Powertrain Cntrl I	3
AMST2225	Brakes II	3
AMST2218	Elec Powertrain Cntrl II	3
AMST2209	Body Elec/Mechanical II	3
TRNS1102	Introduction to Transportation	2
AMST1109	Starting & Charging	3
AMST1126	Engines II	3
AMST2292	Internship	1
AMST2206	Body Elec/Mechanical I	3
	MN Transfer Elective	9
	Psychology Elective	3

Billing Compliance Specialist

Certificate 25 Credits

E

Billing compliance specialists supervise medical coders, audit medical records and provide feedback on appropriate code selection to physicians and coding staff. They are responsible for ensuring that government and third-party (insurance companies) guidelines are followed and for writing compliance plans and associated procedures.

Course #	Course Title	Crds
ADMM2266	Auditing the Medical Record- Evaluation and Management Services	3
ADMM2262	Auditing the Medical Record-Surgical and Ancillary Services	3
ADMM2122	Medical Office Management	3
ADMM2154	Hospital Billing	2
ADMM2264	Auditing the Medical Record-Facility	2
ADMM2280	Compliance Plan Development	3
HITM1155	Medicolegal Aspects	3
ADMM2282	Compliance Plan Presentations	3
ENGL1220	Professional & Technical Writing	3

Bio-fuels Technology

AAS 72 Credits

M

The Bio-fuels Technology program is designed to prepare students to work in the emerging field of bio-renewable energy production. The first two semesters consists of general education courses in science, math and communications along with an introductory electronics course and two process control and instrumentation courses. Many of the general education classes are available online. In the second half of the program, students will focus on the major technical elements of laboratory instrumentation, bio-fuels production, plant operations and controls systems, along with industry internship experiences.

Course #	Course Title	Crds
NANO2205	Laboratory Instrumentation	6
BIOL2220	General Microbiology	4
BIOL1111	General Biology I	4
CHEM1115	Introduction to Organic and Biochemistry	4
CHEM1100	Fund Concepts Chemistry	3
ENGL1101	College Writing	3
MATH1114	College Algebra	4
CPTR1104	Intro to Computer Tech	3
NANO2207	Nanobiotechnology and Nanobiomedicine	3
ENGL1220	Professional & Technical Writing	3
NANO2211	Manufacturing Quality Assurance	3
BIOF1101	Fundamentals of Alternative Energy & Environment I	3
BIOF1102	Fundamentals of Alternative Energy & Environment II	3
ELEC1150	Introduction to Electronics	4
BIOF2201	Fundamentals of Biofuels Production	3
ELEC2255	Process Measurement and Control Valves	4
ELEC2254	Instrumentation and Control Systems	5
BIOF2202	Pilot Plant Operation/Adv Process Control	3
PHIL2225	Bioethics	3

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 a counselor or advisor to identify transfer options. A visit to the intended transfer institution by the spring of the first year is highly recommended.

Course #	Course Title	Crds
BIOL2240	Genetics	4
PSYC1200	General Psychology	3
SPCH1114	Intro to Public Speaking	3
BIOL1111	General Biology I	4
BIOL1112	General Biology II	4
CHEM1111	General Inorganic Chemistry I	3
CHEM1112	General Inorganic Chemistry II	5
PHYS1401	College Physics I	4
PHYS1402	College Physics II	4
MATH1115	Functions/Trigonometry	4

MATH1114	College Algebra.....	4
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
BIOL2220	General Microbiology.....	4
BIOL2010	General Ecology.....	4
MATH1213	Introduction to Statistics.....	4

Biological Sciences - Fergus Falls

AS 60 Credits

F

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 a counselor or advisor to identify transfer options. A visit to the intended transfer institution by the spring of the first year is highly recommended.

Course #	Course Title	Crds
CHEM2224	Organic Chemistry I.....	5
CHEM2225	Organic Chemistry II.....	5
BIOL1111	General Biology I.....	4
ENGL1101	College Writing.....	3
MATH1114	College Algebra.....	4
BIOL1112	General Biology II.....	4
ENGL1102	College Writing II.....	3
MATH1115	Functions/Trigonometry.....	4
CHEM1111	General Inorganic Chemistry I.....	5
PHYS1401	College Physics I.....	4
CHEM1112	General Inorganic Chemistry II.....	5
BIOL2240	Genetics.....	4
PHYS1402	College Physics II.....	4
	MN Transfer Elective.....	6

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.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech.....	3
BIOL1111	General Biology I.....	4
BIOL1115	Introduction to Biotechnology.....	3
CHEM1111	General Inorganic Chemistry I.....	5
ENGL1101	College Writing.....	3
BIOL2220	General Microbiology.....	4
NANO1197	Industry Internship Experience I.....	1
MATH1118	Precalculus.....	5
CHEM1115	Introduction to Organic and Biochemistry.....	4
MATH1213	Introduction to Statistics.....	4
ENGL1215	Professional & Technical Writing.....	3
PHYS1401	College Physics I.....	4
NANO2207	Nanobiotechnology and Nanobiomedicine.....	3
BIOT2210	Biotechnology Methods I.....	3
BIOT2220	Biotechnology Methods II.....	3
BIOT2230	Fundamentals of Bioprocessing.....	3
NANO2211	Manufacturing Quality Assurance.....	3
NANO2231	Industry Internship Experience II.....	2
PHIL2225	Bioethics.....	3

Business

AS 60 Credits

M E

The Business AS degree is a flexible degree that is designed for students who want to continue their education or enter the workforce in a business-related career. This 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 placed on contemporary business practices through coursework in management, marketing, economics, accounting, technology and communications.

Course #	Course Title	Crds
ACCT2213	Managerial Accounting.....	3
BUS1120	Spreadsheet & Database Concepts.....	3
MATH1114	College Algebra.....	4
SOC1111	Intro to Sociology.....	3
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
SPCH1114	Intro to Public Speaking.....	3
MATH1213	Introduction to Statistics.....	4
ECON2210	Macroeconomics.....	3
ECON2222	Microeconomics.....	3
BUS2204	Principles of Management.....	3
ACCT2212	Financial Accounting II.....	3
ACCT2211	Financial Accounting I.....	3
MATH1122	Applied Calc/Linear Alg.....	3
BUS2206	Principles of Marketing.....	3
BUS2220	Global Business.....	3
	Technical Electives.....	9
	MN Transfer Elective.....	1

Business - Fergus Falls

AS 60 Credits

F

The Business AS degree is a flexible degree that is designed for students who want to continue their education or enter the workforce in a business related career. This degree is 60 credits in length, including 30 semester credits in general education from six of the ten 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 placed on contemporary business practices through coursework in management, marketing, economics, accounting, technology, and communications.

Course #	Course Title	Crds
ACCT2211	Financial Accounting I.....	3
ENGL1101	College Writing.....	3
MATH1114	College Algebra.....	4
BUS1120	Spreadsheet & Database Concepts.....	3
ACCT2212	Financial Accounting II.....	3
ENGL1102	College Writing II.....	3
MATH1213	Introduction to Statistics.....	4
SOC1111	Intro to Sociology.....	3
ECON2210	Macroeconomics.....	3
ACCT2213	Managerial Accounting.....	3
BUS2204	Principles of Management.....	3
BUS2220	Global Business.....	3
MATH1122	Applied Calc/Linear Alg.....	3
BUS2206	Principles of Marketing.....	3
ECON2222	Microeconomics.....	3
SPCH1114	Intro to Public Speaking.....	3
	MN Transfer Elective.....	1
	Technical Electives.....	9

Business Entrepreneurship

AAS 67 Credits

D E

As an entrepreneur, you can create your own path to success and work to make your dream a reality. This degree teaches students the skills and behaviors necessary to contribute to personal and business success. This program 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, to grow an existing business or pursue an advanced degree.

Course #	Course Title	Crds
ACCT2211	Financial Accounting I.....	3
ADMS1116	Business Communications I.....	3
BUS1141	Introduction to Business.....	3
CPTR1104	Intro to Computer Tech.....	3
ENGL1101	College Writing.....	3
ACCT1108	Business Math/Calculators.....	3
ENTR1100	Introduction to Entrepreneurship.....	3
SPCH1114	Intro to Public Speaking.....	3
MKTG2200	Prin of Management.....	3

ACCT1120	Business Law	3
ENR1400	Opportunity Analysis	3
MKTG1100	Prin of Marketing	3
ACCT1124	Spreadsheet Applications.....	3
BMGT1112	Business Plan Development	2
GSWS1102	Contemporary Career Search.....	1
ECON2210	Macroeconomics.....	3
PSYC1200	General Psychology	3
ENR2220	Business Ethics/Professionalism.....	3
ENR2200	Entrepreneurial Field Studies	3
ADMT1174	Microsoft Office PowerPoint Certification	1
	MN Transfer Elective	6
	Technical Electives.....	6

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 #	Course Title	Crds
ACCT1108	Business Math/Calculators	3
BUS1120	Spreadsheet & Database Concepts	3
BUS2204	Principles of Management	3
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II	3
ACCT2213	Managerial Accounting	3
BUS2202	Mgmt Information Sys	3
BUS1143	Office Procedures	3
PSYC1200	General Psychology	3
ECON2210	Macroeconomics.....	3
ECON2222	Microeconomics.....	3
SOC1111	Intro to Sociology.....	3
PHIL1201	Ethics	3
BUS2150	Legal Environ of Business	3
BUS2206	Principles of Marketing.....	3
ENGL1101	College Writing.....	3
	MN Transfer Electives	6

Business Management/Ownership Diploma 32 Credits

D

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 own 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 which 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.

Course #	Course Title	Crds
ACCT2211	Financial Accounting I.....	3
BUS2206	Principles of Marketing	3
ENR1400	Opportunity Analysis	3
ACCT1124	Spreadsheet Applications.....	3
ACCT1108	Business Math/Calculators	3
BMGT1112	Business Plan Development	2
CPTR1104	Intro to Computer Tech	3
ENR2200	Entrepreneurial Field Studies	3
BUS2204	Principles of Management	3
MKTG1110	Customer Service.....	3
	MN Transfer Elective	3

Business: Management, Marketing and Sales Diploma 70 Credits

M

The Business Management, Marketing and Sales diploma places an emphasis on marketing, management and other business courses. General education courses are not required.

This program is designed to prepare students to succeed in the marketplace of the 21st century. This major is designed to provide students with the essential skills necessary for a variety of careers in the sales, marketing and management fields. Curriculum includes instruction in the following areas: sales, marketing, research, customer service and small business planning. Emphasis is placed on developing skills in management decision-making, interpersonal and communication skills, problem solving and technology skills.

Students have the opportunity to apply concepts they have learned in introductory marketing and management courses. Particular emphasis is placed on applying these skills through the use of computer technology.

Course #	Course Title	Crds
SPCH1114	Intro to Public Speaking.....	3
ACCT1108	Business Math/Calculators	3
ACCT1120	Business Law	3
ACCT1012	Principles of Bookkeeping.....	3
ENGL1101	College Writing	3
BUS2206	Principles of Marketing.....	3
MKTG1116	Advertising and Promotion.....	3
MKTG2234	Computer Marketing Applications.....	3
MKTG1110	Customer Service	3
MKTG1106	Professional Selling	3
ECON1150	Essentials of Economics.....	3
MKTG1112	Retail Management.....	3
MKTG2204	Advanced Professional Selling.....	3
MKTG2222	Human Resource Mgmt	3
MKTG2230	Marketing Research	3
MKTG2400	Marketing Management	4
MKTG1130	Leadership Ethics	3
MKTG2236	Small Business Mgmt	3
BUS2204	Principles of Management	3
	Technical Electives.....	12

Business: Management, Marketing and Sales AAS 70 Credits

ME

The Business Management, Marketing and Sales AAS major includes marketing, management and other business courses as well as general education courses.

This program is designed to prepare students to succeed in the marketplace. This major is designed to provide students with the skills necessary for a variety of careers in the sales, marketing and management fields. Curriculum includes instruction in the following areas: sales, marketing, research, customer service and small business planning. Emphasis is placed on developing skills in management decision-making, interpersonal and communication skills, problem solving and technology skills.

In the AAS, students are also required to complete 18 credits of general education courses. Two of these courses are College Writing I and Introduction to Public Speaking. The student chooses the remaining 12 credits of general education.

Course #	Course Title	Crds
ENGL1101	College Writing	3
SPCH1114	Intro to Public Speaking	3
ACCT1108	Business Math/Calculators	3
ACCT1120	Business Law	3
BUS2204	Principles of Management	3
BUS2206	Principles of Marketing.....	3
ACCT1012	Principles of Bookkeeping.....	3
MKTG1106	Professional Selling	3
MKTG1110	Customer Service	3
MKTG1112	Retail Management.....	3
MKTG1116	Advertising and Promotion.....	3
BUS2220	Global Business	3
MKTG2204	Advanced Professional Selling.....	3
MKTG2230	Marketing Research	3
MKTG2400	Marketing Management	4
MKTG2214	E-Marketing	3
MKTG2234	Computer Marketing Applications.....	3
ECON2222	Microeconomics.....	3
	Technical Electives.....	6
	MN Transfer Elective	9

Carpentry Diploma 64 Credits M

The Carpentry program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework will provide the student with 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.

Course #	Course Title	Crds
BLDG1114	Blueprint Reading I	2
BLDG1120	Construction Estimating I	2
CARP1102	Prin of Framing	3
CARP1104	Framing I	6
CARP2106	Footings & Foundations	2
CARP1108	Interior Finish I	4
CARP1110	Intro to Cabinet Building	3
CARP1112	Exterior Finish I	3
CARP2202	Prin of Framing II	3
CARP2204	Concrete Technology	2
CARP2206	Adv Framing Applications	6
CARP2208	Exterior Finish II	3
CARP2210	Interior/Exterior Finish Prin	3
CARP2212	Interior Finish II	4
CARP2220	Carpentry Internship	3
CPTR1104	Intro to Computer Tech	3
GWS1102	Contemporary Career Search	1
GSMS1000	Technical Mathematics	3
GSMS1110	First Aid / CPR	1
	General Studies Elective	1
	Technical Electives	12

Carpentry AAS 72 Credits M

The Carpentry program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework will provide the student with 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 provides graduates with skills required of a carpenter in a variety of building construction settings common in both rural and metropolitan areas.

Course #	Course Title	Crds
ENGL1101	College Writing	3
PHIL1201	Ethics	3
PSYC1200	General Psychology	3
SPCH1114	Intro to Public Speaking	3
BLDG1114	Blueprint Reading I	2
BLDG1120	Construction Estimating I	2
CARP1102	Prin of Framing	3
CARP1104	Framing I	6
CARP2106	Footings & Foundations	2
CARP1108	Interior Finish I	4
CARP1110	Intro to Cabinet Building	3
CARP1112	Exterior Finish I	3
CARP2202	Prin of Framing II	3
CARP2206	Adv Framing Applications	6
CARP2208	Exterior Finish II	3
CARP2210	Interior/Exterior Finish Prin	3
CARP2212	Interior Finish II	4
CARP2220	Carpentry Internship	3
	Technical Electives	10
	MN Transfer Elective	8

Carpentry - Residential Diploma 34 Credits WE

This program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework will provide the student with a mix of technical education, general studies, theory and hands-on learning experiences. The student progresses from basic skills to those required of a carpenter. General areas of study include

building codes, blueprint reading, estimating, site layout, concrete, framing, interior and exterior finish, cabinet construction and installation, and decks. The Residential 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.

Course #	Course Title	Crds
CARP2218	Soffits, Gutters, Gables	2
BLDG1114	Blueprint Reading I	2
BLDG1120	Construction Estimating I	2
CARP1102	Prin of Framing	3
CARP1104	Framing I	6
CARP2106	Footings & Foundations	2
CARP1108	Interior Finish I	4
CARP1112	Exterior Finish I	3
CARP2214	Exterior Siding	2
CARP2216	Deck Construction	2
CARP1110	Intro to Cabinet Building	3
	General Studies Electives	3

Carpentry Assisting Certificate 30 Credits M

The Carpentry program prepares the student with skills and knowledge for a career in residential carpentry. The program coursework will provide the student with 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 provides graduates with skills required of a carpenter in a variety of building construction settings common in both rural and metropolitan areas.

Course #	Course Title	Crds
CARP1102	Prin of Framing	3
CARP1104	Framing I	6
CARP2106	Footings & Foundations	2
CARP1108	Interior Finish I	4
CARP1110	Intro to Cabinet Building	3
CARP1112	Exterior Finish I	3
CARP2220	Carpentry Internship	3
GSMS1110	First Aid / CPR	1
GSMS1000	Technical Mathematics	3
	Technical Electives	2

Carpentry Science Diploma 33 Credits W

The Carpentry Science program of study gives the students skills and knowledge to pursue a career in residential carpentry. The students will have hands-on experience along with classroom training in all aspects of building from the ground up. Courses in blueprint reading, estimating, cabinetmaking, building skills and principles of finishing will prepare the student to enter the workforce in a variety of carpentry-related jobs. Energy efficiency and green building will be included in the course work.

Course #	Course Title	Crds
BLDG1114	Blueprint Reading I	2
CARP1103	Building Skills - Lecture	3
CARP1133	Building Skills - Lab	9
CPTR1104	Intro to Computer Tech	3
BLDG1120	Construction Estimating I	2
CARP1107	Principles of Finishing - Lecture	2
CARP1137	Principles of Finishing - Lab	9
CARP1110	Intro to Cabinet Building	3

Child Care and Education - Level II Certificate 24 Credits D WE

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.

Course #	Course Title	Crds
CDEV2246	Foundations in Literacy	3
CPTR1104	Intro to Computer Tech	3

CDEV1105	Development/Guidance.....	3
CDEV1107	Intro to Early Educ.....	3
CDEV2200	Integrating Play.....	3
CDEV2229	Imaginative Learning.....	3
CDEV2244	Parent Professional Relations.....	3
CDEV2236	Occupational Experience.....	1
GSWS1102	Contemporary Career Search.....	1
GSMS1110	First Aid / CPR.....	1

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, networking media, router configuration, switching, VLANs, routing protocols and WAN links and services. The instructor will evaluate computer skills necessary to enter this certificate program. Students should have good reading and study skills, basic computer literacy and awareness of the Internet. Prior experience with computer hardware, binary math and basic electronics desired but not required. Background in cabling is beneficial. Upon completion of this certificate, the student will be able to take the Cisco CCNA and CompTIA Network+ certification exams offered through a VUE or Prometric testing center.

Course #	Course Title	Crds
CPTR1108	CISCO 1.....	3
CPTR1118	CISCO 2.....	3
CPTR2200	CISCO 3.....	3
CPTR2208	CISCO 4.....	3

Civil Engineering Technology

AAS 72 Credits

D

Men and women 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 that include highways, bridges, airports, structures, water treatment and distribution systems, and waste water collection and treatment systems. Opportunities are available with state, county and city transportation 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 allow students to continue their education in a number of baccalaureate programs at four-year institutions.

Course #	Course Title	Crds
CIVL1119	Survey II: Land Surveys.....	3
CIVL2210	Road Design.....	3
CPTR1104	Intro to Computer Tech.....	3
PSCI1130	State and Local Government.....	3
CIVL2240	Introduction to Geographic Information Systems.....	3
SPCH1114	Intro to Public Speaking.....	3
CADD1102	Fundamentals of CADD.....	4
CIVL1138	CADD II: Plan Layout.....	3
CIVL2238	CADD III: Project Design.....	3
CIVL2230	Civil Engineering Technology Internship.....	3
CONM2204	Materials Testing.....	3
ENGL1101	College Writing.....	3
ENGR1118	Engineering Applications.....	3
ENGR1126	Engineering Graphics.....	3
CIVL2234	Utility Design.....	3
CIVL2209	Construction Inspection.....	3
CIVL2232	Survey III: Legal Surveys.....	3
ENGR1100	Project Management.....	1
CIVL1102	Survey I: Fundamentals.....	2
BLDG1114	Blueprint Reading I.....	2
	MN Transfer Elective.....	9
	Technical Electives.....	6

Computer & Network Technology

AAS 70 Credits

W 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, 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 requirement for vendor certification.

Course #	Course Title	Crds
CPTR2236	Network Security.....	3
ENGL1101	College Writing.....	3
PHIL1201	Ethics.....	3
MATH0090	Introductory Algebra.....	3
PSYC1200	General Psychology.....	3
SPCH1114	Intro to Public Speaking.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR1108	CISCO 1.....	3
CPTR1110	Visual Basic Program I.....	3
CPTR1118	CISCO 2.....	3
CPTR2258	Microcomputer System Projects.....	2
CPTR1148	Microcomputer Operating System.....	3
CPTR2200	CISCO 3.....	3
CPTR2208	CISCO 4.....	3
CPTR2245	Enterprise Network Technologies.....	3
CPTR2272	Network Operating Systems.....	3
CPTR2282	E-mail Administration.....	3
GSWS1102	Contemporary Career Search.....	1
CPTR1104	Intro to Computer Tech.....	3
CPTR2224	Linux I.....	3
CVNP2212	Voice Over IP and IP Telephony.....	4
CSEC2204	Managing Directory Services.....	3
CPTR1125	IT Essentials.....	3
	Technical Electives.....	6
	MN Transfer Elective.....	6

Computer & Network Technology - Online

Diploma 31 Credits

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, 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 requirement for vendor certification.

Course #	Course Title	Crds
CPTR2236	Network Security.....	3
SOC1111	Intro to Sociology.....	3
CPTR2224	Linux I.....	3
CPTR1125	IT Essentials.....	3
CPTR1104	Intro to Computer Tech.....	3
CPTR1148	Microcomputer Operating System.....	3
CPTR1108	CISCO 1.....	3
GSWS1102	Contemporary Career Search.....	1
CPTR1118	CISCO 2.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR2272	Network Operating Systems.....	3

Computer & Network Technology - Wadena

Diploma 31 Credits

W

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, 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 requirement for vendor certification.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech.....	3
CPTR1108	CISCO 1.....	3
CPTR1148	Microcomputer Operating System.....	3

SOC1111	Intro to Sociology.....	3
CPTR1125	IT Essentials.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR2272	Network Operating Systems.....	3
CPTR2236	Network Security.....	3
CPTR1118	CISCO 2.....	3
GSWS1102	Contemporary Career Search.....	1
	Technical Electives.....	3

Computer Network 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, 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 requirement for vendor certification.

Course #	Course Title	Crds
CPTR2236	Network Security.....	3
CSEC2210	Security Breaches and Countermeasures.....	3
CSEC2212	Web Security.....	3
CSEC2228	Network Defense.....	3

Computer Network 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 LAN and WAN technologies utilizing current hardware and software. Emphasis is placed on identifying and implementing appropriate security policies and procedures that meet the unique and dynamic needs of information systems in businesses of various types and sizes.

Because new information security threats continually stimulate demand for workers in this specialized field, job growth is expected to climb at a rate faster than average as compared to other occupations. The computer networking and security skills students acquire in this program help graduates obtain a rewarding career in this highly challenging field.

Course #	Course Title	Crds
MATH0090	Introductory Algebra.....	3
CSEC1102	Careers in Information Systems.....	1
CPTR2224	Linux I.....	3
CPTR1108	CISCO 1.....	3
PHIL1201	Ethics.....	3
CSEC1110	Fundamentals of IT Security.....	3
CPTR2272	Network Operating Systems.....	3
CPTR1118	CISCO 2.....	3
PSYC1200	General Psychology.....	3
ENGL1101	College Writing.....	3
CSEC2202	Introduction to Wireless Networking.....	3
CSEC2218	Disaster Recovery.....	2
CSEC2204	Managing Directory Services.....	3
CPTR2200	CISCO 3.....	3
CSEC2210	Security Breaches and Countermeasures.....	3
SPCH1114	Intro to Public Speaking.....	3
CSEC2212	Web Security.....	3
CPTR2208	CISCO 4.....	3
CPTR2234	Linux II.....	3
CSEC2228	Network Defense.....	3
CSEC2222	Network Security Design.....	3
CPTR2282	E-mail Administration.....	3
CPTR1100	Fund Computer Concepts.....	1
	MN Transfer Elective.....	6

Computer Programming

AAS 70 Credits

M E

This program provides the programming skills needed in computer application development, database management, computer systems, operations and data communications. Students learn to design, write, code, document and implement computer programs for various computer platforms. They learn at least one minicomputer operating system, one command level language, one database management system and programming languages.

The program prepares students to design and develop computer hardware/software systems as well as design information management systems. It includes the study of languages, software design, science and information flow and processing. Students study the design of mathematical and simulations models and large-scale programs used for processing and retrieving information.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
SPCH1114	Intro to Public Speaking.....	3
CPTR1104	Intro to Computer Tech.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR1110	Visual Basic Program I.....	3
CPTR1112	Visual Basic Program II.....	3
CPTR1114	COBOL Programming I.....	3
CPTR1128	RPG/OS400 I.....	4
CPTR1138	Information Systems.....	3
CPTR1166	Word Processing and Spreadsheets.....	4
CPTR2228	RPG/OS400 II.....	4
CPTR2220	COBOL Programming II.....	3
CPTR2230	Structured Query Language.....	3
CPTR2242	Java Programming.....	3
CPTR2252	Microcomputer Systems Project.....	3
GSWS1102	Contemporary Career Search.....	1
CPTR1170	Web Engineering I.....	3
	MN Transfer Elective.....	9
	Technical Electives.....	9
	MNTC Goal Area 4.....	3

Computer Support Essentials

Certificate 15 Credits

D E

This major provides the support skills needed to assist computer users in a business environment and to install and administer local and wide area networks. Skill development covers microcomputer and data communications technology, network operating systems and the related software applications. Hardware skills include selection, configuration and operation of microcomputer central processing units, peripheral equipment and data communications equipment. Software skills include software selection, customizing, upgrading, training and user support. Upon completion of many of the courses, the student will be able to take the Microsoft certification course.

A certificate is awarded after successful completion of the specialized program of study. Although the certificate is not designed for transfer, most certificate courses also apply toward the Computer and Network Technology AAS degree offered by the college.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech.....	3
CPTR1122	Microcomputer Maintenance.....	3
CPTR1138	Information Systems.....	3
CPTR1142	Network Essentials.....	3
CTEC1106	Helpdesk Operations.....	3

Construction Electricity

Diploma 74 Credits

M W

The Construction Electricity 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. Technical and general studies 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.

Course #	Course Title	Crds
BLDG1102	Construction Safety.....	1
CONE1102	Intro Elec Circuit Theory.....	4
CONE1104	Intro to National Electrical Code.....	2
CONE1107	Introduction to Residential Wiring.....	3

CONE1108	Electrical Circuit Theory.....	4
CONE1110	AC/DC Motors/Generators.....	4
CONE1112	Residential Wiring.....	3
CONE1114	National Electrical Code.....	2
CONE1116	Conduit/Tool Applications.....	2
CONE1118	Electrical Services.....	3
CONE1120	Electrical Blueprints.....	3
CONE1122	Introduction to Electrical Materials.....	1
CONE1124	Intro to Electrical Blueprint Reading.....	2
CONE2202	Heating/Cooling Controls.....	3
CONE2205	Intro Commercial Wiring.....	3
CONE2206	Intro to Motor Control Applications.....	3
CONE2208	Programmable Logic Controllers.....	2
CONE2211	Electronic Motor Control.....	3
CONE2212	Commercial Wiring.....	3
CONE2214	Industrial Wiring.....	2
CONE2216	Motor Control Application.....	3
CONE2225	Transformers.....	2
CONE2248	Code Applications.....	2
CPTR1100	Fund Computer Concepts.....	1
CPTR1104	Intro to Computer Tech.....	3
GWS1102	Contemporary Career Search.....	1
GSMS1000	Technical Mathematics.....	3
GSMS1110	First Aid / CPR.....	1
	General Studies Electives.....	3
	Technical Electives.....	5

Construction Electricity - Industrial Maintenance Emphasis Diploma 72 Credits

W

The Construction Electricity diploma is a dual-track program which provides students with the 2,000 hours towards their Minnesota Class A Journeyman while providing students the training necessary to be successful as an industrial electrician. Along with the construction electrician courses, students study hydraulics and pneumatics, industrial motor maintenance, advanced PLCs and advanced electronics. These courses provide students with a mix of theory and hands-on lab. This comprehensive program includes reading schematics and installing hydraulic/pneumatic systems, PLCs and industrial AC/DC drives. Students will get hands-on experience tearing down large industrial AC and DC motors, testing motor windings, proper bearing installation and maintenance, motor alignment and predictive maintenance techniques such as vibration analysis, infrared thermography and failure analysis.

Course #	Course Title	Crds
BLDG1102	Construction Safety.....	1
CONE1102	Intro Elec Circuit Theory.....	4
CONE1104	Intro to National Electrical Code.....	2
CONE1108	Electrical Circuit Theory.....	4
CONE1110	AC/DC Motors/Generators.....	4
CONE1114	National Electrical Code.....	2
CONE1116	Conduit/Tool Applications.....	2
CONE1120	Electrical Blueprints.....	3
CONE1122	Introduction to Electrical Materials.....	1
CONE1124	Intro to Electrical Blueprint Reading.....	2
CONE2202	Heating/Cooling Controls.....	3
CONE2205	Intro Commercial Wiring.....	3
CONE2206	Intro to Motor Control Applications.....	3
CONE2208	Programmable Logic Controllers.....	2
CONE2211	Electronic Motor Control.....	3
CONE2212	Commercial Wiring.....	3
CONE2214	Industrial Wiring.....	2
CONE2216	Motor Control Application.....	3
CONE2222	Adv Prog Logic Controllers.....	3
CONE2225	Transformers.....	2
CONE2228	Troubleshooting.....	1
CONE2234	Hydraulics/Pneumatics.....	2
CONE2236	Industrial Motor Maintenance.....	2
CONE2247	Advanced Electronics.....	3
CPTR1104	Intro to Computer Tech.....	3
GWS1102	Contemporary Career Search.....	1
GSCI1108	Info Retrieval - 21st Century.....	1
GSMS1000	Technical Mathematics.....	3
GSMS1110	First Aid / CPR.....	1
	Technical Electives.....	3

Construction Management

AAS 72 Credits

M

Construction and related activities comprise the largest segment of our 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.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
BIOL1107	Environmental Science Issues.....	3
PSCI1130	State and Local Government.....	3
CONM2216	Computer Estimating.....	2
BLDG1114	Blueprint Reading I.....	2
CONM1108	Principles of Estimating.....	4
CADD1102	Fundamentals of CADD.....	4
CONM1102	Site/Building Layout.....	2
CONM1124	Building Systems.....	3
CONM2204	Materials Testing.....	3
CONM2206	Building Codes.....	2
CONM2208	Construction Bidding.....	2
CONM2210	Construction Scheduling.....	3
CONM2212	Site Management.....	3
CONM2214	Safety Management.....	3
CONM2222	Construction Mgmt Internship.....	2
CPTR1104	Intro to Computer Tech.....	3
ENGR1100	Project Management.....	1
ENGR1118	Engineering Applications.....	3
ENGR1126	Engineering Graphics.....	3
	MN Transfer Elective.....	12
	Technical Electives.....	6

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 29-credit certificate program is designed to:

- 1) Provide pre-employment education for the student who desires a position as a correctional officer.
- 2) Provide in-service education for employed correctional officers.
- 3) Facilitate articulation into the two-year Criminal Justice AS degree for peace officer licensing.

Course #	Course Title	Crds
ACCT1012	Principles of Bookkeeping.....	3
CRJU2206	Police Report Writing.....	3
CRJU1108	Phys Control Tactics for Corrections.....	3
SOC2216	Minority Group Relations.....	3
GSCO1102	Applied Communications.....	3
CRJU1109	Law Enforcement Behv Science.....	3
CRJU2201	Criminal Law.....	3
CPTR1100	Fund Computer Concepts.....	1
CRJU1101	Introduction to Criminal Justice.....	3

Cosmetology

Diploma 58 Credits

W

Cosmetology is the art and science, as well as the 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 who come to the campus clinic/salon. Acquired 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 Barbering and Cosmetologists. Graduates holding a valid cosmetology license are also eligible for employment on tourist ships and in other unique employment settings. Academically, courses in biology, chemistry, English, math and business are necessary in preparing for a career in cosmetology.

The Board of Barbering and 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.

Course #	Course Title	Crds
ENR1104	Preparing Your Business Plan	1
ENR1106	Sources of Funding, Alternatives to Starting from Scratch	1
COSM1103	Shampooing & Rinsing	2
COSM1133	Anatomy of the Head, Face & Neck	2
COSM1135	Advanced Nail Techniques	3
COSM1137	Principles of Hair Design	1
COSM1141	Chemistry/Electricity	2
COSM1143	Salon Business	2
COSM1145	Infection Control	2
COSM1147	MN Cosmetology Laws and Rules	2
COSM1126	Clinic III	3
COSM1131	Manicuring/Pedicuring	2
COSM1127	Hair Color	3
COSM1105	Hairstyling	3
COSM1107	Haircutting	3
COSM1111	Properties of the Hair & Scalp	2
COSM1113	Chemical Texture Services	3
COSM1115	Braiding/Extensions/Wigs	2
COSM1121	Histology of the Skin	2
COSM1123	Facials/Make-Up/Hair Removal	3
COSM1125	Nail Structure & Growth	1
COSM1149	Advanced Hair Design	1
COSM1122	Clinic I	3
COSM1124	Clinic II	3
COSM1155	Professional Image	1
GSSI1104	Human Relations	3
ENR1102	Start-Up Survival & Success	1
CPTR1100	Fund Computer Concepts	1

Criminal Justice

AS 60 Credits

M

The Associate of Science 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.
- * Successful completion of a personality assessment provided and evaluated through M State. [^Approximate cost = \$140]
- * Completion of a criminal background check through the State of Minnesota or applicable state. [^Approximate cost = \$15]
- * Achievement of at least a C in all Criminal Justice classes.
- * Completion of a required initial advising session with the program coordinator.
- * Note that expenses listed in brackets above and marked by ^ 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.

Course #	Course Title	Crds
CRJU1101	Introduction to Criminal Justice	3
CRJU1102	Policing and Practices	3
CRJU1104	Juvenile Justice and Delinquency	3
CRJU1109	Law Enforcement Behav Science	3
CRJU2201	Criminal Law	3
CRJU2202	Criminal Procedures	3
CRJU2206	Police Report Writing	3
CRJU2209	Criminal Investigations	3
ENGL1101	College Writing	3
ENGL1102	College Writing II	3
SPCH1150	Interpersonal Comm	3
	Criminal Justice Electives	6
	MN Transfer Elective	21

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 in which the demand for employment is high, an 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 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
CULN2228	Food Cost Control	3
CULN1102	Intro to Foodservice Preparation	4
CULN1104	Soups, Stocks and Sauces	2
CULN1120	Kitchen Math and Formulas	1
CULN1112	Poultry and Seafood	3
CULN1124	Menu Planning and Merchandising	2
CULN1118	Fry and Broiler Lab	5
CULN2202	Meats	2
CULN2204	Breakfast Preparation Lab	5
CULN2206	Buffet and Garde Manger Lab	3
CULN2222	Prod & Planning Supervision Lab	6
CULN2214	Quantity Food Prep & Butcher Lab	6
CULN1122	Sanitation Certification	1
CULN1106	Salad and Baking Lab	6
	General Studies Electives	9
	Technical Electives	6

Dental Assisting

Diploma 48 Credits

M

The Dental Assisting program provides 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.

Individuals entering the program must complete a background check required by the Minnesota Human Services licensing division, and commence the Hepatitis B vaccination series. Individuals who do not receive a clear background check may participate in the program, but cannot be allowed to participate in clinical and/or field experience courses which are required for graduation.

PLEASE NOTE: The following required courses must be taken PRIOR TO enrolling in the core Dental Assisting courses: BIOL2202, CPTR1100, DENT1102 and ENGL1101.

Dental Assisting Program minimum admission requirements:

1. Academic Transcript with a minimum 2.5 GPA. If applicant has completed 12 or more college credits, admission will be determined based on college transcript. If applicant has not completed 12 or more college credits, admission will be determined based on *High School transcript or **GED.

*If applicant is currently in the process of completing high school, a final transcript must be submitted prior to July 2006 that reflects the minimum 2.5 GPA at the time of graduation. A final transcript that reports a GPA below 2.5 will result in removal from the program. Failure to submit a transcript may result in the same.

**GED completion transcript with a minimum average of 500 (50 on older tests) on each of the five tested areas.

AND

- 2a. Completion of all developmental course work based on assessment results prior to acceptance into the Dental Assisting program. Students must earn a C or better in all developmental course work to be eligible for acceptance to the program.

Developmental Courses:
 DVCM 0006 Comprehension Building
 ENGL 0050 Writing Fundamentals
 MATH 0052 Developmental Math

OR

2b. Accuplacer assessment scores as follows: (or be eligible for an assessment waiver)
 Arithmetic = 57
 Reading = 77.5
 Writing = 77.5

Course #	Course Title	Crds
DENT1100	Biomaterials	3
CPTR1100	Fund Computer Concepts	1
DENT1106	Dental Radiology Lecture	3
DNAS1106	Biodental Science	3
DENT1108	Dental Radiology Lab	2
DNAS1103	Clinical Assisting I	6
DNAS1114	Dental Prac Management	2
DENT1122	Dental Ethics & Jurisprudence	1
DNAS1105	Clinical Assisting II	5
DNAS1119	Advanced Functions	5
DNAS1215	Dental Specialties	1
GSMS1110	First Aid / CPR	1
DENT1102	Dental Anatomy	2
BIOL2202	Principles of Nutrition	3
ENGL1101	College Writing	3
DNHY1103	Intro for Dental Health Care Prov	2
DENT1104	Dental Health Care Providers II	1

Dental Assisting

AAS 63 Credits

M

The Dental Assisting program provides 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.

Individuals entering the program must complete a background check required by the Minnesota Human Services licensing division, and commence the Hepatitis B vaccination series. Individuals who do not receive a clear background check may participate in the program, but cannot be allowed to participate in clinical and/or field experience courses which are required for graduation.

PLEASE NOTE: The following required courses must be taken PRIOR TO enrolling in the core Dental Assisting courses: BIOL2202, CPTR1100, DENT1102 and ENGL1101.

Dental Assisting Program minimum admission requirements:

1. Academic Transcript with a minimum 2.5 GPA. If applicant has completed 12 or more college credits, admission will be determined based on college transcript. If applicant has not completed 12 or more college credits, admission will be determined based on *High School transcript or **GED.

*If applicant is currently in the process of completing high school, a final transcript must be submitted prior to July 2006 that reflects the minimum 2.5 GPA at the time of graduation. A final transcript that reports a GPA below 2.5 will result in removal from the program. Failure to submit a transcript may result in the same.

**GED completion transcript with a minimum average of 500 (50 on older tests) on each of the five tested areas.

AND

2a. Completion of all developmental course work based on assessment results prior to acceptance into the Dental Assisting program. Students must earn a C or better in all developmental course work to be eligible for acceptance to the program.

Developmental Courses:
 DVCM 0006 Comprehension Building
 ENGL 0050 Writing Fundamentals
 MATH 0052 Developmental Math

OR

2b. Accuplacer assessment scores as follows: (or be eligible for an assessment waiver)

Arithmetic = 57
 Reading = 77.5
 Writing = 77.5

Course #	Course Title	Crds
DNAS1114	Dental Prac Management	2
GSMS1110	First Aid / CPR	1
DNAS1105	Clinical Assisting II	5
BIOL2230	Human Anatomy and Physiology I	3
BIOL2232	Human Anatomy and Physiology II	3
BIOL2202	Principles of Nutrition	3
BIOL2257	Medical Microbiology	3

CHEM1100	Fund Concepts Chemistry	3
CPTR1100	Fund Computer Concepts	1
DENT1102	Dental Anatomy	2
ENGL1101	College Writing	3
PSYC1200	General Psychology	3
DENT1100	Biomaterials	3
DENT1106	Dental Radiology Lecture	3
DNAS1106	Biodental Science	3
DNAS1102	Clinical Assisting I	6
DNAS1210	Radiology Lab	1
DENT1104	Dental Health Care Providers II	1
DENT1122	Dental Ethics & Jurisprudence	1
DNAS1212	Radiology Lab II	1
DENT1103	Intro for Dental Health Care Prov	2
DNAS1215	Dental Specialties	1
DNAS1142	Clinical Affiliations	5
DNAS1119	Advanced Functions	5

Dental Hygiene

AAS 88 Credits

M

The Dental Hygiene program provides knowledge and skills necessary for the dental hygienist to work with a dentist and to provide direct patient care to patients. The services dental hygienists provide vary somewhat from state to state. Routine functions include scaling, periodontal therapy and polishing teeth; applying preventive and other topical agents to the teeth; taking and processing x-rays; assessing the patient's health and the health of the supporting structures of the teeth; and providing patient education, providing pain control measures such as local anesthetic and conscious nitrous oxide sedation, and providing dental health education in the community. The curriculum includes content in general education; bio-medical, dental, dental hygiene and clinical sciences; and clinical practice. Graduates are eligible to write the National Board and take the Central Regional Dental Testing Service, Inc. exam.

Application to the Dental Hygiene program must be completed before March 1 of the year in which a student wishes to attend the Dental Hygiene program. The selection of students is done on a point system using the Dental Hygiene Application Assessment Sheet to rank applicants.

If accepted into the program, the student must complete and pass an annual background check required by the Minnesota Human Services licensing division, complete the Hepatitis B series, be certified in first aid and CPR, and be current in immunizations.

Course #	Course Title	Crds
MATH0090	Introductory Algebra	3
BIOL2257	Medical Microbiology	3
BIOL2230	Human Anatomy and Physiology I	3
BIOL2232	Human Anatomy and Physiology II	3
CHEM1100	Fund Concepts Chemistry	3
DNHY2246	Clinical Affiliation II	1
ENGL1101	College Writing	3
BIOL2202	Principles of Nutrition	3
PSYC1200	General Psychology	3
SOC1111	Intro to Sociology	3
DNHY1105	Dental Health Care Providers II	1
DNHY1100	Biomaterials	3
DNHY1109	Radiology Lab	2
DNHY1136	Dental Pharmacology	2
DNHY2240	Clinical Affiliation I	1
DNHY1106	Head and Neck Anatomy	2
DNHY1108	Oral Histology and Embryology	2
DNHY1110	Principles I	2
DNHY1112	Dental Hygiene Practice I	3
DNHY1122	Dental Ethics & Jurisprudence	1
DNHY1118	Oral Pathology	2
DNHY1123	Dental Hygiene Practice II	5
DNHY1124	Pain Control Lab	2
DNHY1130	Dent Hygiene Prin III	1
DNHY1132	Dent Hygiene Prac III	1
DNHY2210	Dent Hygiene Prin IV	2
DNHY2213	Dent Hygiene Prac IV	6
DNHY2226	Community Dental Hygiene	4
DNHY2219	Periodontology	2
DNHY2220	Dent Hygiene Prin V	1
DNHY2223	Dent Hygiene Prac V	6
DENT1102	Dental Anatomy	2
DNHY1104	Dental Anatomy Lab	1
DNHY1107	Dental Radiology Lecture	3
DNHY1119	Dental Hygiene Principles II	4
DNHY1103	Intro for Dental Health Care Prov	2

Diesel Equipment Technology

(General) - Diploma 65 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 lines, differentials, hydraulic and air brake systems, electrical systems, 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 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, brakes, 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 get hands-on training on such components as electrical, transmissions, air conditioning, brakes, fuel systems hydraulics and engines. This program is an Association of Diesel Specialists TechSmart program participant.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
GSSI1104	Human Relations.....	3
DSET2220	Internship.....	3
CPTR1104	Intro to Computer Tech.....	3
TRNS1112	Heating Ventilation A/C.....	3
DSET1106	Fuel Systems.....	2
DSET1110	Power Train I.....	3
DSET1112	Hydraulics I.....	4
DSET1130	Trans Elec/Start/Charge.....	4
DSET2230	Adv Engines & Fuel Systems I.....	3
DSET2232	Adv Engines & Fuel Systems II.....	3
DSET1144	Electrical Troubleshooting.....	3
DSET2210	Mobile Hydraulics.....	4
DSET2238	Transmissions & Drive Systems.....	4
DSET2204	AdvElectrical & Equipment Systems.....	3
COMM1100	Power & Comm in Human Relations.....	3
DSET1100	Diesel Equipment Fundamentals.....	2
DSET1132	Introduction to Engine Theory.....	2
DSET1134	Introduction to Engines.....	3
DSET1114	Vehicle Brakes.....	3
DSET2206	Electronic Controls.....	3
	Technical Electives.....	3

Diesel Equipment Technology

(General) - 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 lines, differentials, hydraulic and air brake systems, electrical systems, 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 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, brakes, 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 get hands-on training on such components as electrical, transmissions, air conditioning, brakes, fuel systems hydraulics and engines. This program is an Association of Diesel Specialists TechSmart program participant.

Course #	Course Title	Crds
DSET2210	Mobile Hydraulics.....	4
BIOL1107	Environmental Science Issues.....	3
CPTR1104	Intro to Computer Tech.....	3
ECON1150	Essentials of Economics.....	3
DSET2230	Adv Engines & Fuel Systems I.....	3
SOC1111	Intro to Sociology.....	3

DSET2238	Transmissions & Drive Systems.....	4
SPCH1114	Intro to Public Speaking.....	3
DSET1130	Trans Elec/Start/Charge.....	4
DSET1106	Fuel Systems.....	2
DSET1110	Power Train I.....	3
DSET1112	Hydraulics I.....	4
DSET1132	Introduction to Engine Theory.....	2
DSET2232	Adv Engines & Fuel Systems II.....	3
DSET1144	Electrical Troubleshooting.....	3
DSET2206	Electronic Controls.....	3
DSET2204	Adv Electrical & Equipment Sys.....	3
DSET2240	SOE II.....	3
ENGL1101	College Writing.....	3
DSET1100	Diesel Equipment Fundamentals.....	2
DSET1134	Introduction to Engines.....	3
TRNS1112	Heating Ventilation A/C.....	3
DSET1114	Vehicle Brakes.....	3
DSET1140	SOE I.....	7
DSET1124	Diesel Shop Management.....	1
GSWS1102	Contemporary Career Search.....	1

Diesel Equipment Technology

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

M

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 MSCTC. Students who are accepted into the sponsored program may qualify to receive the following:

- *Partial reimbursement for tuition 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 Forging 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>. This Forging the Future Partnership program, located in Moorhead, Minnesota, is the first Case IH & New Holland corporate-supported college program in the nation.

Students entering the Forging 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
DSET1106	Fuel Systems.....	2
CPTR1104	Intro to Computer Tech.....	3
DSET1110	Power Train I.....	3
DSET1112	Hydraulics I.....	4
DSET1124	Diesel Shop Management.....	1
DSET1100	Diesel Equipment Fundamentals.....	2
DCNH1116	CNH SOE I.....	3
TRNS1112	Heating Ventilation A/C.....	3
DSET1130	Trans Elec/Start/Charge.....	4
DSET1132	Introduction to Engine Theory.....	2
DSET1134	Introduction to Engines.....	3
SOC1111	Intro to Sociology.....	3
SPCH1114	Intro to Public Speaking.....	3
DCNH1118	CNH SOE II.....	7
DCNH2230	Adv Engines & Fuel Systems I.....	3
DCNH2232	Adv Engines & Fuel Systems II.....	3
DSET1144	Electrical Troubleshooting.....	3
DSET2206	Electronic Controls.....	3
ECON1150	Essentials of Economics.....	3
BIOL1107	Environmental Science Issues.....	3
DCNH2210	Mobile Hydraulics.....	4
DCNH2238	Transmissions & Drive Systems.....	4
DSET2204	Adv Electrical & Equipment Systems.....	3
DCNH2218	CNH SOE III.....	3

ENGL1101	College Writing.....	3
GSWS1102	Contemporary Career Search.....	1

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 & Technical College (MSCTC) 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 MSCTC. Students accepted into the program qualify to receive:

*\$8000 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 April Mitchell at RDO Equipment Co. at amitchell@rdoequipment.com or Darrell Stellingwerf at Nortrax at Darrell.Stellingwerf@nortrax.com. For additional information about the program, go to www.johndeere.com/tech.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech	3
DSET1106	Fuel Systems.....	2
DSET1110	Power Train I.....	3
DSET1112	Hydraulics I.....	4
DSET1124	Diesel Shop Management.....	1
DSET1100	Diesel Equipment Fundamentals.....	2
DEER1116	John Deere SOE I.....	3
TRNS1112	Heating Ventilation A/C.....	3
DSET1130	Trans Elec/Start/Charge.....	4
DSET1132	Introduction to Engine Theory	2
DSET1134	Introduction to Engines	3
SOC1111	Intro to Sociology.....	3
SPCH1114	Intro to Public Speaking.....	3
DEER1118	John Deere SOE II.....	7
DEER2230	Adv Engines & Fuel Systems I.....	3
DEER2232	Adv Engines & Fuel Systems II.....	3
DSET1144	Electrical Troubleshooting.....	3
DSET2206	Electronic Controls	3
ECON1150	Essentials of Economics.....	3
BIOL1107	Environmental Science Issues	3
DEER2210	Mobile Hydraulics.....	4
DEER2238	Transmissions & Drive Systems.....	4
DSET2204	Adv Electrical & Equipment Systems.....	3
DEER2218	John Deere SOE III	3
ENGL1101	College Writing.....	3
GSWS1102	Contemporary Career Search.....	1

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 lines, differentials, hydraulic and air brake systems, electrical systems,

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 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, brakes, 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 get hands-on training on such components as electrical, transmissions, air conditioning, brakes, fuel systems hydraulics, and engines. This program is an Association of Diesel Specialists TechSmart program participant.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech	3
DSET1106	Fuel Systems.....	2
DSET1112	Hydraulics I.....	4
DSET1114	Vehicle Brakes.....	3
DSET1124	Diesel Shop Management.....	1
DSET1130	Trans Elec/Start/Charge.....	4
DSET1100	Diesel Equipment Fundamentals.....	2
DSET1110	Power Train I.....	3
DSET1132	Introduction to Engine Theory	2
DSET1134	Introduction to Engines	3
DSET1144	Electrical Troubleshooting.....	3
SOC1111	Intro to Sociology.....	3
TRNS1112	Heating Ventilation A/C.....	3
DTRK1140	SOE I.....	7
DSET2204	Adv Electrical & Equipment Syst	3
DTRK2230	Advanced Engines I.....	3
DTRK2232	Advanced Engines II	3
DTRK2214	Suspension and Alignment.....	3
SPCH1114	Intro to Public Speaking.....	3
BIOL1107	Environmental Science Issues.....	3
DSET2206	Electronic Controls	3
DTRK2238	Transmissions & Drive Systems.....	4
DTRK2240	SOE II.....	4
ECON1150	Essentials of Economics.....	3
ENGL1101	College Writing	3
GSWS1102	Contemporary Career Search.....	1

Digital Photography and Imaging Certificate 18 Credits

M

This program is intended for applicants with a strong interest in photography and image manipulation. Successful applicants 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.

Course #	Course Title	Crds
CPTR1102	Intro to MAC	3
GDTC1126	Digital Photography	3
GDTC2203	Electronic Image Manipulation	3
GDTC2244	Adv Electronic Imaging	3
GDTC2240	Lighting Techniques	2
GDTC2246	Advanced Photography & Imaging.....	4

Early Childhood & Paraprofessional Education AS 60 Credits

D WE

This program includes coursework in child development 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, group family child care provider (based on program) as listed in Minnesota Department of Human Services Rules Number 9502 and 9503. 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.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
SPCH1114	Intro to Public Speaking.....	3
ENGL1102	College Writing II.....	3
SOC1111	Intro to Sociology.....	3
ART1110	Intro to Art.....	3
PSYC1200	General Psychology.....	3
CDEV1107	Intro to Early Educ.....	3
CDEV2200	Integrating Play.....	3
CDEV2229	Imaginative Learning.....	3
CDEV2236	Occupational Experience.....	1
CDEV2238	Integ Children with Special Needs.....	3
CDEV2240	Observing & Assessing.....	3
CDEV2242	Infant/Toddler Program.....	3
CDEV2244	Parent Professional Relations.....	3
CDEV2246	Foundations in Literacy.....	3
CDEV1105	Development/Guidance.....	3
CDEV2290	Internship.....	3
	MNTC Goal Area 10.....	3
	MNTC Goal Area 7.....	3
	MNTC Goal Area 8.....	3
	MNTC Goal Area 9.....	3

Electrical Lineworker Technology

Diploma 36 Credits

W B

The Electrical Line Worker 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, guying 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.

Course #	Course Title	Crds
CPTR1100	Fund Computer Concepts.....	1
GSWS1102	Contemporary Career Search.....	1
ELWT1102	Electrical Line Worker Theory I.....	4
ELWT1104	Electrical Structure Installation.....	5
ELWT1106	Climbing Electrical Structure.....	4
ELWT1108	Const of Overhead Structures.....	3
ELWT1110	Line Worker Theory II.....	4
ELWT1112	Transformers.....	2
ELWT1114	Line Construction Reports.....	2
ELWT1116	Pole Top/Bucket Rescue.....	1
ELWT1118	Field Construction I.....	3
ELWT1120	Field Construction II.....	3
GSMS1110	First Aid / CPR.....	1
	Technical Electives.....	2

Electrical Lineworker Technology

AAS 72 Credits

W

The Electrical Line Worker 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, guying 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.

Course #	Course Title	Crds
MATH1020	Intermediate Algebra.....	3
ENST2001	Fundamentals of Utilities.....	4
ENST2002	Energy Safety Principles.....	1
PHYS1106	Fund of Physics - Mechanics.....	3
ENGL1101	College Writing.....	3
ENST2222	Blueprint Read for Energy Industry.....	2
ELTR1102	Circuit Analysis I.....	4
SUPL1118	Lead & Facilitate Teams.....	3
ENST2223	GPS Mapping.....	2
PSYC1101	Human Interaction.....	3
ELWT1102	Electrical Line Worker Theory I.....	4
ELWT1104	Electrical Structure Installation.....	5
ELWT1106	Climbing Electrical Structure.....	4

ELWT1108	Const of Overhead Structures.....	3
GSMS1110	First Aid / CPR.....	1
ELWT1110	Line Worker Theory II.....	4
ELWT1112	Transformers.....	2
ELWT1114	Line Construction Reports.....	2
ELWT1116	Pole Top/Bucket Rescue.....	1
ELWT1118	Field Construction I.....	3
ELWT1120	Field Construction II.....	3
GSWS1102	Contemporary Career Search.....	1
CPTR1100	Fund Computer Concepts.....	1
ELWT1122	Field Construction III.....	3
BIOL1107	Environmental Science Issues.....	3
	MN Transfer Elective.....	3

Engineering

AS 60 Credits

M

The Associate of Science 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.

Course #	Course Title	Crds
MATH1135	Calculus II.....	5
CHEM1112	General Inorganic Chemistry II.....	5
MATH1134	Calculus I.....	5
ENGL1101	College Writing.....	3
CHEM1111	General Inorganic Chemistry I.....	5
ENGR2210	Engineering Mechanics I.....	3
MATH2231	Analytical Geometry and Calculus III.....	4
ENGR2220	Engineering Mechanics II.....	3
MATH2259	Differential Equations.....	4
ENGR2230	Mechanics of Materials.....	3
PHYS1412	University Physics II.....	5
	MN Transfer Elective.....	15

Engineering - Fergus Falls

AS 60 Credits

F

The Associate of Science 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 4 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.

Course #	Course Title	Crds
SPCH1114	Intro to Public Speaking.....	3
PHYS1412	University Physics II.....	5
MATH2259	Differential Equations.....	4
MATH1135	Calculus II.....	5
CSCI1121	Computer Science I.....	4
ECE1102	Problem Solving for Engineers.....	3
PHYS1411	University Physics I.....	5
ECE1101	Intro to Engineering Profession.....	3
CHEM1111	General Inorganic Chemistry I.....	5
MATH2231	Analytical Geometry & Calculus III.....	4
MATH1134	Calculus I.....	5
ENGL1101	College Writing.....	3
ECE2202	Circuit Analysis II.....	3
ECE2203	Circuit Analysis Lab.....	1
ECE2201	Circuit Analysis I.....	3
	MN Transfer Elective.....	4

Entrepreneurship

Certificate 16 Credits

D E CTS

As an entrepreneur, you can create your own path to success and work to make your dream a reality. This certificate teaches students the necessary skills and behaviors that contribute to launching a new business. Students will learn to assess new enterprise op-

portunities, obtain financial resources, prepare a business plan and market a venture for success.

Course #	Course Title	Crds
ACCT1000	Business Math	2
ACCT2211	Financial Accounting I.....	3
ENTR1100	Introduction to Entrepreneurship.....	3
BUS2206	Principles of Marketing.....	3
BMG11112	Business Plan Development	2
CPTR1104	Intro to Computer Tech	3

Environmental Science

AS 60 Credits

F

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

Course #	Course Title	Crds
BIOL1111	General Biology I.....	4
BIOL1112	General Biology II.....	4
CHEM1111	General Inorganic Chemistry I.....	5
CHEM1112	General Inorganic Chemistry II.....	5
MATH1114	College Algebra.....	4
MATH1115	Functions/Trigonometry.....	4
BIOL1107	Environmental Science Issues.....	3
BIOL1108	Env Science Issues Lab.....	1
MATH1134	Calculus I.....	5
SOC1113	Social Problems.....	3
MATH1213	Introduction to Statistics.....	4
PHYS1401	College Physics I.....	4
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
CSCI1101	Computer Essentials.....	1
	MN Transfer Elective	7

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 to a bachelor 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. RHRA is a world-class training/boarding/events facility located along the Otter Tail River, 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's students a unique advantage when entering the job market. They will possess a diploma that reflects a perfect combination of academic learning and real-life application.

Course #	Course Title	Crds
EQSC1050	Equine Anatomy	3
EQSC1001	Introduction to Equine Science.....	1
EQSC1140	Western Horsemanship.....	3
EQSC1060	Equine Reproduction and Nutrition.....	3
EQSC1131	Stable Operations II.....	2
EQSC1160	English Equitation.....	3
EQSC1150	Fundamentals of Riding Instruction.....	2
EQSC1130	Stable Operations I.....	1
EQSC1170	Introduction to Horse Training.....	1
ENGL1101	College Writing.....	3
SOC2222	Sociology of Agriculture.....	3
CSCI1101	Computer Essentials.....	1
EQSC1180	Equine Evaluation.....	2
ACCT1012	Principles of Bookkeeping.....	3

Equine Science

AAS 61 Credits

F

This program will build up 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
EQSC1001	Introduction to Equine Science.....	1
EQSC1150	Fundamentals of Riding Instruction.....	2
ENGL1101	College Writing.....	3
ACCT1012	Principles of Bookkeeping.....	3
EQSC1130	Stable Operations I.....	1
EQSC1140	Western Horsemanship.....	3
EQSC1050	Equine Anatomy.....	3
EQSC1180	Equine Evaluation.....	2
EQSC1170	Introduction to Horse Training.....	1
CSCI1101	Computer Essentials.....	1
SOC2222	Sociology of Agriculture.....	3
EQSC1160	English Equitation.....	3
EQSC1131	Stable Operations II.....	2
EQSC1060	Equine Reproduction and Nutrition.....	3
EQSC2500	Equine Internship.....	15
EQSC2200	Recognition and Management of Equine Disorders.....	3
EQSC2300	Applied Stable Operations.....	3
	MN Transfer Electives.....	9

Estheticist

Certificate 24 Credits

W

Esthetics is a 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 Barbering and 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.

Course #	Course Title	Crds
COSM1133	Anatomy of the Head, Face & Neck.....	2
COSM1124	Clinic II.....	3
COSM1121	Histology of the Skin.....	2
COSM1126	Clinic III.....	3
COSM1123	Facials/Make-Up/Hair Removal.....	3
COSM1143	Salon Business.....	2
COSM1147	MN Cosmetology Laws and Rules.....	2
CPTR1100	Fund Computer Concepts.....	1
ENTR1102	Start-Up Survival & Success.....	1
ESTH1808	Advanced Skin Treatments.....	3
ENTR1104	Preparing Your Business Plan.....	1
ENTR1106	Sources of Funding, Alternatives to Starting from Scratch.....	1

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 company officer is 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 which the student resides.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
FIRE2020	Fire & Emergency Services Adm.....	3
FIRE2030	Fire Instructor I.....	2
FIRE2040	Fire Protection Systems.....	3
FIRE2050	Fire Prevention.....	3
FIRE1180	Building Const for Fire Protection.....	3
FIRE2060	Strategy and Tactics.....	2
FIRE2080	Fire Service Leadership & Mgmt.....	3

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 State of Minnesota 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 the student is familiar with all entry-level aspects of the fire service. Upon completion of the certificate, students will be able to meet the national testing requirements for emergency medical technician, International Fire Service Accreditation Congress (IFSAC) and Proboard. Students will also be eligible for the State of Minnesota firefighter license after employment with a career fire department.

Course #	Course Title	Crds
FIRE1130	Technical Rescue.....	3
COMM1120	Introduction to Public Speaking.....	3
HLTH2215	EMT Basic.....	6
FIRE1100	Intro to Fire Service.....	2
FIRE1106	Firefighter I & II.....	3
FIRE1108	Firefighter I & II Skills.....	4
FIRE1150	HazMat Operational.....	3
FIRE1140	Fire Inspection & Code Enforcement.....	3
FIRE1152	Building Construction.....	3

Graphic Design Technology

Certificate 30 Credits

M

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 we focus 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 laptop 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 will 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 curriculums consist of lectures, demonstrations, hands-on application, industry tours and lab work.

We also guide our graduates 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 obtained from study, the job market is open to receiving them as an efficient Graphic Design Technology employee.

Course #	Course Title	Crds
GDTC1150	Process Printing Theory.....	3
GDTC2212	Design & Layout III.....	3
GDTC1113	Design & Layout I.....	3
GDTC1115	Design & Layout II.....	3
GDTC1126	Digital Photography.....	3
GDTC2203	Electronic Image Manipulation.....	3
GDTC1134	Electronic Drawing I.....	3
GDTC1144	Electronic Drawing II.....	3
GDTC2242	Electronic Publishing.....	3
GDTC2258	Graphic Dsgn Prof Prac.....	3

Graphic Design Technology

AAS 60 Credits

M

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 will 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.

We also guide our graduates in how to behave and work as professionals 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 obtained from study, the job market is open to receiving them as an efficient graphic design technology employee.

Course #	Course Title	Crds
GDTC2214	Integrated Graphic Design.....	3
ENGL1101	College Writing.....	3
GDTC2244	Adv Electronic Imaging.....	3
SPCH1114	Intro to Public Speaking.....	3
GDTC1113	Design & Layout I.....	3
GDTC1115	Design & Layout II.....	3
GDTC1126	Digital Photography.....	3
GDTC2278	Digital Preflight.....	3
GDTC1134	Electronic Drawing I.....	3
GDTC1144	Electronic Drawing II.....	3
GDTC1150	Process Printing Theory.....	3
GDTC2203	Electronic Image Manipulation.....	3
GDTC2212	Design & Layout III.....	3
GDTC2242	Electronic Publishing.....	3
GDTC2258	Graphic Dsgn Prof Prac.....	3
CPTR1102	Intro to MAC.....	3
GDTC2276	Graphic Dsgn Internship.....	3
	MNTC Goal Area 6.....	3
	MNTC Goal Area 2.....	3
	MN Transfer Elective.....	3

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.

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.

Course #	Course Title	Crds
HITM2262	Reimbursement Systems.....	2
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
ENGL1101	College Writing.....	3
HITM2250	Supervisory Leadership in Hlth.....	3
SPCH1114	Intro to Public Speaking.....	3

CPTR1104	Intro to Computer Tech	3
HITM1150	Introduction to Health Care Delivery	3
HITM1152	Health Information Systems	3
HITM1155	Medicolegal Aspects	3
HITM1159	Professional Practice Experience I	2
HITM2202	Cmptr Applic in Healthcare	3
HITM2214	Introduction to ICD Coding	3
HITM2234	Coding III Advanced.....	3
HITM2242	Intro to Coding CPT.....	2
HITM2252	Quality Mgmt & Statistics	3
HITM2270	Professional Practice Experience II	1
HLTH1106	Medical Terminology.....	2
HLTH2208	Pathophysiology	3
HITM2245	Coding IV CPT.....	3
ADMM1140	Medical Language Applications.....	3
HITM2272	Professional Practice Experience III	2
	MN Transfer Elective	6

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. AAS and AS graduates may assume duties in the following areas: communication with employees, employee data record keeping, policies and administration, employee and labor relations, employment process, training and development, wage and salary, and benefit administration. The AS program is designed for more efficient course transfer to partner universities for students wishing to continue with additional education.

Course #	Course Title	Crds
HRES2252	Human Resources Competency and Portfolio Evaluation.....	2
ENGL1101	College Writing	3
PHIL1201	Ethics	3
PSYC1200	General Psychology	3
SOC1111	Intro to Sociology	3
SPCH1114	Intro to Public Speaking.....	3
ADMS1110	Word Processing	3
ADMS1116	Business Communications I.....	3
ADMS1128	Records/Database Management	3
CPTR1104	Intro to Computer Tech	3
HRES1122	Human Resource Management.....	3
HRES1126	Employee Processes	3
HRES1130	Benefits Administration.....	3
HRES1134	Training and Development	3
HRES2204	Policy Administration	3
HRES2212	Wage/Salary Administration.....	3
HRES2224	Employee/Labor Relations.....	3
HRES2245	Human Resources Internship.....	4
	Technical Electives.....	9

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. AAS and AS graduates may assume duties in the following areas: communication with employees, employee data record keeping, policies and administration, employee and labor relations, employment process, training and development, wage and salary, and benefit administration. The AS program is designed for more efficient course transfer to partner universities for students wishing to continue with additional education.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech	3
ENGL1101	College Writing	3
SOC1111	Intro to Sociology	3
HRES1122	Human Resource Management.....	3
HRES1130	Benefits Administration.....	3
ADMS1110	Word Processing	3
ENGL1102	College Writing II.....	3
HRES1126	Employee Processes	3
HRES1134	Training and Development	3
SPCH1114	Intro to Public Speaking.....	3
HRES2204	Policy Administration	3
HRES2224	Employee/Labor Relations.....	3
PHIL1201	Ethics	3
PSYC1200	General Psychology	3
HRES2212	Wage/Salary Administration.....	3
HRES2245	Human Resources Internship	4
HRES2252	Human Resources Competency and Portfolio Evaluation.....	2
	MN Transfer Elective	12

HVAC - Heating, Ventilation, & Air Conditioning

Diploma 42 Credits

W

The HVAC - 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; install, troubleshoot and repair all residential and light commercial heating and air conditioning equipment; design, fabricate and install forced air and hot water distribution systems using sheet metal, duct board, copper tubing, Wirsbo tubing, Pex tubing, PVC and other accepted materials; install a wide range 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 exchangers.

The graduate will be knowledgeable in electric theory, motor and heating-air conditioning controls and switching relays, pumps, compressors, various design variables and code requirements. This comprehensive program of technical and general education will give the graduate knowledge and hands-on experience in both the electrical and mechanical aspects of HVAC. This combination will prepare students to build and install ductwork, along with the ability to troubleshoot today's sophisticated high-efficiency heating units.

Course #	Course Title	Crds
CONE1102	Intro Elec Circuit Theory	4
CPTR1104	Intro to Computer Tech	3
HVAC2202	Air Handling.....	2
HEAT2218	Gas Heating	2
HEAT2220	Oil Heating	2
HVAC2220	Heat Pump Theory.....	1
HVAC1102	Duct Fitting Construction.....	3
HVAC1104	Heating, Ventilating, and Air Conditioning Electrical Controls.....	3
HVAC1128	Heating, Ventilating, and Air Conditioning Design and Installation	5
HVAC2204	Advanced Duct Fitting Construction.....	3
HVAC2212	Hot Water Heating.....	3
HVAC2250	Heating, Ventilating, and Air Conditioning Applications	1
GSMS1000	Technical Mathematics	3
GSMS1110	First Aid / CPR.....	1
REFR1110	Refrig, A/C & Htg Prin	3
REFR1112	Refrig, A/C & Htg Lab.....	3

Industrial Maintenance

Diploma 39 Credits

W CTS

Modern American manufacturing and industry has become a highly complicated, high-speed, high-pressure environment requiring skilled workers that 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, and most of the student's time is spent performing hands-on tasks related to the industry.

Course #	Course Title	Crds
METC1112	Manufacturing Processes.....	4
GSMS1000	Technical Mathematics.....	3
IMMA1112	Mech Blueprint Reading	2
IMMA1110	Intro Power & Mech Sys.....	3
SPCH1112	Small Group Communication.....	3
METC1152	Safety & Accident Prevent	3
METC2208	Basic Elec/Electronics	3
METC2222	Fluid Power Systems.....	3
PHYS1105	Fundamental Concepts in Physics.....	3
CONE1110	AC/DC Motors/Generators	4
CONE1124	Intro to Electrical Blueprint Reading.....	2
CONE2206	Intro to Motor Control Applications	3
TRNS1118	Welding I.....	2
CONE2236	Industrial Motor Maintenance	2

Information Technology

AS 60 Credits

M

The Information Technology Associate of Science degree prepares students to continue 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 Information Technology AS degree is an ideal mix of practical experience and general education for a field that is constantly learning.

Course #	Course Title	Crds
MATH0090	Introductory Algebra.....	3
CPTR2224	Linux I.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR1170	Web Engineering I.....	3
CPTR1108	CISCO 1.....	3
CPTR1138	Information Systems.....	3
CPTR1122	Microcomputer Maintenance.....	3
CPTR2272	Network Operating Systems.....	3
CPTR1148	Microcomputer Operating System.....	3
ENGL1101	College Writing.....	3
CPTR2236	Network Security.....	3
PSYC1200	General Psychology.....	3
CPTR2242	Java Programming.....	3
HUM2236	Technology in the Humanities.....	3
	MN Transfer Elective.....	21

Information Technology

Diploma 60 Credits

M

The Information Technology diploma prepares students to 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. The focus of this degree is practical preparation for work.

Course #	Course Title	Crds
MATH0090	Introductory Algebra.....	3
CPTR1104	Intro to Computer Tech.....	3
CPTR1108	CISCO 1.....	3
CPTR1138	Information Systems.....	3
CPTR1148	Microcomputer Operating System.....	3
CPTR1170	Web Engineering I.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR1122	Microcomputer Maintenance.....	3
CPTR2272	Network Operating Systems.....	3
ENGL1101	College Writing.....	3
CPTR2224	Linux I.....	3
CPTR2236	Network Security.....	3
PSYC1200	General Psychology.....	3
CPTR2242	Java Programming.....	3
CPTR2252	Microcomputer Systems Project.....	3
HUM2236	Technology in the Humanities.....	3
	Technical Electives.....	15

IT Systems Support

Diploma 34 Credits

D

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.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech.....	3
CPTR1122	Microcomputer Maintenance.....	3
CPTR1148	Microcomputer Operating System.....	3
CTEC1102	Technology & Organization.....	3
CTEC1104	Technical Research.....	3
CTEC1106	Helpdesk Operations.....	3
CTEC2204	Adv Technical Support.....	3
INTD2230	Emerg Tech-Resrch & Feasibility.....	1
	General Studies Electives.....	3
	Technical Electives.....	9

IT Systems Support

AAS 68 Credits

D E

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.

Course #	Course Title	Crds
CSEC1110	Fundamentals of IT Security.....	3
ENGL1101	College Writing.....	3
PHIL1201	Ethics.....	3
SPCH1114	Intro to Public Speaking.....	3
CPTR1104	Intro to Computer Tech.....	3
CPTR1106	Microcomputer Databases.....	3
CPTR1122	Microcomputer Maintenance.....	3
CPTR1142	Network Essentials.....	3
CPTR1148	Microcomputer Operating System.....	3
INTD1110	Intro to Web Programming.....	3
CTEC1104	Technical Research.....	3
CTEC1106	Helpdesk Operations.....	3
CTEC2204	Adv Technical Support.....	3
CPTR2272	Network Operating Systems.....	3
INTD1112	Web Graphic Design.....	3
GSWS1102	Contemporary Career Search.....	1
CPTR1138	Information Systems.....	3
CSEC1102	Careers in Information Systems.....	1
	MN Transfer Elective.....	9
	Technical Electives.....	9

Landscape and Garden Center Technician

Diploma 34 Credits

M

The Landscape and Garden Center Technician program provides quality education in the areas of landscape design and construction, garden center operation and ornamental plant maintenance. The focus is on preparing graduates for challenging careers in the expanding field of landscaping and garden centers. Students will design and construct landscapes using a variety of different techniques and construction materials. Students will also develop contemporary business concepts as they apply to landscape and garden centers. These outcomes will be accomplished through course work, local tours and working at an outside landscaping laboratory.

Course #	Course Title	Crds
LAND1102	Intro to Landscape/Horticulture.....	3
LAND1105	Soils and Fertilizers.....	3
LAND1108	Equipment Operations.....	2
LAND1111	Landscape Horticulture.....	3
LAND1114	Garden Center Operations.....	3
LAND1117	Landscape Management.....	3
LAND1120	Landscape Design Layout.....	3
LAND1123	Landscape Construction.....	4
LAND1126	Ornamental Plant Maintenance.....	3
LAND1129	Landscape Project.....	3
CPTR1100	Fund Computer Concepts.....	1
BIOL1107	Environmental Science Issues.....	3

Management Information Systems

AS 60 Credits

F

The A.S. in Management Information Systems is a two-year degree designed to prepare students pursuing a career in business, specifically in the of computer information management systems. The degree is designed to suit the student who wishes to enter the work force 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.

Course #	Course Title	Crds
PHIL1201	Ethics.....	3
ECON2222	Microeconomics.....	3
PSYC2224	Social Psychology.....	3
PSYC1200	General Psychology.....	3
MATH1213	Introduction to Statistics.....	4
MATH1122	Applied Calc/Linear Alg.....	3
SPCH1114	Intro to Public Speaking.....	3
BUS1120	Spreadsheet & Database Concepts.....	3

BUS2202	Mgmt Information Sys	3
CSCI1121	Computer Science I.....	4
CSCI1122	Computer Science II.....	4
ACCT2211	Financial Accounting I.....	3
ACCT2212	Financial Accounting II.....	3
ACCT2213	Managerial Accounting.....	3
CSCI1120	Computer Programming Basic	3
CSCI1205	Network Fundamentals.....	4
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
	MN Transfer Elective	2

Manicurist

Certificate 17 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. Instruction will cover applied studies and skills in cleaning, conditioning, shaping, reinforcing, coloring and enhancing nails, as well as the application and repair of artificial nails. The Board of Barbering and 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.

Course #	Course Title	Crds
MANI1104	Preclinic Introduction.....	3
MANI1110	Preclinic Nail Care.....	3
MANI1134	Nail Clinic/License Prep.....	3
MANI1146	Manicurist Clinic I.....	3
COSM1131	Manicuring/Pedicuring.....	2
COSM1135	Advanced Nail Techniques.....	3

Marine Engine Technology

Certificate 30 Credits

D

Marine engine technicians work in an exciting, rapidly changing and growing industry. The Marine Engine Technology certificate program is designed to educate individuals to become competent marine technicians. The primary focus of the certificate program is training the student to be well-rounded in marine systems, both outboard and stern drive. This training, coupled with taking the Outdoor Recreational Engine program course, allows the graduate to be a worthwhile employee who can repair both recreational and marine product. Students will perform service on 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 dealerships as technicians or will have the training to work for themselves on most types of recreational products.

Course #	Course Title	Crds
TRNS1109	Fuel Systems I.....	4
TRNS1111	Electrical Systems I.....	4
MRNT1120	Marine Starting & Charging Systems.....	3
TRNS1104	Transportation Electronics.....	3
MRNT1104	Drive System Theory.....	3
CPTR1104	Intro to Computer Tech.....	3
MRNT1106	Drive System Service.....	3
MRNT1105	Introduction to Marine.....	2
TRNS1100	Introduction to Shop Technology.....	4
MRNT2224	Marine Independent Study Lab.....	1

Marine Engine Technology

Diploma 64 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 the program is the diagnosis, service and repair of outboard and stern drive engines, drive systems and related systems and components. Students will perform service on 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 dealerships as technicians, with many having opportunities to move into management, self-employment and factory representative positions.

Course #	Course Title	Crds
GSSI1104	Human Relations.....	3
CPTR1104	Intro to Computer Tech.....	3
MRNT1105	Introduction to Marine.....	2
MRNT1104	Drive System Theory.....	3
MRNT1106	Drive System Service.....	3
MRNT2238	Marine 4-Stroke Outboard Eng Svc.....	2
TRNS1111	Electrical Systems I.....	4
MRNT2203	Marine Advanced Fuel Systems.....	4
MRNT2207	EFI and Advanced Electrical Sys.....	4
MRNT2222	Transom and Mid-Section Service.....	4
MRNT2231	Engine Performance Rebuild & Diag.....	5
MRNT2210	Engine Service.....	3
ENRT1100	Introduction to Entrepreneurship.....	3
MRNT2218	Adv Electrical Diagnosis.....	3
MRNT1120	Marine Starting & Charging Sys.....	3
TRNS1109	Fuel Systems I.....	4
TRNS1100	Introduction to Shop Technology.....	4
TRNS1104	Transportation Electronics.....	3
MRNT2221	Advanced Drive Systems & Testing.....	4

Marine Engine Technology

AAS 69 Credits

D

The marine engine technician works 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 the program is the diagnosis, service and repair of outboard and stern drive engines, drive systems, and related systems and components. Students will perform service on 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 dealerships as technicians, with many having opportunities to move into management, self-employment and factory representative positions.

Course #	Course Title	Crds
TRNS1111	Electrical Systems I.....	4
ENGL1101	College Writing.....	3
TRNS1109	Fuel Systems I.....	4
CPTR1100	Fund Computer Concepts.....	1
TRNS1100	Introduction to Shop Technology.....	4
PSCI1130	State and Local Government.....	3
SPCH1114	Intro to Public Speaking.....	3
MRNT1105	Introduction to Marine.....	2
MRNT1104	Drive System Theory.....	3
MRNT1106	Drive System Service.....	3
MRNT2224	Marine Independent Study Lab.....	1
MRNT1120	Marine Starting & Charging Syst.....	3
MRNT2207	EFI & Adv Electrical Systems.....	4
MRNT2231	Eng Performance Rebuild & Diag.....	5
MRNT2222	Transom and Mid-Section Service.....	4
MRNT2210	Engine Service.....	3
MRNT2218	Adv Electrical Diagnosis.....	3
MRNT2203	Marine Advanced Fuel Systems.....	4
TRNS1104	Transportation Electronics.....	3
	MN Transfer Elective.....	9

Marketing

AAS 68 Credits

D

The Marketing AAS is concerned with providing the practical knowledge and skills related to planning, managing and performing sales and marketing activities to meet organizational objectives. This AAS major includes 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.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
PSYC1200	General Psychology.....	3

SPCH1114	Intro to Public Speaking.....	3
ACCT1108	Business Math/Calculators.....	3
ACCT1124	Spreadsheet Applications.....	3
CPTR1104	Intro to Computer Tech.....	3
MKTG1106	Professional Selling.....	3
MKTG1110	Customer Service.....	3
MKTG2290	Supervised Occup Exp I.....	3
MKTG1116	Advertising and Promotion.....	3
BUS1141	Introduction to Business.....	3
ADMS1116	Business Communications I.....	3
BUS2206	Principles of Marketing.....	3
ADMT2222	Event Planning.....	2
ADMT1174	MS Office PowerPoint Certification.....	1
BUS2204	Principles of Management.....	3
BMGT1104	Research Methods.....	3
ADMT2224	Applied Event Management.....	1
BUS2220	Global Business.....	3
GSWS1102	Contemporary Career Search.....	1
	Technical Electives.....	6
	MN Transfer Elective.....	9

Massage Therapy Diploma 32 Credits

W

Massage therapists specialize in professional massage treatments designed to support the health and well-being of clients. Skillful massage also assists clients in the recovery of physical ailments and reduces the ill 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.

Massage therapy has a broad range of benefits including relaxation, stress reduction, pain management, recovery from injury, while promoting good health. Clients receiving professional massage include athletes, the elderly, performers and the general public. Even animals enjoy the benefits of massage.

After successful completion of the Massage Therapy program, students are eligible to sit for the National Certification Exam (NCE) administered by the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB).

Course #	Course Title	Crds
BIOL2230	Human Anatomy and Physiology I.....	3
GSMS1102	Intro to Nutrition.....	2
THPY1110	Massage Tech/Ethics.....	3
THPY1135	Deep Tissue Massage.....	2
THPY1118	Kinesiology.....	3
THPY1123	Integrative Massage.....	2
THPY1130	Advanced Massage.....	2
THPY1148	Sports Massage & Hydro.....	2
THPY1142	Student Clinic.....	3
THPY1146	Certification Prep.....	2
THPY1150	Business Development.....	2
CPTR1100	Fund Computer Concepts.....	1
GSMS1110	First Aid / CPR.....	1
THPY1156	Massage Pathophysiology.....	3
BIOL2232	Human Anatomy and Physiology II.....	3

Mechanical Drafting & 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.

Course #	Course Title	Crds
CADD1102	Fundamentals of CADD.....	4
CADD1114	Intro to Solids & Parametric Model.....	4
CADD2214	Adv Solids & Parametric Model.....	4
GSCO1102	Applied Communications.....	3
CPTR1104	Intro to Computer Tech.....	3
MCDD2224	Manufacturing Process.....	2
GSSI1104	Human Relations.....	3
MCDD1102	Mech Engineering Drawing I.....	3
MCDD1106	Mech Engineering Drawing II.....	4

MCDD1120	Drafting Practices.....	2
MCDD1122	Geo Dimensioning & Tolerancing.....	3
MCDD1124	Mechanical Drafting Applications I.....	3
CONM2216	Computer Estimating.....	2
MCDD2246	Tool Design.....	3
MCDD2248	CNC Application.....	3
MCDD2204	Mech Engineering Drawing III.....	4
MCDD2252	Mechanical Drafting Applications II.....	4
ENGR1118	Engineering Applications.....	3
	Technical Electives.....	3

Mechanical Drafting & 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.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
ECON2210	Macroeconomics.....	3
MCDD2248C	NC Application.....	3
SOC1111	Intro to Sociology.....	3
CADD1102	Fundamentals of CADD.....	4
CADD1114	Intro to Solids & Parametric Model.....	4
CADD2214	Adv Solids & Parametric Model.....	4
CPTR1104	Intro to Computer Tech.....	3
MCDD2224	Manufacturing Process.....	2
MCDD2204	Mech Engineering Drawing III.....	4
ENGR1118	Engineering Applications.....	3
MCDD1102	Mech Engineering Drawing I.....	3
MCDD1106	Mech Engineering Drawing II.....	4
MCDD1120	Drafting Practices.....	2
MCDD1122	Geo Dimensioning & Tolerancing.....	3
MCDD1124	Mechanical Drafting Applications I.....	3
CONM2216	Computer Estimating.....	2
MCDD2246	Tool Design.....	3
MCDD2252	Mechanical Drafting Applications II.....	4
	MN Transfer Elective.....	12

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.

Course #	Course Title	Crds
HLTH2208	Pathophysiology.....	3
ADMM1140	Medical Language Applications.....	3
PSYC2222	Developmental Psychology.....	3
HLTH1116	Medical Terminology.....	3
ADMM1110	Med Documentation Fundamentals.....	4
ADMM1160	Beginning Medical Transcription.....	3
ENGL1101	College Writing.....	3
ADMM1150	Medical Billing/Insurance.....	4
ADMM1152	Outpatient Coding.....	4
ADMM2270	Medical Office Simulation.....	2
ADMM1122	Medical Office Procedures.....	4
HLTH1110	Intro to Anatomy & Physiology.....	3
ADMS1116	Business Communications I.....	3
ADMM2122	Medical Office Management.....	3
ADMM2234	Professional Development.....	2
	Technical Electives.....	4
	MN Transfer Elective.....	9

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. Graduates of the program may be eligible to take several of the national coding certification exams. Courses in the program incorporate the skills needed for employment in the coding and insurance departments of medical facilities.

Course #	Course Title	Crds
ADMM2258	Certified Prof Coder Exam Review.....	1
ADMM2270	Medical Office Simulation.....	2
ADMM2266	Auditing Med Rec- E & M Services.....	3
ADMM2252	Advanced Coding.....	3
ADMM2154	Hospital Billing.....	2
ADMM1122	Medical Office Procedures.....	4
ADMM1110	Medical Documentation Fund.....	4
HLTH1116	Medical Terminology.....	3
HLTH1110	Introduction to Anatomy & Phys.....	3
ADMM1140	Medical Language Applications.....	3
ADMM1152	Outpatient Coding.....	4
HLTH2208	Pathophysiology.....	3
ADMM1150	Medical Billing/Insurance.....	4
ADMM2234	Professional Development.....	2
ADMM2150	Medicare Coding & Billing Appl.....	3
	MN Transfer Elective.....	6

Medical Laboratory Technician

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 on campus of general education, science and medical laboratory technician courses, and one semester (24 weeks) in a clinical experience at one of the three affiliate hospital laboratories. Upon completion of the program students are prepared for the MLT National Board of Registry certification exam and employment in hospital, clinic and 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 technology.

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.

An overall GPA of 2.0 is required and a C grade or better is required in the following courses: ZOO1122, ZOO1123, ZOO1126, BIOL2230, BIOL2232, BIOL2257, CHEM1100, CHEM1104 and all MLT courses. Students may repeat a course one time.

ESSENTIAL TECHNICAL STANDARDS EXPECTED OF ENTRY-LEVEL MLT STUDENTS

Prior to entering the MLT clinical experience, it is the responsibility of the student to become familiar with the essential technical standards required for successful completion of the AS degree in the Medical Laboratory Technician program. The success of the student is based on these technical standards but is dependent on academic standards as well. Academic standards must be met prior to admission to the clinical experience. Students are asked to read the following standards which are necessary for student success in the clinical experience at an affiliate.

Essential Function: Observation

Description: Use of the senses

Examples: Recognize and grade agglutination reactions; Palpate blood vessels

Essential Function: Communication

Description: Speech; Reading; Writing

Examples: Interact with patients and other members of the health care team; Comprehension of procedure manuals

Essential Function: Motor

Description: Physical ability; Coordination; Stamina

Examples: Operation of manual and automated equipment; Performance of venipuncture

Essential Function: Intellectual/conceptual

Description: Ability to solve problems

Examples: Measuring, calculating, reasoning, analyzing, prioritizing, and synthesis of data

Essential Function: Behavioral/social

Description: Emotional stability

Examples: Functions effectively under stress; Displays flexibility

Course #	Course Title	Crds
MLT1110	Prin/Proc Phlebotomy.....	2
ZOO1122	Hematology & Coag.....	4
BIOL1125	Basic Immunology.....	2
CHEM1100	Fund Concepts Chemistry.....	3
ZOO1126	Urinalysis/Body Fluids.....	2
BIOL2230	Human Anatomy and Physiology I.....	3
CHEM1104	Medical Chemistry.....	4
ZOO1123	Immunohematology.....	3
BIOL2257	Medical Microbiology.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
MLT2217	Clin Hematology.....	3
MLT2218	Clin Urinalysis.....	1
MLT2219	Clin Chemistry/Sp Chem.....	3
MLT2220	Clin Blood Bank.....	2
MLT2221	Clin Microbiology.....	3
MLT2230	Clinical Applications.....	1
	MN Transfer Electives.....	12

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.

Course #	Course Title	Crds
ADMM1140	Medical Language Applications.....	3
ADMM1122	Medical Office Procedures.....	4
ADMM1160	Beginning Medical Transcription.....	3
ADMM2270	Medical Office Simulation.....	2
ADMM1150	Medical Billing/Insurance.....	4
ADMM1152	Outpatient Coding.....	4
ADMM1110	Medical Documentation Fund.....	4
ADMS1116	Business Communications I.....	3
HLTH1110	Intro to Anatomy & Physiology.....	3
HLTH1116	Medical Terminology.....	3
ADMM2234	Professional Development.....	2
HLTH2208	Pathophysiology.....	3
	Technical Electives.....	3
	MN Transfer Elective.....	3

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 experience in medical office procedures.

Course #	Course Title	Crds
HLTH1110	Intro to Anatomy and Physiology.....	3
ADMM2234P	Professional Development.....	2
ADMM1150	Medical Billing/Insurance.....	4
ADMM2270	Medical Office Simulation.....	2
ADMM1122	Medical Office Procedures.....	4
ADMM1140	Medical Language Applications.....	3
HLTH2208	Pathophysiology.....	3
HLTH1116	Medical Terminology.....	3
ADMM1110	Medical Documentation Fund.....	4
ADMS1116	Business Communications I.....	3
	MN Transfer Elective.....	3

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 Association for Healthcare Documentation Integrity (AHD) Model Curriculum competencies. Graduates of this program will be eligible to write the national exam for Registered Medical Transcriptionist.

Course #	Course Title	Crds
HLTH1116	Medical Terminology.....	3
HLTH1110	Intro to Anatomy and Physiology.....	3
ADMM2234	Professional Development.....	2
ADMM2268	Advanced Medical Transcription.....	3
ADMM2272	Medical Transcription Practicum.....	3
ADMM1110	Medical Documentation Fund.....	4
ADMM2235	RMT Exam Review.....	1
ADMM1160	Beginning Medical Transcription.....	3
PHIL2225	Bioethics.....	3
ADMM116	2Intermediate Medical Transcription.....	3
HLTH2208	Pathophysiology.....	3
ADMS1116	Business Communications I.....	3
ADMM1140	Medical Language Applications.....	3
	Technical Electives.....	3

Music

AFA 64 Credits

F

The Associate in Fine Arts 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.

Course #	Course Title	Crds
MUSC2231	Adv Theory and Musicianship III.....	3
MUSC1121	Basic Theory and Musicianship I.....	3
MUSC1122	Basic Theory and Musicianship II.....	3
MUSC2232	Adv Theory and Musicianship IV.....	3
MUSC1123	Sight Singing & Ear Training I.....	1
MUSC1124	Sight Singing & Ear Training II.....	1
MUSC2223	Sight Singing & Ear Training III.....	1
MUSC2224	Sight Singing & Ear Training IV.....	1
MUSC1114	Beg Class Piano.....	2
ENGL1101	College Writing.....	3
ENGL1102	College Writing II.....	3
MUSC1120	Introduction to Music Technology.....	3
MUSC1116	The World of Music.....	3
	Participation in band/choir groups.....	8
	Private Voice/Instrument Lessons.....	6
	MN Transfer Elective.....	20

Nanoscience Technology

AAS 62 Credits

M

Nanoscience is a field of study involving the areas of chemistry, biology, engineering and physics. It studies the composition, structure, properties and behavior of material at the molecular and atomic level. Research, observation, measurement and manipulation occur at the nanometer range. A nanometer is one billionth of a meter. Visualize approximately 80,000 nanometers being the diameter of a human hair. Nanotechnology is the purposeful design, manufacturing and production of a product at the nanoscale, which has useful applications in our world. Nanostructures can fit together into larger structures to produce items such as microelectronics, microsensors and micromachines.

Course #	Course Title	Crds
NANO1101	Fundamentals of Nanoscience I.....	3
CHEM1111	General Inorganic Chemistry I.....	5
ENGL1101	College Writing.....	3
BIOL1111	General Biology I.....	4
NANO1102	Fundamentals of Nanoscience II.....	3
MATH1118	Precalculus.....	5
CPTR1104	Intro to Computer Tech.....	3

NANO1197	Industry Internship Experience I.....	1
ENGL1215	Professional & Tech Writing.....	3
MATH1213	Introduction to Statistics.....	4
NANO2207	Nanobiotech & Nanobiomedicine.....	3
NANO2208	Nanomaterials and Coatings.....	3
NANO2209	Thin Film Technology.....	3
NANO2210	Semiconductor Fabrication.....	3
PHYS1401	College Physics I.....	4
NANO2211	Manufacturing Quality Assurance.....	3
NANO2212	Surface & Thin Film Analysis Tech.....	3
NANO2231	Industry Internship Experience II.....	2
CHEM1115	Intro to Organic and Biochemistry.....	4

Nursing - (Generic Option)

(Generic Option) - Associate Degree (RN) 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 the hospital, long-term care, 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. The Fergus Falls, Detroit Lakes and Wadena campuses are offering the two-year generic program. This program is designed for students with no previous nursing experience.

Individuals entering the program must annually complete a background check required by the Minnesota Human Services licensing division.

Course #	Course Title	Crds
MATH0090	Introductory Algebra.....	3
NURS2455	Advanced Intravenous Therapy.....	1
NURS2447	Nursing Clinical III.....	4
NURS2466	Mental Health Nursing.....	2
NURS2437	Nursing Clinical II.....	4
NURS2464	Nursing Leadership.....	1
NURS2448	Restorative Nursing II.....	3
NURS2438	Restorative Nursing I.....	4
NURS2426	Reproductive Disorders.....	2
CPTR1100	Fund Computer Concepts.....	1
NURS1406	Nursing Fundamentals I.....	3
BIOL2202	Principles of Nutrition.....	3
ENGL1101	College Writing.....	3
PSYC2222	Developmental Psychology.....	3
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
NURS1426	Reproductive Health.....	2
ENGL1102	College Writing II.....	3
CHEM1100	Fund Concepts Chemistry.....	3
BIOL2257	Medical Microbiology.....	3
SOC1111	Intro to Sociology.....	3
NURS1415	Nursing Clinical I.....	2
NURS1416	Nursing Fundamentals II.....	4
ENGL2230	Environmental Literature.....	3
HLTH1115	Intro to Nursing in Long Term Care.....	3
NURS1400	Introduction to Professional Nursing.....	2

Nursing - (Mobility Option)

(Mobility Option) - Associate Degree (RN) 32 Credits

D F M W

The LPN to Associate Degree RN mobility option is designed for LPNs 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 summer 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 a variety of settings. The graduating nurse will be able to provide nursing care in the hospital, long-term care, 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.

Individuals entering the program must annually complete a background check required by the Minnesota Human Services licensing division.

Course #	Course Title	Crds
BIOL2202	Principles of Nutrition.....	3
NURS2426	Reproductive Disorders.....	2
NURS2438	Restorative Nursing I.....	4
ENGL2239	Nature Writers.....	3
NURS2448	Restorative Nursing II.....	3

NURS2464	Nursing Leadership.....	1
NURS2437	Nursing Clinical II.....	4
SOC1111	Intro to Sociology.....	3
NURS2466	Mental Health Nursing.....	2
NURS2447	Nursing Clinical III.....	4
NURS2455	Advanced Intravenous Therapy.....	1
NURS2410	Role Transition.....	2
BIOL2257	Medical Microbiology.....	3
CHEM1100	Fund Concepts Chemistry.....	3
ENGL1102	College Writing II.....	3
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
ENGL1101	College Writing.....	3
CPTR1100	Fund Computer Concepts.....	1
PSYC2222	Developmental Psychology.....	3
NURS2120	Professional Nursing Pharmacology.....	2

Paralegal

AAS 66 Credits

D E

This program prepares graduates for work under the supervision of an attorney with a focus on real estate, estate planning and probate and in a variety of other legal specialty areas such as civil litigation and family law. Students will study theory as it applies to the 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.

Course #	Course Title	Crds
PSCI2220	Introduction to Constitutional Theory.....	3
GSWS1102	Contemporary Career Search.....	1
ACCT1012	Principles of Bookkeeping.....	3
PSCI1130	State and Local Government.....	3
PARA2210	Advanced Paralegal Practices.....	3
PARA2204	Real Property.....	3
PARA2202	Research & Writing II.....	3
ADML1126	Criminal, ADR, Appellate.....	3
HRES1122	Human Resource Management.....	3
SPCH1114	Intro to Public Speaking.....	3
PARA1110	Torts for Paralegal.....	3
PARA1102	Research & Writing I.....	3
PSYC1200	General Psychology.....	3
CPTR1104	Intro to Computer Tech.....	3
ACCT1120	Business Law.....	3
PARA1112	Legal Ethics for the Paralegal.....	3
PARA1106	Wills, Trusts & Probate.....	3
ADML2222	Legal Terminology.....	2
ENGL1101	College Writing.....	3
PARA1101	Introduction to Paralegal.....	3
PARA2212	Family Law.....	3
	MN Transfer Elective.....	3
	Technical Electives.....	3

Pharmacy Technology

Diploma 36 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. 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. Fulfilling the role of a pharmacy technician allows the pharmacist more time for patient care in regards to medication treatment.

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.

Course #	Course Title	Crds
CPTR1104	Intro to Computer Tech.....	3
CHEM1100	Fund Concepts Chemistry.....	3
GSMS1104	Intro to Anatomy & Physiology.....	3
HLTH1106	Medical Terminology.....	2
PHRM1001	Fund Concepts of Pharmacy.....	3
PHRM2001	Pharmacy Prin / Prac I.....	4
PHRM2002	Pharmacy Prin / Prac II.....	5
PHRM2004	Drug Properties/Distribution.....	3
PHRM2010	Experiential / Hospital.....	3

PHRM2012	Experiential / Retail.....	3
GSSI1104	Human Relations.....	3
GSMS1110	First Aid / CPR.....	1

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. Fulfilling the role of a pharmacy technician allows the pharmacist more time for patient care in regards to medication treatment.

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.

Course #	Course Title	Crds
BIOL2257	Medical Microbiology.....	3
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
CHEM1100	Fund Concepts Chemistry.....	3
ENGL1101	College Writing.....	3
MATH1102	Finite Math.....	3
PSYC1200	General Psychology.....	3
SPCH1114	Intro to Public Speaking.....	3
CPTR1104	Intro to Computer Tech.....	3
HLTH1106	Medical Terminology.....	2
PHRM1001	Fund Concepts of Pharmacy.....	3
PHRM2001	Pharmacy Prin / Prac I.....	4
PHRM2002	Pharmacy Prin / Prac II.....	5
PHRM2004	Drug Properties/Distribution.....	3
PHRM2010	Experiential / Hospital.....	3
PHRM2012	Experiential / Retail.....	3
GSSI1104	Human Relations.....	3
GSMS1110	First Aid / CPR.....	1
	MNTC Goal Area 2.....	3
	Technical Electives.....	3

Phlebotomy Technician

Certificate 10 Credits

F

The M State 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 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 labs, insurance companies, donor blood facilities and home health care.

The program is completed in one semester (fall) and includes a three-week (120-hour) clinical experience under supervision in an affiliate hospital/clinic laboratory. Students must attain a 2.0 GPA or better and a grade of C or better is required in MLT1110 Principles and Procedures of Phlebotomy and MLT1112 Clinical Phlebotomy. Upon completion of the program, graduates may elect to complete the national certification exam for phlebotomy technicians.

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.

Phlebotomy Technician Application Procedure:
Interested applicants should have a high school or GED diploma and apply to the M State Student Services office. For additional information, contact the program director at 218.736.1594

Course #	Course Title	Crds
HLTH1106	Medical Terminology.....	2
MLT1110	Prin/Proc Phlebotomy.....	2
MLT1112	Clinical Phlebotomy.....	3
	Technical Electives.....	3

Plumbing Technology

Diploma 36 Credits

M W

The Plumbing Technology program prepares the student to begin a career in plumbing and pipe fitting. Coursework provides the student with technical understanding, skills development and integrates theory with practical experience. Through the plumbing 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
PLBG1102	Piping Trades and Job Safety.....	2
PLBG1104	Building Sewers & Drainage Syst	3
PLBG1108	Plumbing/Piping Drawings.....	2
PLBG1110	Copper Pipe Procedures.....	2
PLBG1112	Plastic Pipe Procedures.....	2
PLBG1114	Steel Pipe Procedures.....	2
PLBG1116	Plumbing Systems.....	3
PLBG1120	Plumbing Installation.....	3
PLBG1124	Plumbing Field Internship.....	3
GSCO1102	Applied Communications.....	3
	Technical Electives.....	11

Plumbing Technology

AAS 64 Credits

M W

The Plumbing Technology program prepares the student to begin a career in plumbing and pipe fitting. Coursework provides the student with technical understanding, skills development and integrates theory with practical experience. Through the plumbing 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
GSCO1102	Applied Communications.....	3
PLBG1102	Piping Trades and Job Safety.....	2
PLBG1112	Plastic Pipe Procedures.....	2
PLBG1114	Steel Pipe Procedures.....	2
PLBG1108	Plumbing/Piping Drawings.....	2
PLBG1110	Copper Pipe Procedures.....	2
PLBG1104	Building Sewers & Drainage Syst	3
PLBG1116	Plumbing Systems.....	3
PLBG1120	Plumbing Installation.....	3
PLBG1140	Plumbing Service Learning Project.....	3
BIOL1107	Environmental Science Issues	3
BIOL1108	Env Science Issues Lab.....	1
ENGL1101	College Writing.....	3
MATH1100	World of Math	3
PHIL1201	Ethics	3
SOC1111	Intro to Sociology.....	3
	Technical Electives.....	23

PowerSports Technology

Diploma 65 Credits

D

Students who wish to become skilled power sports 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 presently 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 with customers.

Course #	Course Title	Crds
ENTR1100	Introduction to Entrepreneurship	3
CPTR1104	Intro to Computer Tech	3
GSS11104	Human Relations.....	3
TRNS1111	Electrical Systems I.....	4
TRNS2108	Power Hydraulics.....	2

TRNS1100	Introduction to Shop Technology.....	4
TRNS1104	Transportation Electronics	3
PWST1302	Snowmobile I.....	5
PWST1404	Generators.....	2
PWST1304	Snowmobile Clutching	2
TRNS1109	Fuel Systems I.....	4
MRNT1120	Marine Starting & Charging Systems.....	3
PWST2302	Advanced Power Equipment.....	4
PWST1402	Chainsaws	2
PWST2304	Motorcycles I.....	3
MRNT2231	Engine Perf Rebuild & Diagnostics.....	5
PWST2306	Snowmobile Drives & Suspensions	3
PWST2308	Advanced Snowmobiles.....	3
PWST2310	Motorcycles II	3
PWST2312	Advanced Motorcycle Systems.....	3

Practical Nursing

Diploma 47 Credits

D F 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 how to administer 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, to name a few examples. Minnesota State Community and Technical College 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.

Students applying to the Practical Nursing program must:

* have a high school GPA of 2.5 or greater

OR

* have a GED score of 500 or greater

OR

* have earned 12 or more college credits, with a GPA of 2.5 or greater

* have completed the 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.

Prerequisites:

1. ACCUPLACER testing in math, reading and writing. Any needed developmental courses must be completed before entering any PNSG prefix course.
2. Completion of the certified Nursing Assistant or evidence of NA course completion within last five years.
3. Completion of CPTR1100 or successful test out of the course.
4. CPR for Health Care Providers, or equivalent, is required prior to taking any nursing courses.

Course #	Course Title	Crds
PNSG1209	Family Wellness	3
PNSG1200	Concepts of Nursing.....	2
ENGL1101	College Writing	3
PNSG1207	Health Promotion I.....	5
PSYC2222	Developmental Psychology.....	3
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
PNSG1217	Health Promotion II.....	4
PNSG1214	Nursing Pharmacology.....	2
PNSG1216	PN Clinical I	5
PNSG1223	Health Promotion III.....	4
PNSG1234	Nursing Roles	1
PNSG1226	PN Clinical II	4
PNSG1236	Practical Nursing Practicum.....	2
PNSG1220	Psychosocial Nursing.....	3

Practical Nursing

AAS 63 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 how to administer 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, to name a few examples. Minnesota State Community and Technical College 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.

Students applying to the practical nursing program must:

* have a high school GPA of 2.5 or greater

OR

* have a GED score of 500 or greater

OR

* have earned 12 or more college credits, with a GPA of 2.5 or greater

* have completed the 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.

Prerequisites:

1. ACCUPLACER testing in math, reading and writing. Any needed developmental courses must be completed before entering any PNSG prefix course.

2. Completion of the certified Nursing Assistant or evidence of NA course completion within last five years.

3. Completion of CPTR1100 or successful test out of the course.

4. CPR for Health Care Providers, or equivalent, is required prior to taking any nursing courses.

Course #	Course Title	Crds
PNSG1216	PN Clinical I	5
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
ENGL1101	College Writing.....	3
PSYC2222	Developmental Psychology.....	3
PNSG1207	Health Promotion I.....	5
PNSG1214	Nursing Pharmacology.....	2
PNSG1200	Concepts of Nursing.....	2
PNSG1217	Health Promotion II.....	4
PNSG1220	Psychosocial Nursing.....	3
PNSG1234	Nursing Roles.....	1
PNSG1226	PN Clinical II	4
PNSG1236	Practical Nursing Practicum.....	2
PNSG1209	Family Wellness	3
PNSG1223	Health Promotion III.....	4
	MN Transfer Elective.....	30
	Practical Nursing Elective	1

Project Design Technician

Certificate 15 Credits

CTS

The Project Design Technician certificate provides training in manufacturing processes, materials properties, CAD, project management and communication techniques for design workers at Marvin Windows and Doors. The program prepares workers to meet client needs by designing appropriate products and providing exemplary internal and external customer service.

Course #	Course Title	Crds
CUST1108	Drafting Princ for Windows & Doors.....	3
CUST1106	Cust Window & Door CAD & Design	3
CUST1104	Window & Door Const Methods & Knowledge.....	3
CUST1102	Communication & the Customer	3
	Technical Electives.....	3

Radiologic Technology

AAS 89 Credits

D E

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 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.

Applicant selection to enter into the major is done each Spring for the Fall term. The application deadline is January 15, with selection to be completed by mid-April.

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.

Prerequisites/Admission Requirements:

1. General College Admissions Requirements

-Official high school transcript or GED

-Immunization forms

-Official transcripts from other colleges you have previously attended are required for admission.

2. Accuplacer testing in math, reading, and writing or a waiver. College readiness courses must be completed before entering any Radiology Technology courses. Waivers may be granted in some cases.

3. Consent to Disclose/Allied Health Division Student Data complete and on file (e.g. immunizations).

4. BCA Background Study upon program entry and annually thereafter.

5. Completion of the following courses:

a. BIOL2230: Human Anatomy & Phys I

b. CHEM1100: Fund Concepts of Chemistry

c. ENGL1101: College Writing

d. MATH1114: College Algebra

e. BIOL2232: Human Anatomy & Phys II

f. PHYS1105: Fund Concepts in Physics

g. PSYC1200: General Psychology

h. RADT1108: Intro to Rad Tech/Pat Care

6. CPR Certification for Healthcare Providers current and maintained throughout program.

7. Cumulative GPA of 2.5 or higher; applications on academic probation or suspension will not be eligible for admission.

See Applicant Assessment form for more on the scoring process.

Prospective Students

If you wish to apply to the online program, go to <http://distance.minnesota.edu> ¹/₂ Online Support ¹/₂ for more general information, or ¹/₂ Live Chat ¹/₂ for live discussion with the online support office, or ¹/₂ Ask a Question ¹/₂ to post your own question. Admissions and application information will also be found on the Distance Minnesota web site.

If you wish to apply to the campus program, click on the ¹/₂ Apply to a Campus ¹/₂ link on the left side of this page.

If you wish to apply for both programs, follow both processes above.

Course #	Course Title	Crds
BIOL2230	Human Anatomy and Physiology I.....	3
BIOL2232	Human Anatomy and Physiology II.....	3
CHEM1100	Fund Concepts Chemistry	3
ENGL1101	College Writing.....	3
MATH1114	College Algebra.....	4
RADT2244	Legal/Ethical Issues in Rad Tech	3
PHYS1105	Fundamental Concepts in Physics.....	3
PSYC1200	General Psychology	3
CPTR1100	Fund Computer Concepts.....	1
RADT1158	Clinical Radiography II	6
HLTH1106	Medical Terminology.....	2
RADT1108	Intro to Rad Tech/Pat Care.....	3
RADT1114	Radiographic Proc I.....	4
RADT1148	Clinical Radiography I	6
RADT1144	Radiographic Procedures III	3
RADT1124	Radiographic Proc II.....	4
RADT1168	Clinical Radiography III.....	6
RADT1140	Radiographic Imaging	4
RADT2222	Imaging Equipment.....	3
RADT2248	Clinical Radiography IV.....	6
RADT2250	Radiographic Pathology.....	3
RADT2258	Clinical Radiography V	7
RADT2280	Board Review.....	2
RADT1132	Principles of Radiobiology.....	4

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 (HVAC/R). 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 manufacturers, 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 the indoor air quality (IAQ) 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.

Course #	Course Title	Crds
REFR1115	Refrigeration Electrical Circuits Lab.....	3
COMM1100	Power and Communications in Human Relations.....	3
GSMS1000	Technical Mathematics.....	3
REFR2216	Refrigeration Internship.....	3
REFR1113	Refrigeration Electrical Circuits Fundamentals.....	3
REFR1102	Refrigeration Principles.....	3
REFR1104	Refrigeration Lab.....	4
REFR1106	Electrical Fundamentals.....	3
REFR1108	Electrical Lab.....	3
REFR1110	Refrig, A/C & Htg Prin.....	3
REFR1112	Refrig, A/C & Htg Lab.....	3
REFR2202	Commercial Refrig & A/C Prin.....	4
REFR2204	Commercial Refrig & A/C Lab.....	3
REFR2206	Commercial Electrical Prin.....	3
REFR2208	Commercial Electrical Lab.....	3
REFR2212	Adv Refrigeration Lab.....	3
REFR1140	Gas Heating.....	2
CPTR1104	Intro to Computer Tech.....	3
REFR2220	HVAC Troubleshooting.....	3
REFR2215	Advanced Electrical Applications.....	3
REFR2213	Advanced Electrical Theory.....	3
REFR2211	Advanced Refrigeration Principles.....	4

Sales and Marketing

Diploma 32 Credits

D

This program prepares graduates to enter a sales and marketing career. 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.

Course #	Course Title	Crds
ACCT1108	Business Math/Calculators.....	3
CPTR1104	Intro to Computer Tech.....	3
MKTG1100	Prin of Marketing.....	3
MKTG1106	Professional Selling.....	3
MKTG1110	Customer Service.....	3
MKTG1112	Retail Management.....	3
MKTG2204	Advanced Professional Selling.....	3
MKTG2290	Supervised Occup Exp I.....	3
	Technical Electives.....	8

Sign Language Interpreter Preparation

AAS 65 Credits

M

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 to prepare students for the profession of sign language interpreting. Students will experience a variety of learning environments, including classroom work, laboratory practice and field placement.

Course #	Course Title	Crds
IPP1111	Introduction to Interpreting.....	3
IPP1113	Beginning English to ASL.....	3
IPP2113	Advanced English to ASL.....	3
COMM1120	Introduction to Public Speaking.....	3
ASL2100	Linguistics of American Sign Language.....	3
IPP1112	Beginning ASL to English.....	3
ASL1113	ASL & Deaf Culture III.....	4
ASL1114	ASL & Deaf Culture IV.....	4
IPP2218	Internship Seminar.....	1
IPP2217	Interpreting Internship.....	6
PSYC1200	General Psychology.....	3
COMM223	Intercultural Communication.....	3
IPP2216	Practicum.....	1

IPP2215	Topics in Interpreting.....	2
ASL2000	Advanced Fingerspelling, Numbers, and Classifiers.....	2
IPP2114	Educational Interpreting.....	2
CPTR1100	Fund Computer Concepts.....	1
ASL1111	ASL & Deaf Culture I.....	3
ENGL1101	College Writing.....	3
ASL1115	American Sign Language and Deaf Culture V.....	3
IPP2112	Advanced ASL to English.....	3
ASL1112	ASL & Deaf Culture II.....	3
	MN Transfer Elective.....	3

Supervisory Leadership

Certificate 30 Credits

CTS

This program prepares working foremen, team leaders and supervisors with a knowledge base in practices and principles of leadership, supervision and management. Core elements include human resource policies, interpersonal communication, organizational behavior, quality and customer service issues, and industry fiscal and safety requirements.

Course #	Course Title	Crds
PSYC1101	Human Interaction.....	3
SPCH1112	Small Group Communication.....	3
ADMS1116	Business Communications I.....	3
ATEC2238	Quality Planning & Control.....	3
SUPL1118	Lead & Facilitate Teams.....	3
METC2260	Project Management.....	3
MKTG1120	Supervisory Leadership.....	3
HRES1122	Human Resource Management.....	3
SUPL1110	Budget & Financial Mgmt.....	3
BUS2206	Principles of Marketing.....	3

Supervisory Leadership

AAS 60 Credits

CTS

This program prepares working foremen, team leaders and supervisors with a knowledge base in practices and principles of leadership, supervision and management. Core elements include human resource policies, interpersonal communication, organizational behavior, quality and customer service issues, and industry fiscal and safety requirements.

Course #	Course Title	Crds
ENGL1101	College Writing.....	3
PHIL1201	Ethics.....	3
PSYC1101	Human Interaction.....	3
SPCH1114	Intro to Public Speaking.....	3
SPCH1112	Small Group Communication.....	3
ADMS1116	Business Communications I.....	3
ATEC2238	Quality Planning & Control.....	3
CPTR1100	Fund Computer Concepts.....	1
METC2260	Project Management.....	3
MKTG1110	Customer Service.....	3
MKTG1120	Supervisory Leadership.....	3
HRES1122	Human Resource Management.....	3
SUPL1110	Budget & Financial Mgmt.....	3
SUPL2212	Linking People & Productivity.....	3
SUPL2214	Supervisory Ldrshp Intern.....	3
METC2240	Risk Management.....	2
	Technical Electives.....	9
	MN Transfer Elective.....	6

Supervisory Leadership Essentials

Certificate 18 Credits

CTS

This program prepares working foremen, team leaders and supervisors with a knowledge base in practices and principles of leadership, supervision and management. Core elements include human resource policies, interpersonal communication, organizational behavior, quality and customer service issues, and industry fiscal and safety requirements.

Course #	Course Title	Crds
SUPL1118	Lead & Facilitate Teams.....	3
SPCH1112	Small Group Communication.....	3
MKTG1120	Supervisory Leadership.....	3

HRES1122	Human Resource Management.....	3
ADMS1116	Business Communications I	3
BUS2206	Principles of Marketing.....	3

Sustainable Food Production

Diploma 30 Credits

F

M State's hands-on Sustainable Food Production diploma program gives students the knowledge and skills necessary to meet the many agricultural and environmental challenges facing food production in the 21st century. Students enrolled in M State's food production program will emerge at the forefront of this critical subject and will be prepared to grow food themselves or contribute to the country and the world as innovative problem solvers and catalysts for positive change in this new paradigm of food production. In addition to practical agricultural curriculum, the program includes courses in sociology to assist students in understanding the cultural and community aspects of sustainable food production.

Course #	Course Title	Crds
SFP1100	Principles of Sustainability	3
SFP1200	Farm Ecology.....	3
SFP1301	Artisan Food & Value - Added Agriculture.....	3
SFP1302	Forage and Crop Systems	5
SFP1304	Practical Farm Skills.....	2
SFP1303	Grass-based Livestock Systems	4
SOC2222	Sociology of Agriculture.....	3
SFP1400	Farm Marketing and Management	3
SFP1500	Internship	4

Technological Studies I

Certificate 16 Credits

CTS

Individual who complete these certificates will have the broad-based technical training needed to directly enter current energy and manufacturing industries. These foundational technical skills will also support future learning in emerging renewable energy industries and the manufacturing companies that will support them.

Course #	Course Title	Crds
WELD1110	Blueprint Reading Symbols.....	2
METC2222	Fluid Power Systems.....	3
METC1114	Engineering Drawings/CAD I	3
IMMA1110	Intro Power & Mech Sys	3
TRNS1118	Welding I.....	2
METC2208	Basic Elec/Electronics	3

Technological Studies II

Certificate 11 Credits

CTS

Individual who complete these certificates will have the broad-based technical training needed to directly enter current energy and manufacturing industries. These foundational technical skills will also support future learning in emerging renewable energy industries and the manufacturing companies that will support them.

Course #	Course Title	Crds
METC2222	Fluid Power Systems.....	3
CONE2208	Programmable Logic Controllers.....	2
METC1152	Safety & Accident Prevent	3

Voice & Video Over Internet Protocol

Certificate 15 Credits

W

This 15-credit certificate will provide a series of courses specifically chosen to take a Telecommunications student, Computer Networking student or an industry professional into two major areas: 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.

Course #	Course Title	Crds
CVNP2210	Voice, Video & Data Convergence.....	4
CVNP2212	Voice Over IP and IP Telephony	4
CVNP2220	Video Over Internet Protocol.....	4
CVNP2222	Voice Video Over IP Systems Project.....	3

Web Development

Certificate 30 Credits

DE

Web development provides students with the opportunity to use both creative and technical skills. Students in the Web Development program will learn to develop and maintain customer-friendly interactive websites using the most sophisticated tools currently available. Students will gain a strong understanding, appreciation and practical knowledge of the processes involved in building a successful website and e-commerce storefront. The courses in the Web Development certificate are aligned with the CIW (Certified Internet Webmaster) Master Designer certification.

Course #	Course Title	Crds
INTD1113	Dreamweaver	3
INTD1124	Cascading Style Sheets.....	3
INTD1108	HTML	3
INTD1117	Photoshop.....	3
INTD1140	JavaScript.....	3
INTD2213	Flash.....	3
INTD2210	Interface Design.....	3
INTD1130	Electronic Commerce.....	3
	Technical Electives.....	3
	MN Transfer Elective	3

Web Development

Diploma 62 Credits

DE

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.

Course #	Course Title	Crds
INTD1150	Databases on the Server	3
INTD1124	Cascading Style Sheets.....	3
INTD1140	JavaScript.....	3
INTD1130	Electronic Commerce.....	3
INTD2213	Flash.....	3
INTD2210	Interface Design.....	3
INTD1108	HTML	3
INTD1113	Dreamweaver	3
INTD1117	Photoshop.....	3
INTD2236	Advanced Web Programming.....	3
CSEC1102	Careers in Information Systems.....	1
INTD2226	Web Programming.....	3
INTD2231	Emerging Technologies.....	1
INTD2228	Web Projects.....	3
INTD2238	Web Portfolio	3
INTD2246	PHP.....	3
	General Studies Electives.....	9
	Technical Electives.....	9

Web Development

AAS 65 Credits

DE

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.

Course #	Course Title	Crds
ENGL1101	College Writing	3
SPCH1114	Intro to Public Speaking.....	3
CSEC1102	Careers in Information Systems.....	1
INTD1140	JavaScript.....	3

INTD1150	Databases on the Server.....	3
INTD2236	Advanced Web Programming.....	3
INTD2246	PHP.....	3
INTD1108	HTML.....	3
INTD1124	Cascading Style Sheets.....	3
INTD1113	Dreamweaver.....	3
INTD1117	Photoshop.....	3
INTD2210	Interface Design.....	3
INTD2226	Web Programming.....	3
INTD2238	Web Portfolio.....	3
INTD2231	Emerging Technologies.....	1
INTD1130	Electronic Commerce.....	3
INTD2213	Flash.....	3
INTD2228	Web Projects.....	3
	MN Transfer Elective.....	12
	Technical Electives.....	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 in-home 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 varietals and review their histories and food compatibilities with classical wine varietals. Acquire a comprehensive wine vocabulary using professional terms and learn to describe your sensory impressions and evaluation of a wine into words. 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
WINE1400	New World Wines.....	2
WINE1300	Old World Wines.....	2
WINE1200	Food and Wine Pairing.....	2
WINE1100	Introduction to Wine.....	3

Course Descriptions

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Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
ABCT1100	Intro 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, intro to estimating guides, general service knowledge, professional work habits, industry standards and expectations. Pre/Corequisite(s): None	2	1/1/0	ACCT 2202	Financial Accounting II Lab This course is the 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. Pre/Corequisite(s): ACCT2212	1	0/1/0
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. Pre/Corequisite(s): None	4	2/2/0	ACCT 2203	Managerial Accounting Lab 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. Pre/Corequisite(s): ACCT2212	1	0/1/0
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. Pre/Corequisite(s): None	3	0/3/0	ACCT 2211	Financial Accounting I Introduction to the content and concepts 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. Pre/Corequisite(s): None	3	3/0/0
ABCT 1106	Introduction to Refinishing This course teaches students refinishing safety, use of tools and equipment surface preparation and refinishing material application procedures. Pre/Corequisite(s): None	2	1/1/0	ACCT 2212	Financial Accounting II 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. Pre/Corequisite(s): ACCT2211	3	3/0/0
ABCT 1110	Panel Replacement This course covers the replacement of damaged panels using current industry procedures. Pre/Corequisite(s): TRNS1102	2	1/1/0	ACCT 2213	Managerial Accounting This course focuses on strategic decision-making related to cost analysis and cost management. Pre/Corequisite(s): ACCT2212 or ACCT2211	3	3/0/0
ABCT 1112	Auto Body Refinishing This course teaches students preparation for overall refinishing procedures, paint mixing and color matching. It also teaches skills in spot repair, blending and application of pinstripping and chip guard. Pre/Corequisite(s): TRNS1102	4	1/3/0	ACCT 2215	Computerized Acct App This course is an introduction to computerized accounting applications and software used in the business environment. Topics may include general ledger accounting, payroll procedures, accounts receivable, accounts payable, inventory and depreciation. Pre/Corequisite(s): ACCT2211 and CPTR1104 or ACCT1012 and CPTR1104 or ACCT1012 and BUS1120 or ACCT2211 and BUS1120 or ACCT1012 and CSCI1155 or ACCT2211 and CSCI1155	3	2/1/0
ABCT 1114	Auto Body Lab II This is a lab course in which students will build proficiency in the auto body skills of refinishing, corrosion protection, rust repair, glass repair and welding.ABCT1106 and Pre/Corequisite(s): TRNS1118	4	0/4/0	ACCT 2216	QuickBooks This course is an introduction to computerized accounting applications and software used in the business environment. Topics may include general ledger accounting, payroll procedures, accounts receivable, accounts payable, inventory and depreciation. Pre/Corequisite(s): ACCT2211 and CPTR1104	3	2/1/0
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. Pre/Corequisite(s): TRNS1102	2	1/1/0	ACCT 2217	Advanced Computerized Accounting This course is a continuation of computerized accounting applications and software used in the business environment. Pre/Corequisite(s): ACCT2211 and CPTR1104	3	2/1/0
ACCT 1000	Business Math This course covers commonly occurring business-related calculations and how to apply these calculations to accounting and other business functions. Pre/Corequisite(s): None	2	2/0/0	ACCT 2255	Income Tax-Individual 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. Pre/Corequisite(s): None	3	2/1/0
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. Pre/Corequisite(s): None	3	2/1/0	ACCT 2256	Income Tax-Business 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. Pre/Corequisite(s): None	3	2/1/0
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. Pre/Corequisite(s): None	3	2/1/0	ACCT 2291	Volunteer Income Tax Assistance This course prepares the student for preparation of federal and state income tax returns for individuals. Emphasis is placed on form preparation with the use of computerized tax preparation software. Pre/Corequisite(s): ACCT2255	1	0/1/0
ACCT 1108	Business Math/Calculators This course covers how to make commonly occurring business-related calculations, how to apply these calculations to accounting and other business functions, and how to use the touch system on the computer number pad keyboard. Pre/Corequisite(s): None	3	2/1/0	ACCT 2295	Certified Bookkeeper Review Course 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. Pre/Corequisite(s): ACCT2211	3	3/0/0
ACCT 1120	Business Law This course is an introduction to the principles of law as they apply to citizens and businesses. Topics include the court system, legal system, contracts, negotiable instruments, and agency and employer/employee relationships. Pre/Corequisite(s): None	3	3/0/0	ACCT 2620	Intermediate Accounting I This course is 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 may include the income statement, balance sheet, statement of cash flows, and various asset, liability and equity sections. Pre/Corequisite(s): ACCT2212	4	3/1/0
ACCT 1124	Spreadsheet Applications This course covers the use of a computerized spreadsheet system for accounting applications. Topics include document creation, storage and retrieval, editing, printing, creating charts, database applications and file distribution. Pre/Corequisite(s): CPTR1104	3	2/1/0				
ACCT 2201	Financial Accounting I Lab This course is the lab course associated with Financial Accounting I (ACCT2211). Students must be enrolled in ACCT2211 to enroll in this course. Major content will be the practical application of concepts introduced in the lecture course. Pre/Corequisite(s): None	1	0/1/0				

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
ACCT 2622	Intermediate Accounting II	4	3/1/0	ADMM 1162	Intermediate Medical Transcription	3	1/2/0
<p>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. Pre/Corequisite(s): ACCT2620</p>				<p>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. This course is based on the Model Curriculum for Medical Transcription published by the Association for Healthcare Documentation Integrity. Pre/Corequisite(s): ADMM1160</p>			
ACCT 2630	Fund/Nonprofit Accounting	3	2/1/0	ADMM 2122	Medical Office Management	3	3/0/0
<p>This course is concerned with the fundamentals involved in fund/nonprofit accounting. It prepares students to apply basic governmental accounting principles and prepare financial statements for fund/nonprofit organizations. Pre/Corequisite(s): ACCT2212</p>				<p>his 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. Pre/Corequisite(s): ADMM1122</p>			
ACCT 2642	Accounting Internship	2	0/0/2	ADMM 2150	Medicare Coding and Billing Applications	3	2/1/0
<p>This course provides students with actual work experience in accounting careers. A competency-based internship plan is developed for each student. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): ADMM1152</p>			
ACCT 2643	Accounting Internship	3	0/0/3	ADMM 2154	Hospital Billing	2	1/1/0
<p>This course provides students with actual work experiences in accounting careers. A competency-based internship plan is developed for each student. Pre/Corequisite(s): None</p>				<p>This course covers billing processes related to the hospital claim form. Billing for inpatient, ambulatory surgery and hospital-based outpatient services are covered. Pre/Corequisite(s): ADMM1150 or ADMM1152</p>			
ACCT 2644	Special Problems I	1	0/1/0	ADMM 2234	Professional Development	2	2/0/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): ADMM1122 Medical Office Procedures or ADMM1152 Medical Billing and Insurance or ADMM1162 Intermediate Medical Transcription</p>			
ACCT 2645	Special Problems II	2	0/2/0	ADMM 2235	RMT Exam Review	1	1/0/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course prepares students to take the Registered Medical Transcriptionist (RMT) examination. Review of medical transcription rules and language will be integral components 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. Pre/Corequisite(s): ADMM1162 Intermediate Medical Transcription</p>			
ACCT 2800	Accreditation Council for Accountancy and Taxation Exam Review	3	2/1/0	ADMM 2252	Advanced Coding	3	2/1/0
<p>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 financial accounting, internal control, professional ethics, business consulting services, managerial accounting, business law and taxation. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): ADMM1152</p>			
ADMM 1110	Medical Documentation Fundamentals	4	2/2/0	ADMM 2258	Certified Professional Coder Examination Review1	1/0/0	
<p>This course covers the fundamentals of health care documentation and medical record production, legal and ethical issues and responsibilities, text expansion software usage, utilization of medical references, and grammar and punctuation in health care-related communication. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMM 1122	Medical Office Procedures	4	3/1/0	ADMM 2260	Certified Professional Coder - Hospital Examination Review	1	1/0/0
<p>This course offers hands-on training in the tasks performed by medical administrative personnel in a medical office setting. Topics include healthcare careers, legal and ethical responsibilities, medical appointments and calendars, professional communication including telephone techniques, health information responsibilities, meeting and travel arrangements, introduction to medical office management and career search strategies. Pre/Corequisite(s): HLTH1116</p>				<p>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. Pre/Corequisite(s): ADMM2252</p>			
ADMM 1140	Medical Language Applications	3	3/0/0	ADMM 2268	Advanced Medical Transcription	3	1/2/0
<p>This course provides an in-depth exploration of medical terms used in pharmacology, radiology, laboratory and pathology, surgery, psychiatry, oncology, podiatry and physical and 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. Pre/Corequisite(s): HLTH1116</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMM 1150	Medical Billing/Insurance	4	3/1/0	ADMM 2270	Medical Office Simulation	2	1/1/0
<p>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. Pre/Corequisite(s): HLTH1116</p>				<p>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 prior to graduation as students will employ skills mastered over the course of their program enrollment in this experience. Students will develop 10-key skills necessary for billing and insurance practices in a medical facility. Pre/Corequisite(s): ADMM1122</p>			
ADMM 1152	Outpatient Coding	4	3/1/0				
<p>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. Pre/Corequisite(s): HLTH1116 Medical Terminology or HLTH1108 Introduction to Anatomy and Physiology</p>							
ADMM 1160	Beginning Medical Transcription	3	1/2/0				
<p>This course covers the transcription of basic healthcare dictation, incorporating skills in the English language, technology, medical knowledge, proofreading, editing and research, while meeting progressively demanding accuracy standards. Students are expected to possess the ability to type 45 words per minute in order to successfully complete this course. This course is based on the Model Curriculum for Medical Transcription published by the Association for Healthcare Documentation Integrity. Pre/Corequisite(s): ADMM1110, ADMM1110</p>							

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
ADMM 2272	Medical Transcription Practicum	3	0/3/0	ADMS 1128	Records/Database Management	3	2/1/0
<p>This course provides the required office-simulation setting with a minimum of 600 minutes of dictation (100 transcription hours) from The Model Curriculum for Medical Transcription.</p> <p>Pre/Corequisite(s): ADMM2268</p>				<p>This course is an introduction to the procedures and rules for indexing and storing documents in alphabetic, numeric, geographic, subject and chronological systems. It also includes an introduction to the procedures for managing document/record storage systems. Applications include electronic storage and retrieval using database software for microcomputers.</p> <p>Pre/Corequisite(s): None</p>			
ADMM 2276	Evaluation and Management Coding Practices	3	2/1/0	ADMS 1130	Office Software Applications	3	2/1/0
<p>This course will teach students to appropriately assign evaluation and management codes based on the physician documentation. Students will abstract information from health care documentation and assign appropriate levels of service.</p> <p>Pre/Corequisite(s): ADMM1152</p>				<p>This course is designed to provide the student with software application skills in spreadsheets, databases and email as used in the office environment. Topics include applying document formatting, managing workbooks/worksheets, demonstrating importing and exporting of data, refining queries, generating forms and reports, organizing items using folders, customizing calendar settings, scheduling meetings and appointments, and creating groups and distribution lists.</p> <p>Pre/Corequisite(s): None</p>			
ADMM 2290	Medical Administrative Internship	3	0/0/3	ADMS 1140	Internship	2	0/0/2
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is designed to provide the student 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.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 90	Basic Keyboarding	1	0/1/0	ADMS 1142	Career Internship I	2	0/0/2
<p>The student's basic keyboarding techniques are developed through the use of the computer in this course. 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.</p> <p>Pre/Corequisite(s): None</p>				<p>This is a career enrichment course designed to give students an in-depth understanding of professional employment expectations and opportunities. This course will emphasize the expectations career professionals face in today's workplace regarding interpersonal communication, decision making, ethical behavior, policies, professional conduct, project completion, team building, and time and resource management. Students will use course concepts and skills to complete a professional project in their area of career interest.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1100	Keyboarding I	3	1/2/0	ADMS 1150	Intro to Windows	1	0/1/0
<p>This course covers the development of keyboarding and formatting techniques. Emphasis is on building speed and accuracy in the operation of the alphabetic, numeric, symbol and service keys and in introducing document formatting concepts. Proofreading skills are stressed.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers basic information about computer hardware and software and the use of the Windows operating environment for application packages.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1102	Keyboarding II	3	1/2/0	ADMS 1152	Intro to Word Processing	1	0/1/0
<p>This course covers advanced formatting and text editing techniques. Emphasis is on building speed and increasing accuracy in the operation of the alpha, numeric and symbol keys and in developing text editing concepts, critical thinking and decision making. Enhanced proofreading, editing and revising skills are developed.</p> <p>Pre/Corequisite(s): ADMS1100</p>				<p>This course covers the operation of personal computer hardware and the use of word processing applications to perform word processing functions.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1104	Skillbuilding	1	0/1/0	ADMS 1154	Intro to Spreadsheets	1	0/1/0
<p>This course is designed to increase keyboarding speed and improve accuracy through personal goal setting, error analysis and intensive corrective practice work.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the operation of personal computer hardware and the use of spreadsheet software.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1108	Data Entry	3	1/2/0	ADMS 1156	Intro to Database	1	0/1/0
<p>This course introduces the basic principles and techniques of operating data entry equipment. The course also develops a skill level proficiency in data entry.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the operation of personal computer hardware and the use of database software.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1110	Word Processing	3	2/1/0	ADMS 1158	Intro to Presentation Software	1	0/1/0
<p>This course gives students an in-depth understanding of the word processing techniques needed to facilitate the production, documentation, storage and relay of information. The course stresses increased proficiency in the computer production of a variety of business documents.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the operation of personal computer hardware and the use of presentation software.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1112	Desktop Publishing	3	1/2/0	ADMS 1160	Intro to Internet	1	0/1/0
<p>This course introduces the concepts, terminology, techniques and applications of desktop publishing and incorporates advanced document processing skills. The student develops skills in critical thinking, decision making and creativity. In addition, the student will reinforce collaborative learning in planning, designing and evaluating business documents.</p> <p>Pre/Corequisite(s): None</p>				<p>This course teaches the fundamentals of the World Wide Web and how it works. Students will learn to use an Internet browser to browse Web pages, understand Web page management techniques, save and print material obtained from a website and communicate with others on the Web.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1116	Business Communications I	3	2/1/0	ADMS 1162	Intro Desktop Publishing	1	0/1/0
<p>This course covers composing, editing and proofreading memos, letters and other business documents. The principles of grammar, punctuation, spelling and word usage are developed and applied. The application of teamwork and critical thinking skills are included in the course.</p> <p>Pre/Corequisite(s): Completion of ENGL0050 and ENGL0040 with a grade of C or higher or ENGL0096 with a grade of C or higher or placement in ENGL1101.</p>				<p>This course introduces the concepts, terminology, techniques and applications of desktop publishing.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1120	Office Procedures	3	2/1/0	ADMS 2124	Computer Technology Information	3	2/1/0
<p>This course covers procedures relevant to a traditional office and new procedures relevant to an electronic automated office. Topics may include work organization, time management, ergonomics, scheduling, organizing meetings, processing mail, telephone procedures and arranging travel. The course also provides the student with an in-depth exposure to the role and responsibilities of a receptionist.</p> <p>Pre/Corequisite(s): None</p>				<p>This 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.</p> <p>Pre/Corequisite(s): None</p>			
ADMS 1124	Proofreading/Editing	2	1/1/0	ADMS 2202	Advanced Word Processing	3	2/1/0
<p>This course provides instruction and practice to improve proofreading and editing skills. Students detect and correct errors in capitalization, content, format, grammar, keyboarding, number usage, punctuation, spelling, word division and word usage. Students use standard revision and editing symbols to edit for clarity and conciseness.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): ADMS1110</p>			

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
ADMS 2212	Integrated Office Software Applications	3	2/1/0	ADMT 2600	Trends in Office Technology	3	2/1/0
<p>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. Pre/Corequisite(s): ADMS1100 and CPTR1104 or ADMS1110 and CPTR1104</p>				<p>This course is designed to address current 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. Pre/Corequisite(s): CPTR1104</p>			
ADMS 2216	Business Communications II	3	2/1/0	AMST 1102	Alignment and Suspension I	3	1/2/0
<p>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 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. Pre/Corequisite(s): ADMS1116</p>				<p>This course teaches about the various types of suspension system in use today. McPherson strut, leaf spring, coil spring and torsion bar systems are a few of the systems covered. Caster, camber and toe, as well as other alignment angles, are covered in this course. Wheel balance using the latest road force technology is also covered. Operation, diagnosis and repair of both manual and power steering systems are covered in this course. Pre/Corequisite(s): None</p>			
ADMS 2218	Presentation Applic (PPT)	1	0/1/0	AMST 1105	Brakes I	3	1/2/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course teaches the basic principles of disc and drum brakes, hydraulic system 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 in this course. Pre/Corequisite(s): None</p>			
ADMS 2222	Adv Desktop Publishing	3	1/2/0	AMST 1109	Starting & Charging	3	2/1/0
<p>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. Pre/Corequisite(s): ADMS1112</p>				<p>This course involves the understanding and service of batteries, charging systems and starting systems. The student will perform tests on the mentioned items using bench testing as well as vehicle testing. Repair will involve rebuilding items as well as weighing the cost of replacement. Pre/Corequisite(s): None</p>			
ADMS 2240	Internship	3	0/0/3	AMST 1111	Automotive Electronics	3	2/1/0
<p>This course is designed to provide the student 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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMT 1173	Microsoft Office Access Certification	1	0/1/0	AMST 1114	Basic Maintenance Service	1	1/0/0
<p>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. Pre/Corequisite(s): CPTR1104</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMT 1174	Microsoft Office PowerPoint Certification	1	0/1/0	AMST 1116	General Automotive Service	5	3/2/0
<p>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. Pre/Corequisite(s): CPTR1104</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMT 2222	Event Planning	2	2/0/0	AMST 1122	Engines I	3	2/1/0
<p>This course explores the principles and practices involved in planning and administering 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. Pre/Corequisite(s): None</p>				<p>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 in this course. Pre/Corequisite(s): TRNS1102</p>			
ADMT 2224	Applied Event Management	1	0/1/0	AMST 1126	Engines II	3	1/2/0
<p>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. Pre/Corequisite(s): ADMT2222</p>				<p>This course covers the disassembly, diagnosis, measurement, service, assembly and adjustment of engines and components. Cylinder head, valve train, cylinder block assemblies, cooling and lubrication systems are thoroughly covered. Pre/Corequisite(s): None</p>			
ADMT 2236	Administrative Project Management	3	2/1/0	AMST 1132	Drive Trains I	3	2/1/0
<p>Project management is a powerful set of tools and practices that provide a systematic approach to planning, organizing, controlling and leading a project to successful completion. This course guides the student 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. Pre/Corequisite(s): CPTR1104</p>				<p>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. Pre/Corequisite(s): None</p>			
ADMT 2300	Office Graphics and Presentations	3	2/1/0	AMST 1136	Drive Trains II	3	1/2/0
<p>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. Pre/Corequisite(s): CPTR1104</p>				<p>This course covers drive axles, drive shafts, front and rear wheel bearing 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. Pre/Corequisite(s): None</p>			
				AMST 2201	Alignment and Suspension II	3	2/1/0
				<p>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. Pre/Corequisite(s): None</p>			

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AMST 2206	Body Electrical/Mechanical I	3	1/2/0	ARCH 2226	Residential Project II	4	1/3/0
<p>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 control service will also be performed. Common vehicle accessories will be addressed. Pre/Corequisite(s): None</p>				<p>This course will introduce building design and construction requirements for multi-family housing. The course will cover the processes for the selection of building materials and their integration into construction documents. Pre/Corequisite(s): ARCH1112 and ARCH1126</p>			
AMST 2209	Body Elec/Mechanical II	3	1/2/0	ARCH 2230	Mechanical and Electrical Integration	2	1/1/0
<p>This course focuses on computer-controlled body components and safety systems. Diagnostics will involve the use of scan tools, multimeters and lab scopes applied to a variety of body controlled devices. One will learn how the various controllers communicate with each other through a variety of bussed circuits. Pre/Corequisite(s): None</p>				<p>This course will review the examination of structural, mechanical, plumbing and electrical systems in buildings. Content will include analysis of structural framing systems, plumbing and HVAC systems, and power and lighting systems. Pre/Corequisite(s): ARCH1112 and ARCH1126</p>			
AMST 2211	Exhaust Analysis Fuel Sys	3	2/1/0	ARCH 2236	Presentation	2	0/2/0
<p>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. Pre/Corequisite(s): None</p>				<p>Students in this course will develop design schematics and a set of presentation drawings for a commercial project. Emphasis will be on verbal and visual presentation techniques. Pre/Corequisite(s): ARCH1112 and ARCH1126</p>			
AMST 2214	Electronic Powertrain Control I	3	2/1/0	ARCH 2244	Commercial Projects	4	1/3/0
<p>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. Introduction to sensor inputs, management operation and operational commands are addressed. Pre/Corequisite(s): None</p>				<p>This course will cover 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. Pre/Corequisite(s): ARCH2226 and ARCH2240</p>			
AMST 2220	Ignition Systems	3	2/1/0	ARCH 2248	CADD Alternatives	3	1/2/0
<p>This course will cover the operation of the ignition system. The student will learn how various ignition systems work on various systems so they will have the understanding to diagnose and repair ignition problems. Pre/Corequisite(s): None</p>				<p>This course will familiarize the student with computer drafting and modeling software for the graphic design of residential construction. Pre/Corequisite(s): None</p>			
AMST 2225	Brakes II	3	2/1/0	ARCH 2250	Project Administration	2	1/1/0
<p>This class is a continuation of AMST 1105 Brakes I. Students will look at a progression of anti-lock brake, traction control, electronic stability control and manufacturer variations of these systems. Students will perform scan tool diagnostics, circuit analysis, circuit repair and bleeding procedures involving anti-lock brake systems. The student will perform on-car operations with brake part replacement, machining of drums and rotors, and hydraulics. Pre/Corequisite(s): None</p>				<p>This course provides an understanding of architectural firm structures and legal issues as well as project management procedures used throughout documentation, bidding and construction administration. Pre/Corequisite(s): ARCH2226</p>			
AMST 2233	Automatic Transmission I	3	2/1/0	ARCH 2256	Rendering Architecture	3	1/2/0
<p>This course involves the principles of the many systems combined into an automatic transmission. The student will understand planetary gearing, clutch operation, band application and one-way clutching as it pertains to power flow through 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. Pre/Corequisite(s): AMST1111 and TRNS1102</p>				<p>This course provides the advanced use of computer-aided drafting and modeling using AutoCAD for Architecture software and its related rendering application. The course will develop CADD configuration skills, advanced modeling techniques and various presentation renderings. Pre/Corequisite(s): ARCH1112</p>			
AMST 2237	Automatic Transmissions II	3	1/2/0	ART 1107	Foundations of Art, 2-D	3	3/0/0
<p>The student will practice many of the 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. Pre/Corequisite(s): AMST2233</p>				<p>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. Pre/Corequisite(s): None</p>			
AMST 2240	Heating Ventilation A/C	3	1/2/0	ART 1108	Foundations of Art, 3-D	3	3/0/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course 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. Pre/Corequisite(s): None</p>			
ANTH 1100	Anthropology	3	3/0/0	ART 1110	Intro to Art	3	3/0/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
ARCH 1122	CADD for Architecture	4	2/2/0	ART 1111	Beg Drawing	3	3/0/0
<p>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. Pre/Corequisite(s): CADD1102 and ENGR1132</p>				<p>Meets MnTC Goal Area 6F. This course introduces students to basic drawing media and to the visual elements in relationship to drawing. Accurate observation of still life and nature are emphasized. Pre/Corequisite(s): None</p>			
ARCH 1126	Residential Project I	3	1/2/0	ART 1112	Beg Painting	3	3/0/0
<p>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. Pre/Corequisite(s): ENGR1126 and ENGR1132</p>				<p>Meets MnTC Goal Area 6F. This course introduces students to techniques and visual elements of painting. Throughout the course, we will look at contemporary and historical approaches to painting by viewing the work of artists from various periods in art. Pre/Corequisite(s): ART1111</p>			
ARCH 2218	Architectural Internship	3	0/0/3	ART 1113	Drawing II	3	3/0/0
<p>This course provides the student with an occupational experience in the architectural technology field. Each internship is an individualized experience. Pre/Corequisite(s): ARCH1126</p>				<p>Meets MnTC Goal Area 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 use of composition and color are emphasized. Subject matter includes still life, nature drawing and figure drawing. Pre/Corequisite(s): ART1111</p>			
				ART 1117	Beginning Printmaking	3	3/0/0
				<p>Meets MnTC Goal Areas 6F and 2. Students will complete works in a variety of printmaking techniques while creating original works of art. Students will also learn how to maintain a print studio. Pre/Corequisite(s): ART1107 or ART1111</p>			
				ART 1118	Intro to Watercolor	3	3/0/0
				<p>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</p>			

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	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. Pre/Corequisite(s): None						
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. Pre/Corequisite(s): 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. Pre/Corequisite(s): None						
ART 1123	Global Art History: Asian, Islamic, African, Mesoamerican	3	3/0/0				
	This course 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. Pre/Corequisite(s): 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. Pre/Corequisite(s): 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 provide a more immediate opportunity to express creativity. Pre/Corequisite(s): 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. Pre/Corequisite(s): None						
ART 2241	Advanced Ceramics	3	2/1/0				
	This course 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 Pre/Corequisite(s): ART1141						
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. Pre/Corequisite(s): ART1107 and ART1111						
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. Pre/Corequisite(s): None						
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. Pre/Corequisite(s): DVCM0006 and ENGL0050 or ENGL1101						
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. Pre/Corequisite(s): ASL1111						
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 improvement of 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. Pre/Corequisite(s): ASL1112						
ASL 1114	American Sign Language and Deaf Culture IV	4	4/0/0				
	This course, the fourth in a series of American Sign Language (ASL) and Deaf Culture courses, 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. Pre/Corequisite(s): 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. Pre/Corequisite(s): ASL1114 and Grade of C or better in ASL1114						
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. Pre/Corequisite(s): ASL1114 and Grade of C or better in ASL1114						
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. Pre/Corequisite(s): ASL1114 and Grade of C or better in ASL1114						
BIOL 1102	Introduction to Horticulture	3	2/1/0				
	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. Pre/Corequisite(s): College level reading skills						
BIOL 1104	Biology of Human Concerns	3	2/1/0				
	This course 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 introduced as needed to understand the topics studied. This course is intended for non-science majors and consists of lecture and laboratory components. Pre/Corequisite(s): None						
BIOL 1107	Environmental Science Issues	3	3/0/0				
	Meets MnTC Goal Areas 2, 3 and 10. This course involves the discussion and study of ecosystems, biodiversity, human adaptations to and modifications of those 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. Pre/Corequisite(s): None						
BIOL 1108	Env Science Issues Lab	1	0/1/0				
	Meets MnTC Goal Areas 2, 3 and 10. This course includes laboratory work completed in conjunction with BIOL 1107 Environmental Science Issues. Laboratory experiences may include lab and field exercises, computer simulations and collection and analysis of data related to current environmental issues and their possible solutions. This optional lab must be taken concurrently with BIOL 1107. Pre/Corequisite(s): None						
BIOL 1111	General Biology I	4	3/1/0				
	Meets MnTC goal areas 3 and 10. This course is a study of the cellular organization of an organism, its physiology and its genetics. The emphasis on cellular study includes its basic organization, metabolic activities (cellular respiration and photosynthesis), reproduction and heredity. Students will also study organic evolution and ecological interactions. Lab work will include outdoor activities, microscopic work, molecular genetics and genetics principles. The first semester in a two-course sequence of general biology. Pre/Corequisite(s): None						
BIOL 1112	General Biology II	4	3/1/0				
	This course meets MnTC goal areas 2 and 3. The course is a study of the entire animal organism with special emphasis on systems and requirements for life. The anatomy and physiology of animal organ systems are examined as well as plant nutrition, water relations, growth and reproduction. Lab work includes animal dissection and comparative anatomy and physiology. Plant lab work involves plant systems. Along with Biol 1111, this course is part of a two-semester sequence of general biology that can be taken in either order. Pre/Corequisite(s): None						
BIOL 1115	Introduction to Biotechnology	3	3/0/0				
	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. Pre/Corequisite(s): None						

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BIOL 1125	Basic Immunology	2	2/0/0				
<p>BIOL 1125 Basic Immunology is a course for Medical Laboratory Technician students and other health professionals. Topics covered in the course include principles of antigens, antibodies and their combination in health, disease and serological laboratory procedures. Includes diseases of hepatitis, AIDS, lupus, rheumatoid arthritis, Lyme disease, syphilis, infections, infectious mononucleosis and streptococcal infections. Pre/Corequisite(s): None</p>							
BIOL 1152	Food Science	3	3/0/0				
<p>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-like 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. Pre/Corequisite(s): None</p>							
BIOL 1161	Intro to Freshwater Biology	3	2/1/0				
<p>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. Pre/Corequisite(s): None</p>							
BIOL 2010	General Ecology	4	3/1/0				
<p>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 ecology 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. Completion of Math1020 or placement in a college level math and Pre/Corequisite(s): BIOL1111 and BIOL1112</p>							
BIOL 2202	Principles of Nutrition	3	3/0/0				
<p>Meets MnTC Goal Areas 2 and 3. This course is a study of the fundamental principles of nutrition. This course will cover food composition, diet planning, utilization of food 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. Pre/Corequisite(s): CHEM1111 and CHEM1100 and BIOL2230 and BIOL1111 and Any one of the prerequisite courses or instructor permission</p>							
BIOL 2220	General Microbiology	4	3/1/0				
<p>Meets MnTC Goal Area 3. This course provides an overview of the structure and function of microorganisms, including archaea, bacteria, viruses, fungi and parasites. 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 experiences, including aseptic technique, differential staining procedures, cultural and physical characteristics, biochemical testing, microbial control, microbiology of water and soil, and identification of unknown cultures. Pre/Corequisite(s): BIOL1111</p>							
BIOL 2230	Human Anatomy and Physiology I	3	2/1/0				
<p>Meets MnTC Goal Area 3. This course is 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. This course consists of lecture and laboratory components. Pre/Corequisite(s): None</p>							
BIOL 2232	Human Anatomy and Physiology II	3	2/1/0				
<p>This course meets MnTC Goal Area 3 and is a continuation of Anatomy and Physiology I. Topics will 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. Instruction is delivered in both lecture and laboratory formats. Pre/Corequisite(s): BIOL2230</p>							
BIOL 2240	Genetics	4	3/1/0				
<p>Meets MnTC Goal Area 3. This course is a study of the basis of heredity with emphasis on modern molecular and classical Mendelian genetics. This course is open to all students but is recommended for students majoring in biology and health-related areas. This course includes a laboratory which explores molecular and classical genetic techniques. Pre/Corequisite(s): BIOL1111 and CHEM1100 or BIOL1111 and CHEM1101 or BIOL1111 and CHEM1111</p>							
BIOL 2257	Medical Microbiology	3	2/1/0				
<p>Meets MnTC Goal Area 3. This course is the study of the structure and the classification of bacteria, viruses, parasites and fungi of medical importance. This course emphasizes the transmission of disease agents, signs and symptoms of disease, immunization, control of microbial growth, specimen collection/transport and methods of identification. An integrated lab includes basic techniques of culture, staining, biochemical testing and</p>							
					identification of known and unknown bacterial specimens, and identification of fungi and parasites from prepared slides. The course includes two hours of lecture and one two-hour lab per week. Pre/Corequisite(s): None		
				BIOL 2266	Diagnostic Microbiology	5	4/1/0
<p>Meets MnTC Goal Area 3. This course is the study of microorganisms of medical importance in relationship to disease and diagnosis. This course also emphasizes identification of bacteria in patient specimens, specimen collection, antimicrobial susceptibility testing, as well as introducing virology, mycology, parasitology and immunology. The laboratory covers basic techniques of identification of normal flora, pathogenic bacteria, fungi and parasites, including morphology, classification and cultivation of bacteria. Each student will be required to identify bacterial unknowns in broth. The course has four hours of lecture and one two-hour laboratory per week. Pre/Corequisite(s): None</p>							
				BIOT 2210	Biotechnology Methods I	3	1/2/0
<p>Biotechnology Methods I is the first in a two-semester sequence of courses 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 practices (GLPs) and good manufacturing practices (GMPs). This course meets for one hour of lecture and four hours of laboratory each week. Pre/Corequisite(s): BIOL1111 and BIOL1115 and CHEM1111</p>							
				BIOT 2220	Biotechnology Methods II	3	1/2/0
<p>Biotechnology Methods II is the second in a two-semester sequence of courses 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. Pre/Corequisite(s): BIOT2210</p>							
				BIOT 2230	Fundamentals of Bioprocessing	3	2/1/0
<p>Fundamentals of Bioprocessing is designed to train laboratory technicians in the technologies, procedures and processes utilized in the biotechnology industry to manufacture biologically-derived products. This course emphasizes the basic science, cellular metabolism and growth techniques used in the industry, examples of bioprocessed products currently on the market, conformity to good laboratory and good manufacturing practices (GLPs/GMPs), and compliance with federal regulations. Pre/Corequisite(s): BIOT2210</p>							
				BLDG 1102	Construction Safety	1	1/0/0
<p>This course provides students with an understanding of occupational safety practices, basic requirements, purpose and enforcement of general safety rules. Pre/Corequisite(s): None</p>							
				BLDG 1114	Blueprint Reading I	2	2/0/0
<p>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. Pre/Corequisite(s): None</p>							
				BLDG 1120	Construction Estimating I	2	1/1/0
<p>This course covers the mathematical procedures used in material estimating and completing quantity takeoffs for building projects. Pre/Corequisite(s): None</p>							
				BMGT 1112	Business Plan Development	2	1/1/0
<p>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. Pre/Corequisite(s): None</p>							
				BUS 1120	Spreadsheet & Database Concepts	3	3/0/0
<p>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. Pre/Corequisite(s): None</p>							
				BUS 1141	Introduction to Business	3	3/0/0
<p>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, marketing and consumer behavior, accounting, securities markets and the ethical and social responsibilities of business. Pre/Corequisite(s): None</p>							
				BUS 1143	Office Procedures	3	3/0/0
<p>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 is to be a professional in any field. Group dynamics as well as looking like a professional are just two of the topics covered. Pre/Corequisite(s): None</p>							

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BUS 1158	Free Mkt Enterprise Students who successfully complete the assigned projects as a member of Students in Free Enterprise (SIFE) may register for this course. Pre/Corequisite(s): None	2	2/0/0	CARP 1108	Interior Finish I This course focuses on materials used for interior finishing, plus hands-on experience in the application of these materials. Pre/Corequisite(s): CARP1104	4	1/3/0
BUS 1170	Intro to Agribusiness, Food Systems & Global Agriculture This course is an introduction to the economic environment of the agribusiness sectors of our economy. We will examine 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. Pre/Corequisite(s): None	3	3/0/0	CARP 1110	Introduction to Cabinet Building 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. Pre/Corequisite(s): None	3	1/2/0
BUS 2150	Legal Environment of Business This course offers 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. Pre/Corequisite(s): None	3	3/0/0	CARP 1112	Exterior Finish I 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. Pre/Corequisite(s): None	3	1/2/0
BUS 2202	Mgmt Information Sys The 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. Pre/Corequisite(s): None	3	3/0/0	CARP 2106	Footings & Foundations This course prepares the student with the knowledge and skills necessary to complete site layout, footings and foundations for residential construction. Pre/Corequisite(s): None	2	1/1/0
BUS 2204	Principles of Management 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. Pre/Corequisite(s): None	3	3/0/0	CARP 2202	Prin of Framing II This course is designed to enhance the student's knowledge of framing concepts from CARP1102. The instruction will explore complex applications of floor, wall, stair and roof construction. Pre/Corequisite(s): CARP1102 and CARP1104	3	3/0/0
BUS 2206	Principles of Marketing Principles of Marketing is an introductory study of marketing. This course 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. Pre/Corequisite(s): None	3	3/0/0	CARP 2204	Concrete Technology This course prepares the student with the knowledge and skills necessary to complete concrete flat work (basement floors, garage floors, driveways and sidewalks) for residential construction. Pre/Corequisite(s): CARP2106	2	0/2/0
BUS 2220	Global Business 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. Pre/Corequisite(s): None	3	3/0/0	CARP 2206	Adv Framing Applications This course is designed to increase the student's knowledge and skill level in floor, wall, stair, ceiling and roof framing. During this course the student will construct and install floor, wall, stair, ceiling and roof assemblies. Pre/Corequisite(s): CARP1104	6	0/6/0
CADD 1102	Fundamentals of CADD 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. Pre/Corequisite(s): None	4	2/2/0	CARP 2208	Exterior Finish II This course is designed to increase the student's knowledge, skills and proficiency in the application of windows, doors and roofing. Pre/Corequisite(s): CARP1112	3	0/3/0
CADD 1114	Intro to Solids & Parametric Modeling This course is an introduction to solid modeling and model derived drawing layouts using the latest versions of the Autocad, Inventor and Solidworks drawing software. Pre/Corequisite(s): CADD1102 and MCDD1102	4	2/2/0	CARP 2210	Interior/Exterior Finish Prin This course is designed to increase the student's knowledge of the materials and principles used in applying insulation, drywall, doors, interior trim and cabinets as well as exterior wall coverings, soffits, gutters and decks. Pre/Corequisite(s): CARP1108 and CARP1112	3	3/0/0
CADD 2214	Advanced Solids & Parametric Modeling This course covers advanced part modeling, assembly modeling, sheet metal and presentation files in the latest versions of the Inventor and Solidworks drawing software. Pre/Corequisite(s): CADD1114	4	2/2/0	CARP 2212	Interior Finish II This course is designed to increase the student's knowledge, skills and proficiency in the application of doors, trim, stair finish, cabinet installation, insulation and drywall. Pre/Corequisite(s): CARP1108	4	0/4/0
CARP 1102	Prin of Framing This course is designed to provide an understanding of the principles of floor, wall, stair and roof framing. Pre/Corequisite(s): None	3	3/0/0	CARP 2214	Exterior Siding This course provides the student an opportunity to install common window and exterior door units, exterior trim and exterior wall finish materials. Pre/Corequisite(s): None	2	0/2/0
CARP 1104	Framing I This course is designed to provide experience in constructing basic floor frames, wall frames, stair frames, and ceiling and roof frames. Pre/Corequisite(s): None	6	0/6/0	CARP 2216	Deck Construction This course focuses on application and techniques necessary to select materials and construct decks, railings and stairs according to a predetermined plan. Pre/Corequisite(s): CARP1112 and CARP2210	2	0/2/0
				CARP 2218	Soffits, Gutters, Gables This course provides practice for the student in the application of various exterior finish materials to the fascia, soffit and gable areas including special methods for gutters. Pre/Corequisite(s): None	2	0/2/0
				CARP 2220	Carpentry Internship This course provides the student with the opportunity to work for a contractor on a construction site practicing the skills learned in the first and second semesters of the Carpentry curriculum. The student experiences working with other employees under various working conditions. Pre/Corequisite(s): None	3	0/0/3
				CARP 2224	Advanced Cabinets This course provides advanced cabinet construction techniques for students. Emphasis is placed on doors, roll-outs, veneering and laminating. Pre/Corequisite(s): CARP1110	4	1/3/0
				CARP 2226	Special Projects/Topics The student works with an advisor/instructor to develop a contract with specific content goals in areas deemed applicable to the carpentry industry and the student's career plan. This opportunity may be limited due to conditions such as instructor/lab/material availability. Pre/Corequisite(s): None	2	0/2/0

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CDEV 1105	Development/Guidance	3	3/0/0	CHEM 1104	Medical Chemistry	4	3/1/0
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.				CHEM 1104 Medical Chemistry is an introductory course for Medical Laboratory Technician students covering the analytical principles, techniques and correlation of results in the science of body chemistry. Other topics included in the course are instrumentation, calculations, preparations of reagents, quality assurance and quality control, specimen collection, transportation, analysis and results reporting.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CHEM1100 and CHEM1101			
CDEV 1107	Introduction to Early Education	3	2/1/0	CHEM 1111	General Inorganic Chemistry I	5	4/1/0
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.				Meets MnTC Goal Areas 2 and 3. This course is the first course of a two-course series (CHEM1111 and CHEM1112). Students will learn the general chemistry principles: atomic structure, stoichiometry, solutions, bonding, thermochemistry, electronic structure, periodic properties of the elements, intermolecular forces and properties of solids, liquids and gases. The course includes a lab.			
Pre/Corequisite(s): None				Pre/Corequisite(s): MATH1020			
CDEV 2200	Integrating Play	3	2/1/0	CHEM 1112	General Inorganic Chemistry II	5	4/1/0
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.				Meets MnTC Goal Areas 2 and 3. This course is the second course of a two-course series (CHEM1111 and CHEM1112). Students will learn the general chemistry principles: solution chemistry, kinetics, chemical equilibrium, acid-base chemistry, solubility equilibrium, thermodynamics, oxidation-reduction, electrochemistry, coordination chemistry, nuclear chemistry and introductory environmental chemistry. The course includes a lab.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CHEM1111			
CDEV 2229	Imaginative Learning	3	2/1/0	CHEM 1115	Introduction to Organic and Biochemistry	4	3/1/0
This course provides an exploration of the home, center or school environment for children 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.				Meets MnTC Goal Areas 2 and 3. This course consists of both lab and lecture sessions. Students will learn the fundamental concepts in organic and biochemistry: properties, classification and nomenclature of hydrocarbons and compounds containing various functional groups; basic organic reaction mechanisms; and structure and metabolism of carbohydrates, lipids, proteins and nucleic acids.			
Pre/Corequisite(s): CDEV1105 and CDEV1107				Pre/Corequisite(s): CHEM1100			
CDEV 2236	Occupational Experience	1	0/0/1	CHEM 2224	Organic Chemistry I	5	4/1/0
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.				Meets MnTC Goal Areas 2 and 3. This course is the first course of a two-course series (CHEM2224 and CHEM2225). Students will learn organic chemistry principles including introduction to the classification, structure, reactions and reaction mechanisms of carbon compounds. The following topics will be included: structures and properties of organic compounds, methane and the alkanes, stereo chemistry, substitution and elimination reactions, electrophilic and free radical addition, alkenes, alkynes, and various functional groups, conjugation and resonance, benzene and the aromatics, aromatic-aliphatic compounds, alcohols and ethers. The course includes a lab which will include techniques for the purification, synthesis and characterization of organic compounds and the study of organic reactions. Green chemistry techniques will be practiced whenever possible.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CHEM1112			
CDEV 2238	Integrating Children with Special Needs	3	2/1/0	CHEM 2225	Organic Chemistry II	5	4/1/0
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 integrate knowledge of developmental needs, developmentally appropriate environments and effective teaching methods.				Meets MnTC Goal Areas 2 and 3. This course is the second course of a two-course series (CHEM2224 and CHEM2225). Students will learn the reactions and characteristics of various organic chemistry groups. The following topics will be included: aldehydes and ketones, carboxylic acids, amines, amides, phenols, carbanions, esters, aromatics, heterocyclic compounds, macromolecules and the possible addition of selected topics such as carbohydrates, fats, amino acids and proteins. The course includes a lab which will include purification, synthesis, and characterization of organic compounds and the study of organic reactions. Green chemistry techniques will be practiced whenever possible.			
Pre/Corequisite(s): CDEV2229				Pre/Corequisite(s): CHEM2224			
CDEV 2241	Observing and Assessing	2	1/1/0	CHIN 1101	Introduction to Chinese	3	3/0/0
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. Student will construct a child study based on assessments gathered throughout the course of the semester for one specific child.				Meets MnTC Goal Area 8. This course will introduce students to the Beijing (Mandarin) dialect of Chinese including basic grammar, the Pin Yin system of transliteration and reading and writing Chinese characters.			
Pre/Corequisite(s): CDEV 2200 and CDEV 2229				Pre/Corequisite(s): None			
CDEV 2242	Infant/Toddler Program	3	2/1/0	CIVL 1102	Survey I: Fundamentals	2	1/1/0
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.				The student will learn the principles of vertical distance measurement, as well as construction staking and the compiling of field notes typical of the civil engineering field. This course will focus on the use of various surveying equipment and procedures.			
Pre/Corequisite(s): CDEV1105 and CDEV1107 and CDEV2200 and CDEV2229				Pre/Corequisite(s): None			
CDEV 2244	Parent Professional Relations	3	3/0/0	CIVL 1119	Survey II: Land Surveys	3	1/2/0
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.				This course covers survey principles involved in civil engineering technology including topographic surveys, utilities, drainage and roadway alignment. This course emphasizes the use of Total Station and GPS for collecting data and CAD/Civil software for processing data.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CIVL1102			
CDEV 2246	Foundations in Literacy	3	3/0/0	CIVL 1138	CADD II: Plan Layout	3	2/1/0
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.				This course introduces students to industry-specific civil design software. They will learn the concepts relating to civil engineering drawings including topography, site planning, mapping and downloading survey data to create digital terrain models.			
Pre/Corequisite(s): CDEV1105 and CDEV1107 and CDEV2200 and CDEV2229				Pre/Corequisite(s): None			
CDEV 2290	Internship	3	0/0/3	CIVL 2209	Construction Inspection	3	2/1/0
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. This course is to be taken during the student's final semester in the program.				This course involves the study and performance of procedures necessary in the inspection and documentation of general construction of public works projects. Topics include inspector responsibilities, project management, aggregate base, concrete and bituminous inspection.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CIVL1102 or CIVL1102			
CHEM 1050	Lab Calculations/Procedures	1	1/0/0				
This course prepares students to apply mathematics (percents, metric system, molar mass, equivalent mass, molarity, normality, ratios, etc.) to formulas used in chemistry, histotechnology and the medical laboratory courses. The course emphasizes practical application of lab equations used to calculate quantities required to prepare chemical solutions/regents. An introduction to the basic laboratory measuring equipment will also be included. This course is intended for anyone taking a chemistry course.							
Pre/Corequisite(s): None							

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CIVL 2210	Road Design	3	2/1/0	COMM 2220	Oral Interpretation	3	3/0/0
The student will complete drawings and computations typical of those used in the design of roadways. These may include control line location maps, topographic drawings, cross sections, plan and profile earthwork computations. Pre/Corequisite(s): CIVL1119 and CIVL1138				Meets MnTC Goal Area 6. This course is intended to introduce students to the principles and techniques of selecting and analyzing appropriate literary selections and the interpretation of literature through vocal and nonverbal delivery. Pre/Corequisite(s): SPCH1114			
CIVL 2230	Civil Engineering Technology Internship	3	0/0/3	COMM 2230	Intercultural Communication	3	3/0/0
The civil engineering technology internship provides the student with an opportunity to apply skills and knowledge acquired in prior courses in the occupational setting. Students will develop a plan for the internship with the cooperation of the employer and the instructor. Pre/Corequisite(s): CIVL1138				Meets MnTC Goal Area 7. This course explores the nature of communication within and between cultures and co-cultures. This class will challenge students to think about their own cultural assumptions and explore ways in which these assumptions differ from those held by people in other cultures. Students will review theories of communication and culture and will examine how culture is evident in languages, behaviors, rituals, norms and worldviews. Students will observe and describe their own cultural background and will learn to respectfully communicate with members of other cultures. Pre/Corequisite(s): Assessment into ENGL 1101			
CIVL 2232	Survey III: Legal Surveys	3	2/1/0	CONE 1100	Electrical Safety	1	1/0/0
The student will apply history, principles, rules and laws pertaining to land surveying. The student will research land survey records, identify property boundaries, reconstruct land surveys and draft legal descriptions. Students will also participate in boundary survey projects. Pre/Corequisite(s): CIVL1119				This course provides students with an understanding of occupational safety practices and requirements associated with working in the electrical industry. It also covers the purpose and enforcement of general safety rules. Pre/Corequisite(s): None			
CIVL 2234	Utility Design	3	2/1/0	CONE 1102	Introduction to Electric Circuit Theory	4	2/2/0
The student will learn principles of sanitary, storm and water system layouts, design and construction. Design criteria and standards, plan and profile principles, cost estimating, construction staking and inspection of the different systems will be emphasized. Pre/Corequisite(s): CIVL1119 and CIVL1138				This introductory course provides the student with knowledge of electrical theory including atomic structure, Ohm's Law, series circuits, parallel circuits, complex circuits and sine wave principles as related to the National Electrical Code. Pre/Corequisite(s): None			
CIVL 2238	CADD III: Project Design	3	2/1/0	CONE 1104	Introduction to National Electrical Code	2	2/0/0
This course will focus on the application of civil design computer-aided drafting software for the completion of a project, where students apply principles of civil engineering drawing. Pre/Corequisite(s): CIVL1138				This course provides the student with an introduction to the National Electrical Code. The student develops basic skills and understanding of the National Electrical Code and how it applies to electrical applications in the field. Pre/Corequisite(s): None			
CIVL 2240	Introduction to Geographic Information Systems	3	3/0/0	CONE 1107	Introduction to Residential Wiring	3	1/2/0
The course will discuss different types of geographic information systems (GIS) and their capabilities, with the main focus on ESRI ArcMAP software. Topics will include GIS data collection and input, GIS data types and basic mapping concepts. Pre/Corequisite(s): CPTR1100 or CPTR1104				This course provides a fundamental technical understanding of residential wiring. Basic wiring skills for residential occupancies will be practiced in lab settings while applying National Electrical Code standards. Pre/Corequisite(s): None			
CIVL 2244	Survey IV: Equipment Software	3	2/1/0	CONE 1108	Electrical Circuit Theory	4	2/2/0
This class covers the application of TDS Survey Pro software as it applies to the TDS Ranger and Recon total stations data collectors. The students will learn these various software routines to make them more efficient with their day-to-day surveying. Pre/Corequisite(s): CIVL1102				This course provides the student with an understanding of complex RLC circuits, single-phase and three-phase circuit connections, transformer principles and calculations. Pre/Corequisite(s): CONE1102			
CIVL 2246	Introduction to Hydrology	3	3/0/0	CONE 1110	AC/DC Motors/Generators	4	2/2/0
This course will include introduction to hydraulic principles, hydrology, pipe and open channel flow, watershed analysis and storm water regulations. Pre/Corequisite(s): CIVL2234 and CIVL2240				This course provides a fundamental understanding of AC and DC motor generator theory and basic skills. This course includes types, construction, operation, installation and maintenance of AC and DC motors and generators. Pre/Corequisite(s): BLDG1102 and CONE1102			
COMM 1100	Power and Communications in Human Relations	3	3/0/0	CONE 1112	Residential Wiring	3	1/2/0
Meets MnTC Goal Areas 1 and 2. This course is designed to assist individuals to better understand themselves and their relationship to the world in which they live and make a living. This is accomplished through oral, written and intrapersonal/interpersonal communication skills, which are valued for life and work experiences. To be well-prepared for the future will require a greater understanding of human relations principles and practices. Changes in the evolution of the life/work environment are characterized by greater cultural diversity, more work performed by teams and greater awareness that "quality relationships are just as important as quality products in our global economy" as quoted in Effective Human Relations in Organizations by Reece and Brandt. It will be necessary to have the ability to cope effectively with today's life/work issues and problems that require extensive knowledge of human relationships. Pre/Corequisite(s): None				This course provides students with expanded technical understanding and 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. Pre/Corequisite(s): CONE1107			
COMM 1120	Introduction to Public Speaking	3	3/0/0	CONE 1114	National Electrical Code	2	2/0/0
Meets MnTC Goal Area 1. This course clarifies the process of oral communication, clarifies the basic principles of public speaking and allows the student to increase the application of these principles while both speaking and listening. Pre/Corequisite(s): Assessment into ENGL 1101				This course provides students with an understanding of National Electrical Code articles related to overcurrent protection, raceways, special systems, panelboards, motors, compressors, transformers and the State Electrical Act. Pre/Corequisite(s): CONE1104			
COMM 1130	Small Group Communication	3	3/0/0	CONE 1115	Solar Photovoltaic Installation	1	1/0/0
Meets MnTC Goal Areas 1 and 2. This course focuses on communication issues in small groups and the importance of small group work in business today. An emphasis will be placed on improving communication skills for successful teamwork, group cohesiveness and the responsibility to group goals and tasks. Students will be provided with opportunities to build their group communication skills through practice. Pre/Corequisite(s): Assessment into ENGL 1101				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. Pre/Corequisite(s): None			
COMM 1140	Interpersonal Communication	3	3/0/0	CONE 1116	Conduit/Tool Applications	2	0/2/0
Meets MnTC Goal Area 1. This course will focus on improving students' abilities to communicate effectively in one-to-one dyadic encounters by providing experience-based instruction. Extensive in-class and out-of-class analyses allow the student to examine his/her own and others' informal social interactions. The long-term goal is for the student to apply interpersonal communication theories to daily interactions and draw his/her own conclusions about the effectiveness of interpersonal communication. Pre/Corequisite(s): Assessment into ENGL 1101				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. Pre/Corequisite(s): None			
				CONE 1118	Electrical Services	3	2/1/0
				This course covers requirements and installation of service entrance equipment. Topics included are service materials, installation procedures, meters, service and conduit sizes, panel types, bonding, grounding and overcurrent protection. Pre/Corequisite(s): BLDG1102 and CONE1104			
				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. Pre/Corequisite(s): CONE1124			

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
CONE 1122	Introduction to Electrical Materials	1	0/1/0	CONE 2216	Motor Control Application	3	1/2/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course provides an advanced understanding of circuits controlling motors. Topics include jogging, braking, plugging, reduced voltage starting, phase loss protection, latching relays, time delay relays and safety requirements. Lab procedures demonstrate components, circuitry and operation learned in theory. Measured data is recorded and interpreted.</p> <p>Pre/Corequisite(s): CONE2206</p>			
CONE 1124	Introduction to Electrical Blueprint Reading	2	1/1/0	CONE 2217	Building Automation I	2	0/2/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
CONE 1140	Power-Limited Exam Prep	2	2/0/0	CONE 2218	Building Automation II	2	0/2/0
<p>This course covers the knowledge base associated with the Minnesota Power-Limited Technician 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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): CONE2217</p>			
CONE 1170	Predictive Maintenance Technology	2	1/1/0	CONE 2220	Electrician Internship	3	0/0/3
<p>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 connections, 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.</p> <p>Pre/Corequisite(s): None</p>				<p>This 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.</p> <p>Pre/Corequisite(s): None</p>			
CONE 1175	Best Maintenance Practices I	2	1/1/0	CONE 2222	Advanced Programmable Logic Controllers	3	1/2/0
<p>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, coupling, lubrication, proper alignment and packing and seals.</p> <p>Pre/Corequisite(s): None</p>				<p>This course presents practical applications of programmable logic controllers with 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.</p> <p>Pre/Corequisite(s): CONE2208</p>			
CONE 2202	Heating/Cooling Controls	3	1/2/0	CONE 2225	Transformers	2	0/2/0
<p>This course introduces basic electric heating, gas, oil and heat pump and cooling system installation and control. Topics included are installing wiring for heating and air conditioning systems, replacing controls, measuring instruments and schematic interpretation.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the concepts of transformer operation. Single-phase and three-phase (polyphase) transformer operation and installation methods are explored. Included in the course are the following topics: transformer operation, transformation relationships, transformer losses, transformer types, transformer testing, series and parallel operation, connections, instrument transformers and maintenance procedures. National Electrical Code requirements for transformer installations are developed and utilized.</p> <p>Pre/Corequisite(s): CONE1108</p>			
CONE 2205	Intro Commercial Wiring	3	1/2/0	CONE 2226	Agricultural Wiring	2	1/1/0
<p>This course examines the material and design aspects of commercial wiring. Topics included are raceways, boxes, design requirements for conduit layouts, circuit overcurrent protection and lighting.</p> <p>Pre/Corequisite(s): BLDG1102 and CONE1104 and CONE1122</p>				<p>This course introduces the design of farm wiring systems. Electrical distribution, dairy, poultry and hog structures will be included. Field crop storage, hog, dairy, poultry wiring, farm shop and machinery shed wiring, irrigation wiring along with farmstead lighting are also presented.</p> <p>Pre/Corequisite(s): BLDG1102 and GSMS1110</p>			
CONE 2206	Introduction to Motor Control Applications	3	2/1/0	CONE 2228	Electrical Troubleshooting	1	0/1/0
<p>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.</p> <p>Pre/Corequisite(s): CONE1108 and CONE1110</p>				<p>This course provides an application of principles of construction electricity to a variety of situations for the purpose of identifying and solving electrical problems. Emphasis is placed on electrical circuits pertaining to residential, commercial, industrial and motor control applications.</p> <p>Pre/Corequisite(s): 36 credits of CONE courses</p>			
CONE 2208	Programmable Logic Controllers	2	1/1/0	CONE 2234	Hydraulics/Pneumatics	2	1/1/0
<p>This course covers the theory, operation, installation, hardware, software and practical applications of programmable logic controllers. Basic PLC programming techniques for counters, timers and sequencers will be presented.</p> <p>Pre/Corequisite(s): None</p>				<p>This course provides the knowledge of pneumatic and hydraulic controls necessary for the electrician employed in an industrial setting.</p> <p>Pre/Corequisite(s): None</p>			
CONE 2211	Electronic Motor Control	3	2/1/0	CONE 2236	Industrial Motor Maintenance	2	1/1/0
<p>This course provides application of basic theory and operation to electronic motor control including semi-conductor, rectifiers, regulators and amplifiers.</p> <p>Pre/Corequisite(s): BLDG1102 and CONE1108</p>				<p>This course includes principles of industrial motor maintenance and experience with maintenance and troubleshooting situations common to industrial settings.</p> <p>Pre/Corequisite(s): CONE1110</p>			
CONE 2212	Commercial Wiring	3	1/2/0	CONE 2238	Low Voltage Wiring	2	1/1/0
<p>This course covers materials and design aspects of commercial wiring, in particular lighting and fuse applications. Topics included are lighting and lamp installation and selection, fuse selection, special outlets, load schedule, short circuit calculations and emergency illumination.</p> <p>Pre/Corequisite(s): BLDG1102 and CONE2205</p>				<p>This course provides students with an understanding of installation procedures and National Electrical Code requirements for coax, telephone, fire alarm, security, fiber optic, cat 4, cat 5 and other low-voltage wiring systems.</p> <p>Pre/Corequisite(s): None</p>			
CONE 2214	Industrial Wiring	2	1/1/0	CONE 2240	Code Update	1	1/0/0
<p>This course covers the installation methods and materials used in industrial wiring. Topics included are 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.</p> <p>Pre/Corequisite(s): BLDG1102 and CONE1114</p>				<p>This course provides the experienced 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.</p> <p>Pre/Corequisite(s): 30 CONE credits and/or experience in the electrical field.</p>			
				CONE 2244	National Electrical Code Changes	1	1/0/0
				<p>This course covers the recent changes in the National Electrical Code and how it will affect current wiring practices. The course is approved for Continuing Education hours.</p> <p>Pre/Corequisite(s): CONE1104</p>			

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CONE 2246	Advanced Electronics This course provides theory, operation and practical applications of various field-effect transistors, thyristors, photosensitive devices, sensing devices and wave chopping circuitry. Pre/Corequisite(s): CONE2211	2	1/1/0	COSM 1103	Shampooing & Rinsing This course covers shampooing and draping. Students will learn importance of selecting correct shampoo for various hair types. Pre/Corequisite(s): None	2	1/1/0
CONE 2247	Advanced Electronics This course provides theory, operation and practical applications of various field effect transistors, thyristors, photosensitive devices, sensing devices and wave chopping circuitry. Pre/Corequisite(s): cone2211	3	1/2/0	COSM 1105	Hairstyling This course will instruct you how to conduct services in a safe environment. You will learn styling and finishing techniques to complete a hairstyle to the satisfaction of the client. Pre/Corequisite(s): None	3	1/1/1
CONE 2248	Code Applications This course applies the principles of the National Electrical Code to job-specific situations. Pre/Corequisite(s): CONE1104 and CONE1114	2	1/1/0	COSM 1107	Haircutting This course will help you develop a strong foundation in haircutting. You will learn basic sectioning and cutting techniques. You will learn how to use scissors, razors and clippers to achieve a strong foundation in haircutting. Pre/Corequisite(s): None	3	1/1/1
CONE 2250	Special Topics/Projects The student 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. Pre/Corequisite(s): None	2	0/2/0	COSM 1111	Properties of the Hair & Scalp In this course you will learn the different layers of the hair and how it can be damaged. It is essential for you to be able to analyze a client's hair and determine what type of damage the hair has experienced and prescribe corrective treatment. Pre/Corequisite(s): None	2	1/1/0
CONM 1102	Site/Building Layout This course provides the student with the basic knowledge and hands-on skills necessary to lay out a building site and establish elevations for construction. Pre/Corequisite(s): None	2	1/1/0	COSM 1113	Chemical Texture Services In this course you will perform hair relaxation and wave formation techniques in accordance with manufacturer directions. You will consult with clients to determine their needs and preferences. You will conduct services in a safe environment, taking measures to prevent the spread of infections and contagious diseases. Pre/Corequisite(s): None	3	1/1/1
CONM 1108	Principles of Estimating This course covers material, labor and equipment estimating, which make up the primary portion of the direct costs used in a construction bid. These procedures are the first step in completing accurate bids for construction projects of all sizes. Pre/Corequisite(s): None	4	2/2/0	COSM 1115	Braiding/Extensions/Wigs This course will instruct you how to do non-surgical hair additions. You also will learn basic braiding procedures to create hairstyles that are pleasing to clients. Pre/Corequisite(s): None	2	1/0/1
CONM 1124	Building Systems This course is a comprehensive treatment of the various techniques, systems and methodologies utilized in the construction industry and will help the student prepare for the responsibilities of supervision on a modern construction project. Pre/Corequisite(s): None	3	3/0/0	COSM 1121	Histology of the Skin 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. Pre/Corequisite(s): None	2	1/1/0
CONM 2204	Materials Testing This course covers inspection techniques, methods of material measurement, documentation, material sampling and testing methods for soils and concrete. Pre/Corequisite(s): None	3	1/2/0	COSM 1123	Facials/Make-Up/Hair Removal In this course the student will learn the uses of various skin care products and how to apply them to the different skin types. The student will learn basic make-up application including artificial lashes. The student will learn basic massage movements to assist you in providing basic skin care services. Pre/Corequisite(s): None	3	1/1/1
CONM 2206	Building Codes 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 the development and proper use of the code. Pre/Corequisite(s): None	2	2/0/0	COSM 1125	Nail Structure & Growth In this course you will learn the structure of the nail. The student will recognize the various disorders and which disorders can be serviced in the salon. Pre/Corequisite(s): None	1	1/0/0
CONM 2208	Construction Bidding This course will explore standard construction contract documents and project estimating procedures and their use in building a competitive bid. Pre/Corequisite(s): CONM1108	2	1/1/0	COSM 1127	Hair Color In this course you will learn how to conduct a color service in accordance with a client's needs. You will learn the importance of using a variety of salon products and techniques to achieve the appropriate color outcome. Pre/Corequisite(s): None	3	1/1/1
CONM 2210	Construction Scheduling 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. Pre/Corequisite(s): BLDG1120 or CONM2208	3	2/1/0	COSM 1131	Manicuring/Pedicuring In this course students will learn basic manicuring and pedicuring procedures. Students will learn how to provide services in a safe environment. Pre/Corequisite(s): None	2	1/0/1
CONM 2212	Site Management This course covers construction site management from the standpoint of best utilization of site, facilities and services in a safe and efficient manner to complete construction projects. Pre/Corequisite(s): None	3	3/0/0	COSM 1133	Anatomy of the Head, Face & Neck In this course you will learn basic anatomy of the head, face and neck so that you can perform all the services you are trained and qualified to do. Pre/Corequisite(s): None	2	1/1/0
CONM 2214	Safety Management This course includes construction management applications in the areas of safety and health. Students will have an opportunity to write construction company safety policies and work directly with other governmental safety and health programs and policies as they are used by construction companies. Pre/Corequisite(s): None	3	3/0/0	COSM 1135	Advanced Nail Techniques In this course students will learn how to conduct a client consultation to determine client needs and preferences. Students will learn to work with a variety of salon products that will enable them to provide nail services on clients. Pre/Corequisite(s): None	3	1/1/1
CONM 2216	Computer Estimating 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. Pre/Corequisite(s): CONM2208 and CPTR1104 or MCDD2204 and CPTR1104	2	1/1/0	COSM 1137	Principles of Hair Design This course will give you an understanding of design and how to incorporate design into creating a pleasing hairstyle for each client's facial features. Pre/Corequisite(s): None	1	1/0/0
CONM 2222	Construction Mgmt Internship This course will provide construction management 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. Pre/Corequisite(s): None	2	0/0/2	COSM 1141	Chemistry/Electricity In this course you will learn the two types of electricity, how they are measured and the safety devices pertaining to electricity. Many of the services you will provide actually change the hair, skin and nails chemically. It is essential that you have a good working knowledge of chemistry in order to provide the safest and most effective services. Pre/Corequisite(s): None	2	1/1/0

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COSM 1143	Salon Business	2	1/1/0	CPTR 1114	COBOL Programming I	3	2/1/0
<p>In this course the student will learn how to manage time to provide efficient client services. The student will learn the necessary steps to retain clients. The student will learn how to market salon products and maintain business records.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is an introduction to the COBOL language and covers the fundamentals of the COBOL language and programming techniques. Programming assignments are completed in the lab. Topics include sequential file access and report formatting.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1145	Infection Control	2	1/1/0	CPTR 1115	COBOL Programming	4	3/1/0
<p>In this course you 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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course provides an overview of the COBOL programming language. Students will gain a solid foundation in the fundamentals of COBOL coding including knowledge of COBOL syntax, program structure, program design, execution and debugging. Maintenance and modification of typical business applications will also be coded throughout the course.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1147	Minnesota Cosmetology Laws and Rules	2	1/1/0	CPTR 1118	CISCO 2	3	2/1/0
<p>This course prepares students for the Laws and Rules portion of their state license examination.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers additional OSI layer topics, network routing and auditing. Students learn and practice accepted router configuration procedures.</p> <p>Pre/Corequisite(s): CPTR1108 or CSC11205</p>			
COSM 1155	Professional Image	1	1/0/0	CPTR 1122	Microcomputer Maintenance	3	1/2/0
<p>This course relates to proper conduct and business dealings with employers, clients and co-workers, as well as others with whom you come in contact.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the operation, diagnosis, troubleshooting and basic repair of microcomputer components. Topics include hardware compatibility, system architecture, memory, input devices, video displays, disk drives, modems and printers.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1162	Airbrushing Techniques	1	1/0/0	CPTR 1125	IT Essentials	3	1/2/0
<p>In this course you will learn the art of airbrushing techniques on natural and artificial nails. This course will include client consultation, safety and sanitation.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is designed for students seeking entry-level computer hardware and software skills. Target students include those who want to prepare for careers in information and communication technology (ICT) and students who want to gain skills and working knowledge of how computers work, how to assemble computers and how to troubleshoot hardware and software issues.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1164	The Art of Clipper Cutting	1	1/0/0	CPTR 1128	RPG/OS400 I	4	2/2/0
<p>In this course you will learn the art of clipper cutting and beard design. This course will include client consultation, safety and sanitation.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is an introduction to RPG programming and AS400 system operations. You will learn the basics of operating the AS400 and begin writing RPG programs. These programs will include the building of physical files, writing RPG code, compiling, error finding and producing reports. A strong emphasis will be put on developing logic to program more intermediate RPG programs. A high concentration will be on the structure of the student's calculation specifications. Students will learn how to add, delete and update data to physical files through their RPG programs.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1166	Alexandria Body Sugaring	1	1/0/0	CPTR 1138	Information Systems	3	2/1/0
<p>In this course students will learn how to remove hair using the Alexandria Professional Body Sugaring advanced system. Theory and thorough knowledge of the correct techniques employed in the practice of body sugaring will be taught.</p> <p>Pre/Corequisite(s): None</p>				<p>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 communications standards, and the systems development life cycle.</p> <p>Pre/Corequisite(s): None</p>			
COSM 1200	Salon Practicum	1&ndash;18	None	CPTR 1148	Microcomputer Operating System	3	1/2/0
<p>In this course, students will work in a licensed salon in order to meet the required 1550 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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
CPTR 1100	Fund Computer Concepts	1	0/1/0	CPTR 1166	Word Processing and Spreadsheets	4	2/2/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the basics of word processing and spreadsheet concepts, development and use.</p> <p>Pre/Corequisite(s): None</p>			
CPTR 1102	Introduction to Macintosh	3	2/1/0	CPTR 1170	Web Engineering I	3	2/1/0
<p>This course covers the operation of Macintosh computer hardware and software. The course covers the Macintosh operating system as well as an introduction to Microsoft Office Suite software.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
CPTR 1104	Intro to Computer Tech	3	2/1/0	CPTR 1178	Robotics	3	2/1/0
<p>This course covers the operation of the personal computer hardware and software. The course is an overview of a personal computer operating system, word processing, spreadsheets, presentation, email, scheduling, Internet and database management software.</p> <p>Pre/Corequisite(s): None</p>				<p>This course teaches basic robot building, operation and troubleshooting. Students will build and program robots to meet the current class requirements. Students will document the various aspects of robot building, operation and troubleshooting.</p> <p>Pre/Corequisite(s): CPTR1104</p>			
CPTR 1106	Microcomputer Databases	3	2/1/0	CPTR 2200	CISCO 3	3	2/1/0
<p>This course covers database concepts, design and construction using the latest database software. Topics include database normalization and table relationships, database objects, file creation, file manipulation, queries, macros, form development and report generation. Database programming concepts will also be introduced.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): CPTR1118</p>			
CPTR 1108	CISCO 1	3	1/2/0	CPTR 2208	CISCO 4	3	2/1/0
<p>This is an introduction to networking. This course covers a network model, basic networking math, basic network devices and an introduction to network design.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers WAN configuration and remote access configuration. Students will practice design and configuration of systems to solve WAN and remote access problems.</p> <p>Pre/Corequisite(s): CPTR2200</p>			
CPTR 1110	Visual Basic Program I	3	2/1/0				
<p>This course covers an introduction to the Visual Basic programming language. It covers language basics and program structure. Topics include graphical interface design and development, control properties, event-driven procedures, variables, scope, expressions, operators, functions, decision-making structures, looping structures and database access.</p> <p>Pre/Corequisite(s): None</p>							
CPTR 1112	Visual Basic Program II	3	2/1/0				
<p>This course is the second and final course in the BASIC programming language. Topics include looping, menus, arrays, subroutines, sorting, strings and files.</p> <p>Pre/Corequisite(s): CPTR1110</p>							

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CPTR 2220	COBOL Programming II	3	2/1/0	CPTR 2296	Topics in Computers	3	1/2/0
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. Pre/Corequisite(s): CPTR1114				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. Pre/Corequisite(s): None			
CPTR 2224	Linux I	3	2/1/0	CRJU 1101	Introduction to Criminal Justice	3	3/0/0
This course deals with Linux installation, configuration and system administration. This course lays the groundwork for continued study of Linux. Pre/Corequisite(s): None				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 objectives are also covered in this course. Pre/Corequisite(s): None			
CPTR 2228	RPG/OS400 II	4	2/2/0	CRJU 1104	Juvenile Justice and Delinquency	3	3/0/0
This course is a continuation of the 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. Pre/Corequisite(s): CPTR1128				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. Pre/Corequisite(s): None			
CPTR 2230	Structured Query Language	3	2/1/0	CRJU 1106	Introduction to Corrections/Probation	3	3/0/0
This course covers the basics of SQL (Structured Query Language) programming. 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. Pre/Corequisite(s): CPTR1106				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. Pre/Corequisite(s): None			
CPTR 2234	Linux II	3	2/1/0	CRJU 1108	Physical Control Tactics for Corrections	3	2/1/0
The primary focus of this course is Linux networking, security, ethics and privacy. Pre/Corequisite(s): CPTR2224				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. Pre/Corequisite(s): None			
CPTR 2236	Network Security	3	2/1/0	CRJU 1109	Law Enforcement Behavioral Science	3	3/0/0
This course deals with the understanding of basic network security. Students learn how to manage systems to guard against various security threats. Pre/Corequisite(s): CPTR1148 and CPTR2272				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. Pre/Corequisite(s): None			
CPTR 2242	Java Programming	3	2/1/0	CRJU 1117	Special Topics in Criminal Justice	3	3/0/0
In this course the student utilizes the Java programming language to create both Internet applets and applications. Pre/Corequisite(s): None				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. Pre/Corequisite(s): None			
CPTR 2245	Enterprise Network Technologies	3	2/1/0	CRJU 2201	Criminal Law	3	3/0/0
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. Pre/Corequisite(s): CPTR2272				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. Pre/Corequisite(s): None			
CPTR 2252	Microcomputer Systems Project	3	1/2/0	CRJU 2202	Criminal Procedures	3	3/0/0
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. Pre/Corequisite(s): CPTR2272 or CPTR2230				This course covers the study of constitutional law and criminal procedures utilizing the options 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. Pre/Corequisite(s): None			
CPTR 2258	Microcomputer System Projects	2	0/2/0	CRJU 2206	Police Report Writing	3	3/0/0
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. Pre/Corequisite(s): CPTR2272				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. Pre/Corequisite(s): ENGL1101 or GSCO1102			
CPTR 2262	Internet Protocol version 6	3	2/1/0	CRJU 2209	Criminal Investigations	3	3/0/0
This class teaches how to manage systems using Internet Protocol Version 6. The emphasis is protocol management on networking devices. Pre/Corequisite(s): CPTR2200				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. Pre/Corequisite(s): None			
CPTR 2272	Network Operating Systems	3	2/1/0	CRJU 2235	Criminal Justice Internship	3	0/0/3
This course teaches functions of a network operating system so the student can effectively maintain and manage a network. The student learns how to establish and oversee the operations of a network, create logins, design and establish directory structures and implement security. Pre/Corequisite(s): CPTR1148 or CPTR1138 or CPTR2224				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. Pre/Corequisite(s): None			
CPTR 2282	E-mail Administration	3	2/1/0				
The Email Administration 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. Pre/Corequisite(s): CPTR2272							
CPTR 2294	Internship	3	0/0/3				
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. Pre/Corequisite(s): CPTR1138							

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CSCI 1101	Computer Essentials	1	1/0/0	CULN 1102	Introduction to Foodservice Preparation	4	4/0/0
<p>This course is intended for those with no or minimal computer skills. Basic computer terminology including hardware and software, basic microcomputer operating systems, Internet and email operations will be covered. 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. Pre/Corequisite(s): None</p>				<p>This course covers terminology, equipment, basic food products and cooking techniques and kitchen safety. Pre/Corequisite(s): None</p>			
CSCI 1120	Computer Programming Basic	3	3/0/0	CULN 1104	Soups, Stocks and Sauces	2	2/0/0
<p>This course is an introduction to programming and problem-solving techniques using the Visual Basic programming language. Pre/Corequisite(s): MATH0090</p>				<p>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. Pre/Corequisite(s): None</p>			
CSEC 1102	Careers in Information Systems	1	1/0/0	CULN 1106	Salad and Baking Lab	6	0/6/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course covers food production in the food service 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. Pre/Corequisite(s): None</p>			
CSEC 1110	Fundamentals of IT Security	3	2/1/0	CULN 1112	Poultry and Seafood	3	3/0/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course is an introduction to poultry, fish and seafood from basic classifications to preparation methods, handling techniques, market forms and accompaniments. Pre/Corequisite(s): None</p>			
CSEC 2202	Introduction to Wireless Networking	3	2/1/0	CULN 1118	Fry and Broiler Lab	5	0/5/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): CULN1102</p>			
CSEC 2204	Managing Directory Services	3	2/1/0	CULN 1120	Kitchen Math and Formulas	1	1/0/0
<p>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. Pre/Corequisite(s): CPTR2272</p>				<p>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. Pre/Corequisite(s): None</p>			
CSEC 2210	Security Breaches and Countermeasures	3	2/1/0	CULN 1122	Sanitation Certification	1	1/0/0
<p>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. Pre/Corequisite(s): CSEC1110</p>				<p>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. Pre/Corequisite(s): None</p>			
CSEC 2212	Web Security	3	2/1/0	CULN 1124	Menu Planning and Merchandising	2	2/0/0
<p>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. Pre/Corequisite(s): CPTR2224 and CPTR2272</p>				<p>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. Pre/Corequisite(s): None</p>			
CSEC 2218	Disaster Recovery	2	1/1/0	CULN 2202	Meats	2	2/0/0
<p>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. Pre/Corequisite(s): CSEC1110</p>				<p>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. Pre/Corequisite(s): None</p>			
CSEC 2222	Network Security Design	3	2/1/0	CULN 2204	Breakfast Preparation Lab	5	0/5/0
<p>This course will give the student the opportunity to conduct a vulnerability analysis upon a network in order to practice or refine the attack methodologies with the hacker tools and techniques to which the student was exposed 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. Pre/Corequisite(s): CSEC2204 and CSEC2210</p>				<p>This course covers the hands-on application of the skills required by a breakfast cook, ranging from basic egg cookery to breakfast buffet set-up and service and the preparation of food products normal to the typical breakfast menu of a restaurant. Pre/Corequisite(s): None</p>			
CSEC 2228	Network Defense	3	2/1/0	CULN 2206	Buffet and Garde Manger Lab	3	0/3/0
<p>This course introduces the student to the various methodologies for defending the network. The student will be introduced to the concepts, principles, type and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. Pre/Corequisite(s): CSEC1110 and CSEC2210</p>				<p>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. Pre/Corequisite(s): None</p>			
CTEC 2204	Advanced Technical Support	3	2/1/0	CULN 2214	Quantity Food Preparation and Butcher Lab	6	0/6/0
<p>This course will emphasize advanced technical support topics such as project 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. Pre/Corequisite(s): ITSS1100</p>				<p>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. Pre/Corequisite(s): None</p>			
				CULN 2222	Production and Planning Supervision Lab	6	2/4/0
				<p>This course provides the practical application of the principles of supervision that are part of a chef's daily routine. It includes application of learned skills in the areas of production, supervising, menu writing, purchasing, storeroom operation and merchandising. Pre/Corequisite(s): None</p>			
				CULN 2228	Food Cost Control	3	3/0/0
				<p>This course covers the cost structure of food service operations and provides methods and applications to monitor and control food and labor costs. Pre/Corequisite(s): None</p>			
				CULN 2236	Ethnic Foods	2	1/1/0
				<p>This course covers the history, origin and preparation methods of food products of various countries and ethnic groups. Pre/Corequisite(s): None</p>			

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CULN 2238	Confectionery Art This course covers the skills and techniques required to decorate and present cakes, pastries and desserts.	2	1/1/0 None None	DCNH 2230	Advanced Engines and Fuel Systems This course is designed to give students an understanding of medium- and heavy-duty diesel engines used in Case New Holland equipment. Engines being studied include but 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. Pre/Corequisite(s): DSET1132 and DSET1134	6	2/4/0
CULN 2240	Internship This course provides the student with an internship experience to allow him or her to apply what has been learned in the classroom and practiced in the lab. The internship will take place in a commercial food service establishment under the supervision of the employer/designee. Pre/Corequisite(s): None	2	0/0/2	DCNH 2238	Transmissions & Drive Systems This course covers procedures to test, troubleshoot and rebuild power shift and other specialized transmissions used on agricultural equipment and industrial powered equipment as it relates 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. Pre/Corequisite(s): DSET1110	4	1/3/0
CUST 1010	Wood Properties: Strength & Quality This class introduces students to the properties of wood as a manufacturing material. The course will focus on the physical, mechanical and chemical aspects of wood and wood products in the manufacturing environment. Participants will learn quality specifications and requirements which are standard for the needs of today's wood-based products. Pre/Corequisite(s): None	3	3/0/0	DEER 1116	John Deere Supervised Occupational Experience (SOE) I 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. Pre/Corequisite(s): None	3	0/0/3
CUST 1060	Occupational Safety and Risk Management This course is an 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. Pre/Corequisite(s): None	2	2/0/0	DEER 1118	John Deere Supervised Occupational Experience (SOE) II 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. Pre/Corequisite(s): None	7	0/0/7
CVNP 2210	Voice, Video & 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. Pre/Corequisite(s): CPTR1108 or TECH1106	4	2/2/0	DEER 2210	Mobile Hydraulics This course covers the hydraulic components specific to John Deere heavy equipment. 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. Pre/Corequisite(s): DSET1112 and DSET1100	4	2/2/0
CVNP 2212	Voice Over IP and IP Telephony This course covers the theory, installation, configuration and monitoring of voice communications systems. Topics covered in this course include components of business communications systems, voicemail systems, call features, IP telephony call control protocols, codec algorithms and quality of service techniques. Pre/Corequisite(s): CPTR1108 or TECH1106	4	2/2/0	DEER 2218	John Deere Supervised Occupational Experience (SOE) III 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. Pre/Corequisite(s): None	3	0/0/3
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. Pre/Corequisite(s): None	4	2/2/0	DEER 2230	Advanced Engines and Fuel Systems 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. Pre/Corequisite(s): DSET1132 and DSET1134	6	2/4/0
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 designs and discuss any green technologies used in the designs. Pre/Corequisite(s): None	3	1/2/0	DEER 2238	Transmissions & Drive Systems 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. This course also includes final drives and related components including removal, repair, installation and adjustment of major units and components. Pre/Corequisite(s): DSET1110	4	1/3/0
DCNH 1116	CNH (Case New Holland) Supervised Occupational Experience (SOE) I 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. Pre/Corequisite(s): None	3	0/0/3	DENT 1100	Biomaterials 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. Pre/Corequisite(s): None	3	2/1/0
DCNH 1118	CNH (Case New Holland) Supervised Occupational Experience (SOE) II 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. Pre/Corequisite(s): None	7	0/0/7	DENT 1102	Dental Anatomy 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 and root morphology. Special topics include survey of dental anomalies, cavity classification and forensic dentistry. Pre/Corequisite(s): None	2	2/0/0
DCNH 2210	Mobile Hydraulics This course covers the hydraulic components specific to Case New Holland farm and heavy equipment. 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. Pre/Corequisite(s): DSET1112 and DSET1100	4	2/2/0	DENT 1103	Introduction for Dental Health Care Providers 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. Pre/Corequisite(s): None	2	1/1/0
DCNH 2218	CNH (Case New Holland) Supervised Occupational Experience (SOE) III 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. Pre/Corequisite(s): None	3	0/0/3	DENT 1104	Dental Health Care Providers II This course will build on what students have learned 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. Pre/Corequisite(s): None	1	1/0/0

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DENT 1106	Dental Radiology Lecture	3	3/0/0				
<p>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 darkroom chemistry, radiation asepsis and safety are covered. Other topics include interpretation of normal anatomy, dental film and digital image analysis, radiographic interpretation and evaluation, and quality assurance issues. Pre/Corequisite(s): None</p>							
DENT 1122	Dental Ethics & Jurisprudence	1	1/0/0				
<p>This course focuses on the ethical and legal implications of providing dental, dental assisting and dental hygiene care. The practice acts for Minnesota and North Dakota will also be studied. Pre/Corequisite(s): None</p>							
DNAS 1103	Clinical Assisting I	6	3/3/0				
<p>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. Pre/Corequisite(s): None</p>							
DNAS 1105	Clinical Assisting II	5	1/4/0				
<p>Dental assisting students apply skills developed in Clinical Assisting I in a clinical setting. This course prepares the student to adapt chairside skills to assisting with dental specialties as they are performed in the general practice. Students will apply skills developed in Dental Anatomy, Biomaterials, Biodental Science and Dental Practice Management as they apply to the practice of dental assisting. Pre/Corequisite(s): None</p>							
DNAS 1106	Biodental Science	3	3/0/0				
<p>This course provides an introduction to anatomy and physiology, an introduction to dental histology, embryology and an overview of head and neck anatomy using the universal charting system. This course is also designed to give the student a basic concept of microbiology, disease transmission and a survey of oral pathology and pharmacology. The student will also be introduced to the basic concepts of understanding nutrition in the dental profession. Pre/Corequisite(s): None</p>							
DNAS 1114	Dental Prac Management	2	2/0/0				
<p>This course provides the student with instruction in the principles and applications that are related to the management of a dental office. Emphasis is placed on managing patient records through computer-generated charting, financial records, third-party payments, appointment scheduling, inventory and recall systems. Pre/Corequisite(s): None</p>							
DNAS 1119	Advanced Functions	5	2/3/0				
<p>This course is designed to provide the student with instruction and practice to perform the clinical competency in the following intra-oral functions approved by the Minnesota Board of Dentistry: taking radiographic exposures, performing mechanical polishing, taking preliminary impressions and bite registrations, applying topical fluoride, placing and removing periodontal dressing, removing excess cement, monitoring nitrous oxide-induced patients, induction of nitrous oxide/oxygen sedation, excess bond removal from orthodontic appliances with rotary instruments and applying pit and fissure sealants. In addition the following intra-oral functions are taught and practiced to laboratory competency: removing sutures, preliminary adaptation of temporary (provisional) crowns, performing selected orthodontic functions, applying bleaching agents and performing approved endodontic procedures. Pre/Corequisite(s): DNAS1103 or DENT1114</p>							
DNAS 1210	Radiology Lab	1	0/1/0				
<p>This course puts into practice knowledge gained from DENT 1106 Dental Radiology Lecture course. Dental assisting students expose full-mouth series, both film-based and digital, extra-oral and specialized radiographs on adult and child mannequins. Emphasis is placed on protection against x-ray hazards and record keeping. Students will also process, mount and evaluate radiographs for diagnostic value. In addition, they will use radiographs to explain dental health and treatment plans. Lab sessions will allow students to develop radiographic skills, and clinic sessions create an opportunity for students to enhance their efficiency in radiographic technique. Pre/Corequisite(s): None</p>							
DNAS 1212	Radiology Lab II	1	0/1/0				
<p>This course puts into practice knowledge gained from DENT 1106 Dental Radiology Lecture course. Dental assisting students expose full-mouth series, both film-based and digital, extra-oral and specialized radiographs on adult and child patients. Emphasis is placed on protection against x-ray hazards and record keeping. Students will also process, mount and evaluate radiographs for diagnostic value. In addition, they will use radiographs to explain dental health and treatment plans. Lab sessions will allow students to develop radiographic skills, and clinic sessions create an opportunity for students to enhance their efficiency in radiographic technique. Pre/Corequisite(s): None</p>							
DNAS 1215	Dental Specialties	1	1/0/0				
<p>This course introduces the student to the dental specialties of pediatric dentistry, periodontics, oral and maxillofacial surgery, endodontics, orthodontics and prosthodontics, both fixed and removable. This course will provide the student with an introduction to the clinical procedures with each of the specialties listed. Students will research various</p>							
					dental assisting specialties by interviewing dental assistants in specialty practices. Pre/Corequisite(s): None		
DNHY 1104	Dental Anatomy Lab	1	0/1/0				
<p>This is a lab course which provides opportunities for the student to work with tooth identification and charting systems, intraoral imagery and occlusion assessment. Special topics include survey of dental anomalies and cavity classifications. Pre/Corequisite(s): None</p>							
DNHY 1106	Head and Neck Anatomy	2	2/0/0				
<p>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. Pre/Corequisite(s): Acceptance into the dental hygiene program</p>							
DNHY 1108	Oral Histology and Embryology	2	2/0/0				
<p>This course covers the study of the microscopic anatomy of the oral tissues and the embryonic development of the face and oral cavity with emphasis on the masticatory system. Pre/Corequisite(s): None</p>							
DNHY 1109	Radiology Lab	2	2/0/0				
<p>This course puts into practice knowledge gained from DNHY 1106 Dental Radiology Lecture. Students expose full-mouth series (film based and digital), extra-oral and specialized radiographs on adult and pedodontic patients or mannequins. Emphasis is placed on radiation safety practices, infection control and record keeping. Students will process, mount and evaluate radiographs for diagnostic value and quality. Emphasis is placed on radiological interpretation and patient education. The lab and clinical experiences are designed to create an opportunity for students to enhance their efficiency and quality of their radiographic techniques. Pre/Corequisite(s): None</p>							
DNHY 1110	Principles I	2	2/0/0				
<p>This course introduces the student to dental hygiene with emphasis on theory of preventative dentistry, OSHA standards, disinfectant/sterilants, formation of plaque and calculus, patient assessment and an introduction to the caries process and periodontal assessment. Pre/Corequisite(s): None</p>							
DNHY 1112	Dental Hygiene Practice I	3	0/3/0				
<p>This course provides an introduction to dental hygiene with emphasis on the practice of preventative dentistry, care and use of equipment, sterilization techniques and an introduction to instrumentation. Pre/Corequisite(s): None</p>							
DNHY 1118	Oral Pathology	2	2/0/0				
<p>This course covers the study of general processes as well as oral disease processes. Special emphasis is placed on clinical and radiographic recognition of pathology of the oral cavity. Pre/Corequisite(s): Accepted into the dental hygiene program and successful completion of Principles I, II, III; Head and Neck Anatomy; and Oral Histology and Embryology</p>							
DNHY 1119	Dental Hygiene Principles II	4	4/0/0				
<p>This course is 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. Pre/Corequisite(s): DNHY1110</p>							
DNHY 1123	Dental Hygiene Practice II	5	0/5/0				
<p>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 opportunity for the student to develop competence in clinical procedures. Pre/Corequisite(s): DNHY1112</p>							
DNHY 1124	Pain Control Lab	2	0/2/0				
<p>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. Pre/Corequisite(s): DNHY1106 and DNHY1136</p>							
DNHY 1130	Dent Hygiene Prin III	1	1/0/0				
<p>This course is a continuation of DNHY1119 with emphasis on Minnesota Board of Dentistry allowable procedures for dental hygienists. The course includes the study of rubber dam placement, sealants, orthodontic patients, debonding and intraoral photography. Pre/Corequisite(s): DNHY1123</p>							
DNHY 1132	Dent Hygiene Prac III	1	0/1/0				
<p>This lab course is a continuation of DNHY1123 with emphasis on Minnesota Board of Dentistry allowable procedures for dental hygienists. Pre/Corequisite(s): DNHY1123</p>							
DNHY 1136	Dental Pharmacology	2	2/0/0				
<p>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. Pre/Corequisite(s): None</p>							

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
DNHY 2210	Dent Hygiene Prin IV	2	2/0/0	DSET 1116	Fall Supervised Occupational Experience	3	0/0/3
This course is a continuation of DNHY1130 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. Pre/Corequisite(s): DNHY1130				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. Pre/Corequisite(s): None			
DNHY 2213	Dent Hygiene Prac IV	6	0/6/0	DSET 1124	Diesel Shop Management	1	1/0/0
This course is a continuation of DNHY1132 with emphasis on the treatment of moderate to advanced periodontal disease, the development of speed and an introduction to several advanced dental hygiene techniques. Pre/Corequisite(s): DNHY1132 and The student must be accepted into the dental hygiene program and comply with the Dental Program Student/Faculty Handbook.				This course provides students an opportunity to visit John Deere, Case New Holland or general shops and work with on-site instructors as it relates to management procedures including parts, ordering inventory, repair order writing, payroll, employee-employer relations, customer relations and communication skills. Pre/Corequisite(s): None			
DNHY 2219	Periodontology	2	2/0/0	DSET 1130	Trans Elec/Start/Charge	4	2/2/0
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. Pre/Corequisite(s): None				This course is an introduction to electrical systems. Students will learn how to use DVOMs 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. Pre/Corequisite(s): None			
DNHY 2220	Dent Hygiene Prin V	1	1/0/0	DSET 1132	Introduction to Engine Theory	2	2/0/0
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. Pre/Corequisite(s): DNHY2210				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. Pre/Corequisite(s): None			
DNHY 2223	Dent Hygiene Prac V	6	0/6/0	DSET 1134	Introduction to Engines	3	0/3/0
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. Pre/Corequisite(s): DNHY2213 and The student must be accepted into the dental hygiene program and comply with the Dental Program Student/Faculty Handbook.				This course teaches how to disassemble, analyze, rebuild, measure and adjust diesel engines and their components. Pre/Corequisite(s): None			
DNHY 2226	Community Dental Hygiene	4	3/1/0	DSET 1140	Supervised Occupational Experience 1	7	0/0/7
The lecture portion of this course introduces the student to the disciplines and 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. Pre/Corequisite(s): None				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. Pre/Corequisite(s): None			
DNHY 2232	Dental Hygiene Review	1	1/0/0	DSET 1144	Electrical Troubleshooting	3	1/2/0
This course is designed to assist students in reviewing content in preparation to write the National Board Dental Hygiene Examination. Pre/Corequisite(s): DNHY2213				This course is a hands-on troubleshooting course that allows students to apply knowledge of DSET 1130. Students will be required to troubleshoot and repair a variety of equipment and vehicles. Pre/Corequisite(s): DSET1130			
DNHY 2240	Clinical Affiliation I	1	0/0/1	DSET 2204	Advanced Electrical and Equipment Systems	3	1/2/0
This is a Corequisite to DNHY2213 Dental Hygiene Practice IV with 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. Pre/Corequisite(s): None				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. Pre/Corequisite(s): DSET1100 and DSET1130			
DNHY 2246	Clinical Affiliation II	1	0/0/1	DSET 2206	Electronic Controls	3	1/2/0
This is a Corequisite to DNHY2223 Dental Hygiene Practice V with 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. Pre/Corequisite(s): None				This course covers electronic components used to control engines, transmissions, brakes and hydraulics used in modern equipment. The coursework will include system analysis, testing, troubleshooting and replacement of components used in electronic control systems. Pre/Corequisite(s): DSET1130 and TRNS1102 or DSET1100 and DSET1130			
DSET 1100	Diesel Equipment Fundamentals	2	1/1/0	DSET 2210	Mobile Hydraulics	4	2/2/0
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. Pre/Corequisite(s): None				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. Pre/Corequisite(s): DSET1112 and DSET1100			
DSET 1106	Fuel Systems	2	1/1/0	DSET 2214	Suspension and Alignment	3	1/2/0
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. Pre/Corequisite(s): None				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. Pre/Corequisite(s): DSET1100			
DSET 1110	Power Train I	3	1/2/0	DSET 2218	Advanced Fuels	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. Pre/Corequisite(s): TRNS1102 or DSET1100				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. Pre/Corequisite(s): DSET1106			
DSET 1112	Hydraulics I	4	2/2/0	DSET 2220	Internship	3	0/0/3
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. Pre/Corequisite(s): None				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. Pre/Corequisite(s): TRNS1102 and TRNS1106 and TRNS1110 or DSET1100			
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. Pre/Corequisite(s): None							

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DSET 2230	Advanced Engines and Fuel Systems	6	2/4/0	ED 2294	Educational Psychology	3	3/0/0
<p>This course is designed to give students an understanding of medium- and heavy-duty diesel engines manufactured by, but not limited to, Caterpillar, Cummins, Detroit Diesel, Navistar, Volvo and Mercedes Benz. Areas of study include base engine components, intake and exhaust systems, emission control devices, lubrication systems, cooling systems and fuel systems.</p> <p>Pre/Corequisite(s): DSET1134 and DSET1132</p>				<p>This course is intended to provide an overview of the theories and principles from psychology that are applicable to the teaching profession. Specifically, the course addresses motivation, learning, development, instruction, assessment and classroom management. Educational Psychology is designed to be a foundation for future methods and issues courses in education.</p> <p>Pre/Corequisite(s): None</p>			
DSET 2238	Transmissions & Drive Systems	4	1/3/0	EDUC 1112	Job Search Skills	1	1/0/0
<p>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.</p> <p>Pre/Corequisite(s): DSET1110</p>				<p>This course is designed to develop successful job search, application, resume writing, interviewing and job maintenance skills needed to conduct an effective job search.</p> <p>Pre/Corequisite(s): None</p>			
DSET 2240	Supervised Occupational Experience II	3	0/0/3	EDUC 1113	Career and Life Planning	2	2/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is designed to assist students to develop career exploration skills and strategies through self-exploration, cultural perceptions, and career and college major identification. Students will identify potential major and career possibilities.</p> <p>Pre/Corequisite(s): None</p>			
DTRK 1140	Supervised Occupational Experience 1	7	0/0/7	ELL 50	ELL Foundations	4	3/1/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>Grammar-based ELL Foundations is a course designed to prepare learners whose native language is not English to succeed in college-level fundamental courses. The course focuses on developing fluency in all English skill areas: speaking, listening, reading and writing. Content is chosen especially to provide sound models for needed basic written forms.</p> <p>Pre/Corequisite(s): None</p>			
DTRK 2214	Suspension and Alignment	3	1/2/0	ELL 60	English Language Learner Reading	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): TRNS1102 or DSET1100</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
DTRK 2230	Advanced Engines and Fuel Systems	6	2/4/0	ELL 1175	Intermediate Listening and Speaking	3	3/0/0
<p>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, lubrication systems, cooling systems and fuel systems on but not limited to the following manufacturers: Caterpillar, Cummins, Detroit, Navistar, Mack and Volvo truck diesel engines.</p> <p>Pre/Corequisite(s): DSET1132 and DSET1134</p>				<p>This course is designed for ELL students for whom English is not their native language. It 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.</p> <p>Pre/Corequisite(s): None</p>			
DTRK 2238	Transmissions & Drive Systems	4	1/3/0	ELWT 1102	Electrical Line Worker Theory I	4	2/2/0
<p>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 driveline 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.</p> <p>Pre/Corequisite(s): DSET1110</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
DTRK 2240	Supervised Occupational Experience II	4	0/0/4	ELWT 1104	Electrical Structure Installation	5	2/3/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
ECON 2210	Macroeconomics	3	3/0/0	ELWT 1106	Climbing Electrical Structure	4	0/4/0
<p>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, among others.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
ECON 2222	Microeconomics	3	3/0/0	ELWT 1108	Const of Overhead Structures	3	0/3/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
ED 2205	Introduction to Education and Technology	2	2/0/0	ELWT 1110	Line Worker Theory II	4	2/2/0
<p>The course is an introduction to the career of teaching along with the development of technology skills. Specific variables related to teaching as a profession are explored including professional roles and responsibilities, students, curriculum and the structure of schools. This course is to be taken concurrently with ED 2206.</p> <p>Pre/Corequisite(s): None</p>				<p>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 armor rodding, hand and pre-formed ties, overvoltage and overcurrent installations, and street lighting circuits.</p> <p>Pre/Corequisite(s): ELWT1102</p>			
ED 2206	Early Field Experience	1	0/0/1	ELWT 1112	Transformers	2	0/2/0
<p>This course is an early educational field experience. Students will be placed on a K-12 educational site and be supervised by an experienced instructor. The student's primary role is as an observer of the classroom, but students may be asked to provide assistance in the classroom setting under the instructor's supervision. This course is to be taken concurrently with ED 2205.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): ELWT1108, ELWT1110</p>			
				ELWT 1114	Line Construction Reports	2	2/0/0
				<p>This course provides the student with an understanding of the design of line work construction drawings and equipment installation orders.</p> <p>Pre/Corequisite(s): ELWT1108 and ELWT1110</p>			
				ELWT 1116	Pole Top and Bucket Rescue	1	0/1/0
				<p>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.</p> <p>Pre/Corequisite(s): ELWT1106</p>			

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ELWT 1118	Field Construction I	3	0/3/0	ENGL 2223	Creative Writing: Personal Narrative	3	3/0/0
<p>This course covers the installation of single-phase high voltage systems under actual field conditions. The course contains two main parts. The first of these two parts is the overhead construction section including structural assembly including grounding requirements, guying, conductor installation including stringing and tying, single-phase transformer, capacitor, and regulator installation. The second main area is underground installation covering trencher operation, primary and secondary cable termination, services, pad mount transformers and sectionalizing cabinets, and street lighting.</p> <p>Pre/Corequisite(s): ELWT1106</p>				<p>Meets MnTC Goal Area 6F. This creative writing course focuses on the writing of memoir. It is a workshop designed to offer students practice in the composition of memoir, from autobiographical vignettes to fully developed personal narratives. Emphasis will be on writing and critiquing original work as well as reading and modeling exemplary memoir writing. This course counts as a fine arts course as it emphasizes the creation of fine arts as opposed to the formal critical analysis of them.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ELWT 1120	Field Construction II	3	0/3/0	ENGL 2228	A Well Examined Life: Reading and Writing Memoir	3	3/0/0
<p>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 guying, 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 terminations, three-phase pad mount transformer installation and multi-phase sectionalizing cabinet installation.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 6F and 7. This course focuses on the writing of personal memoir as well as an in-depth study of the literary genre of memoir; it may also include creative essay writing. It is a workshop designed to offer students practice in the composition of memoir and other narrative modes of writing, as well as a study of the memoir as literature. This course places emphasis on the creation of fine arts as well as the formal, critical analysis of them.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ELWT 1122	Field Construction III	3	0/3/0	ENGL 2230	Environmental Literature	3	3/0/0
<p>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 by the Minnesota Municipal Utilities Association and the other by Minnesota Rural Electric Cooperatives.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2, 6 and 10. This course will focus on responding to texts that inspire greater awareness of and appreciation for the environment and that explore environmental challenges. Students will gain experience with critical thinking and reading as they examine perspectives, explore attitudes and analyze current problems/solutions through discussions, writings and other activities.</p> <p>Pre/Corequisite(s): ENGL 1101</p>			
ELWT 1130	Electrical Line Worker Internship	2	0/0/2	ENGL 2234	Introduction to Literature: Short Stories	3	3/0/0
<p>This course will concentrate on the student receiving apprentice life work skills under the supervision of an appropriate industry representative.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2, 6 and 7. This literature course will increase students' understanding of individual and group differences through a close study of short stories. Issues of race, gender, class, tradition and value will be the focus of the course as illuminated by the literature. The course will also cover the basic elements of short stories. Stories studied may include selections from various ethnic groups, genders or classes.</p> <p>Pre/Corequisite(s): ENGL0075 or ENGL0050 or ENGL1101</p>			
ENGL 40	Reading Strategies	3	3/0/0	ENGL 2235	Intro to Literature: Drama	3	3/0/0
<p>This developmental reading course is designed to provide students with a foundation in 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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2, 6 and 8. This literature course will introduce students to the growing interdependence of the people of the world through a close study of drama. Studying drama written by various writers around the world will allow students to develop an understanding of and an appreciation for the human condition and culture. The course will also cover the basic elements and concepts of drama.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ENGL 50	Writing Fundamentals	3	3/0/0	ENGL 2236	Introduction to Literature: Novel	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course meets MnTC Goal Areas 2, 6 and 7. This literature course will involve students in a close reading of selected novels that focus on individual and group differences in both the U.S. and abroad. Attention will be paid to the traditions and values of the writers and as portrayed in the literature. Basic concepts and elements of the novel will also be studied.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ENGL 2200	Introduction to Creative Writing	3	3/0/0	ENGL 2237	Intro to Literature: Short Prose	3	3/0/0
<p>This course meets MnTC Goal Area 6F. The creative writing course focuses on the writing of short fiction, poetry and plays. It is a course designed to offer students practice in the composition of these three modes, with room for exploration of each genre's sub-categories. Emphasis will be on writing original work and on learning the skills needed to revise this work in order to achieve a desired response from an audience. This course will emphasize helping students learn to develop their creative voice and incorporate study of published works to aid students in this goal. This course counts as a fine arts course; it places emphasis on the creation of fine arts as opposed to the formal, critical analysis of them. Course delivery will include a traditional class format as well as workshop settings, where students' work will be read, analyzed and critiqued by others in the class. The course may include the following: presenting and submitting manuscripts, analyzing the motivation for writers, editing and criticism, techniques for reading work aloud and analyzing masterpiece models. Evaluation of course competencies may be based on writing journals, portfolios, presentations, large and small group discussions, collaborative tasks, manuscripts (completed or works in progress) and/or public readings of student works.</p> <p>Pre/Corequisite(s): ENGL1101</p>				<p>Meets MnTC Goal Areas 2, 6 and 9. This literature course will focus on the ethical dimensions of political, social and personal life as conveyed in short prose. The basic elements and concepts of short prose will be studied.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ENGL 2221	Creative Writing: Poetry	3	3/0/0	ENGL 2239	Nature Writers	3	3/0/0
<p>Meets MnTC Goal Area 6F. This creative writing course focuses on the writing of poetry. It is a workshop designed to offer students practice in the composition of poetry and poetic modes of writing. Emphasis will be on writing original work and on learning the skills needed to write successful poetry. The course will emphasize helping students learn to develop their creative voice. This course counts as a fine arts course; it places emphasis on the creation of fine arts as opposed to the formal, critical analysis of them.</p> <p>Pre/Corequisite(s): ENGL1101</p>				<p>This course meets MnTC Goal Areas 2, 6 and 10. This course will focus on texts written by great nature writers. While special emphasis will be placed on those works that stress conservation and ecology, others will enable students to see the human struggle with the environment as protagonist. Material may also include travel writing, as well as the more recent directions toward urban nature and nontraditional/multicultural perspectives. Texts may include nonfiction, novels, poetry and plays. Students will gain experience in reading critically and writing logical, sound papers that deal with environmental issues and text analysis.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
ENGL 2222	Creative Writing: Fiction	3	3/0/0	ENGL 2302	American Ethnic Literature	3	3/0/0
<p>Meets MnTC Goal Area 6F. This creative writing course focuses on the writing of short fiction. It is designed to offer students practice in the composition of fiction and other narrative modes of writing. Emphasis will be on writing original work and on learning skills needed to write narratives that achieve a desired effect on an audience. The course will emphasize helping students learn to develop their creative voice. This course counts as a fine arts course; it places emphasis on the creation of fine arts as opposed to the formal, critical analysis of them. The course may include analyzing masterpiece models, writing in the genre of short fiction and possibly creative essays, biography, autobiography, and/or travelogues. Students will present and submit manuscripts, discuss each other's work in a workshop format and will be expected to edit and critique both their own and fellow students' works.</p> <p>Pre/Corequisite(s): ENGL1101</p>				<p>Meets MnTC Goal Areas 6 and 7. This multi-genre literature course is a study of significant writers and selected works presenting diverse groups based on race, ethnicity, gender, class, culture, etc. The origins, contributions and changing dynamics of specific groups in the United States will be studied through reading, analysis and discussion.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
				ENGL 2304	Introduction to Literature, Native American Focus	3	3/0/0
				<p>Meets MnTC Goal Area 2 and 6. This introductory literature course introduces students to the study of poetry, drama, memoir and short fiction through the study of Native North American writings. Students will employ critical reading/thinking skills and analytical and creative writing skills in order to more fully understand the literature.</p> <p>Pre/Corequisite(s): ENGL1101</p>			
				ENGL 2310	Introduction to Mythology	3	3/0/0
				<p>Meets MnTC Goal Area 6. This course introduces students to the major myths of Greece and Rome. The course will cover myths, mythological and heroic figures, and how mythology influences culture and literature. The course may also include an introduction to other world mythologies (Norse, Celtic, Native American or others).</p> <p>Pre/Corequisite(s): ENGL1101</p>			

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ENGL 2314	Introduction to Shakespeare	3	3/0/0	ENGR 1126	Engineering Graphics	3	1/2/0
Meets MnTC Goal Area 6. This course introduces students to William Shakespeare through the study of a selection of plays and poetry. Focus is placed on making Shakespeare's language accessible, interpreting the works from various contexts, and identifying universal and timeless themes. Pre/Corequisite(s): ENGL1101				The course introduces and develops basic skills in drawing, lettering, orthographic projection, sections and dimensioning. This course will also apply the basic fundamentals of pictorial drawing, including isometric, oblique, perspective, shade and shadow, and freehand sketching. Pre/Corequisite(s): None			
ENGL 2321	Women in Literature	3	3/0/0	ENGR 1132	Office Systems and Equipment	3	1/2/0
Meets MnTC Goal Areas 6 and 7. This course examines the ways in which culture, ethnicity, religion, class and sexuality distinguish literature written by female authors from different countries and historical periods. Texts will cover a variety of authors and genres, as well as themes, issues and theories specific to literature written by women. Pre/Corequisite(s): ENGL1101				This course covers the application of Windows software systems in coordination with AutoCAD software as well as general office equipment set-up and use. Pre/Corequisite(s): None			
ENGL 2322	Banned Literature	3	3/0/0	ENGR 2210	Engineering Mechanics I	3	3/0/0
Meets MnTC Goal Area 2, 6 and 7. This course is an in-depth study of literature that has been banned or challenged. The course focuses primarily on the study of literature, but part of the lectures, discussions and student responses will address the topic of censorship. Students will read from a variety of genres. Pre/Corequisite(s): ENGL1101				This course provides an introduction to the principles of mechanics, including equilibrium of particles and rigid bodies; distributed forces, centroids and centers of gravity; moments of inertia of areas; analysis of simple structures and machines; and various types of friction. Pre/Corequisite(s): MATH1134			
ENGL 2323	Horror and Supernatural Fiction	3	3/0/0	ENGR 2220	Engineering Mechanics II	3	3/0/0
This course meets MnTC Goal Areas 2 and 6. This course is an in-depth study of literary texts that fall under the category of horror and/or supernatural fiction. While the focus is on this genre, the course may also address sub-categories of detective fiction, science fiction and fantasy. Pre/Corequisite(s): ENGL1101				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. Pre/Corequisite(s): ENGR2210 and MATH1135			
ENGL 2324	Travel Literature	3	3/0/0	ENGR 2230	Mechanics of Materials	3	3/0/0
This course meets Goal Areas 2, 6 and 10. This course is an in-depth study of travel literature. This course will primarily focus on modern travel literature, but some readings of early explorers will establish context for the changes within the genre, for example, from medieval pilgrimages and the Victorian Grand Tour to travelogues and road narratives. The course will also address various purposes for travel such as adventure, exploration and spirituality, as well as trends in modern travel writing such as blogs and eco-tourism. Pre/Corequisite(s): None				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. Pre/Corequisite(s): ENGR2210			
ENGL 2331	American Literature I	3	3/0/0	ENST 2001	Fundamentals of Utilities	4	4/0/0
Meets MnTC Goal Areas 6 and 7. This course introduces the broad spectrum of American literature and the various contexts that shaped it. Readings include major works from the pre-Colonial era through the Civil War. Pre/Corequisite(s): ENGL1102				This course provides a general overview of the electric, gas and telecommunications industries. The course will cover fossil fuel and renewable energy sources for electric power generation, its history and projected needs for the future. The course also covers the natural gas utility from the ground to the consumers, its history and projected needs for the future. Also covered are the telecommunications industry and how the land phone and cell phone systems operate. Pre/Corequisite(s): None			
ENGL 2332	American Literature II	3	3/0/0	ENST 2002	Energy Safety Principles	1	1/0/0
Meets MnTC Goal Areas 6 and 7. This course introduces the broad spectrum of American literature and the various contexts that shaped it. Readings include major works from the Civil War to the present. Pre/Corequisite(s): ENGL1102				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. Pre/Corequisite(s): None			
ENGL 2361	British Literature I	3	3/0/0	ENST 2222	Blueprint Reading for Energy Industry	2	2/0/0
Meets MnTC Goal Areas 6 and 8. This course introduces students to the broad spectrum of British literature and the contexts that shaped it. Readings will include major works from the Anglo-Saxon/Old English, Middle English, Renaissance and Restoration/18th Century historical periods. Pre/Corequisite(s): ENGL1102				This course will introduce the student to reading and interpreting system, strand maps for the gas, electric and communication industry. The student will also be introduced to reading building blueprints and staking and pole framing sheets. This course does not meet any of the required goal areas for the MnTC. Pre/Corequisite(s): None			
ENGL 2362	British Literature II	3	3/0/0	ENST 2223	GPS Mapping	2	1/1/0
Meets MnTC Goal Areas 6 and 8. This course introduces students to the broad spectrum of British literature and the contexts that shaped it. Readings will include major works from the mid-eighteenth century to the present. Pre/Corequisite(s): ENGL1102				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. Pre/Corequisite(s): None			
ENGL 2372	Children's Literature	3	3/0/0	ENTR 1100	Introduction to Entrepreneurship	3	3/0/0
This course meets MnTC Goal Areas 2, 6 and 7. This course introduces students to children's literature. Students will read and respond to diverse, traditional and contemporary texts. Emphasis will be placed on reading, analyzing, interpreting and evaluating children's literature from various contextual frameworks, such as the development of the genre, cognitive development, censorship and depictions of family, race and gender. Pre/Corequisite(s): ENGL1101				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. Pre/Corequisite(s): None			
ENGL 2374	The Poetics of Rock Lyrics	3	3/0/0	ENTR 1400	Opportunity Analysis	3	2/1/0
Meets MnTC Goal Areas 2 and 6. This course focuses on the study of poetry and poetic techniques through the lyrics of rock music. Specifically, the course will include studies of artists from the rock and roll era (1950s through today). Pre/Corequisite(s): ENGL1101 and/or concurrent enrollment				In this course, students will assess their individual or organization's skills, talents, education, and work experiences for potential business opportunities. They will also examine their external environment to identify trends and needs in the marketplace for potential business opportunities. Students will then screen potential business ideas by practicing primary and secondary research methods. Pre/Corequisite(s): None			
ENGR 1100	Project Management	1	1/0/0				
This course provides an overview of the construction industry and introduces the student to the duties and responsibilities of the construction professional. The emphasis of this course will be on the importance of the industry and career possibilities for successful students. Pre/Corequisite(s): None							
ENGR 1118	Engineering Applications	3	3/0/0				
This course covers the application of geometry and trigonometry necessary in the construction and manufacturing industry, architecture, mechanical drafting, construction management and civil engineering. Pre/Corequisite(s): MATH0090 or MATH0052							

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
ENTR 1800	Business Internship	3	0/0/3	EQSC 1170	Introduction to Horse Training	1	0/1/0
<p>This course is designed to provide the student with a purposeful occupational experience in a business environment related to their program of study. 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 45 hours of on-the-job learning. Pre/Corequisite(s): advisor consent</p>				<p>Students will learn through demonstration how to work with an untrained young horse or an older horse to correct problems and maintain the horse. Training theories, safety, grooming, handling, tacking, identifying tack and its uses, artificial and natural aids and their uses, grooming and showing techniques will also be included. Pre/Corequisite(s): None</p>			
ENTR 2200	Entrepreneurial Field Studies	3	0/3/0	EQSC 1180	Equine Evaluation	2	2/0/0
<p>This course exposes students to business owners and practicing entrepreneurs currently managing on-going entrepreneurial enterprises. The purpose of the course is to develop mentor relationships with successful practicing business owners and to gain first-hand experience about the knowledge, skills and abilities necessary to be a successful entrepreneur. Students will submit reports throughout the semester addressing questions that integrate entrepreneurship and other business coursework with their work experience. Pre/Corequisite(s): None</p>				<p>The student will learn the abilities of equine judging including conformation, breed characteristics and type and their importance in evaluation. Also covered are performance evaluation, criteria and scoring methods, as well as preparation and delivery of oral reasons. Pre/Corequisite(s): None</p>			
ENTR 2220	Business Ethics/Professionalism	3	3/0/0	EQSC 2200	Recognition and Management of Equine Disorders	3	3/0/0
<p>This course examines issues related to ethics in business and their impact upon society, the economy and the environment. Students will increase their awareness in making decisions based on ethical judgments. Students will examine the roles, responsibilities and conflicts of business management in the context of organizational ethics. Students will analyze case studies of workplace behavior and define appropriate professional conduct in various workplace scenarios including dress, language and other emerging trends. Pre/Corequisite(s): None</p>				<p>This course will cover the practical aspects of recognizing and managing equine infectious and metabolic disease, lameness and performance problems and breeding issues. Vaccination protocols and parasite prevention will be included. This course will build on the knowledge gained in EQSC 1050 and 1060 and be custom fitted to each student's specific discipline relevant to their internship site. Pre/Corequisite(s): EQSC1050 and EQSC1060</p>			
EQSC 1001	Introduction to Equine Science	1	1/0/0	EQSC 2300	Applied Stable Operations	3	3/0/0
<p>This course introduces the student to the basics of equine breeds, types of horses, including characteristics and uses, and husbandry practices. It will also cover aspects of the equine industry such as career paths and necessary job skills. Pre/Corequisite(s): None</p>				<p>This course will build on the knowledge from EQSC 1130 and 1131. Caring for horses, their environment, nutrition including feeds and feeding, behavior and disease management within a holistic stable/farm/ranch environment will be explored and analyzed. The course will be customized to be relevant to the student's internship experience and will include a capstone project consisting of an in-depth analysis and evaluation of the student's internship facility and business. Pre/Corequisite(s): EQSC1130 and EQSC1131</p>			
EQSC 1050	Equine Anatomy	3	2/1/0	EQSC 2500	Equine Internship	15	0/0/15
<p>This course provides an overview of equine anatomy, physiology and disease management. This course allows students to learn basic anatomy and physiology using a systems approach specific to the equine. The student will apply this knowledge to the subjects relevant to equine health management such as equine diseases, disease prevention (vaccination and husbandry), lameness, performance and parasite control. Pre/Corequisite(s): None</p>				<p>Prerequisites: EQSC 1001,1050,1060,1130,1131,1140,1150,1160 and 1170. This course will provide the student practical experience and on-the-job training relevant to the equine industry. The internships will take place at sites throughout the country or world. These sites are all working farms, ranches, clinics, breeding facilities, stables, etc. All disciplines (English, western, ranch, breeding, veterinary, riding, training, showing, etc) are represented in order to meet a student's specific area of interest. Students will be required to meet written goals and objectives and undergo evaluations from their host supervisor. Student academic progress will also be monitored via M State online learning platform (15credits x 45 semester hours = 675 hours.) Pre/Corequisite(s): EQSC1001 and EQSC1050 and EQSC1060 and EQSC1130 and EQSC1131 and EQSC1140 and EQSC1150 and EQSC1160 and EQSC1170</p>			
EQSC 1060	Equine Reproduction and Nutrition	3	3/0/0	ESTH 1808	Advanced Skin Treatments	3	1/2/0
<p>This course introduces the student to the management of the breeding stallion, reproducing mare and newborn foal. It will discuss the anatomy and endocrinology of the reproductive system, the mare estrus cycle, spermatogenesis and cooled and frozen semen insemination techniques. Fundamentals of equine nutrition, feed selection, digestive anatomy and ration evaluation will also be covered. Pre/Corequisite(s): None</p>				<p>In this course you will learn advanced skin care techniques including lymph drainage, peels, microdermabrasion and spa body treatments. Pre/Corequisite(s): None</p>			
EQSC 1130	Stable Operations I	1	0/1/0	FASH 1158	Business Insights	1	0/1/0
<p>Students will have hands-on experience working in an operational equine facility including training, boarding, riding and lessons. Students will help with day-to-day care and will share the responsibilities of the horse's health and well-being, including feeding, parasite control and medical attention. Pre/Corequisite(s): None</p>				<p>Examination of the fashion industry from designers and manufacturers to the final finished product in the hands of the buying public is covered in this course. Students analyze the impact of current events, trendsetters, the economy, the media and technology on current fashions in the marketplace. This hands-on course includes a several-day field trip to Minneapolis. Pre/Corequisite(s): None</p>			
EQSC 1131	Stable Operations II	2	1/1/0	FASH 2248	Buying	3	3/0/0
<p>Students will have hands-on experience working in an operational equine facility such as training, boarding, riding and lessons. Students will help with day-to-day care and will share the responsibilities of the horse's health and well-being including feeding, parasite control and medical attention. This advanced section may also include first aid, vaccinations and foaling procedures. The program capstone project, including a business plan, and the program portfolio project will be completed in this course. Pre/Corequisite(s): None</p>				<p>The essentials of effective retail fashion buying are covered in this course. The main areas include the retail buying environment, planning and control functions and the buyer/market/vendor relationship. Pre/Corequisite(s): None</p>			
EQSC 1140	Western Horsemanship	3	1/2/0	FASH 2250	Visual Merchandising	3	2/1/0
<p>The student will learn safety, grooming, handling, tack identification and its uses, tacking, showing techniques, correct body position and riding in western disciplines. A large emphasis will be on horse and rider body communication through balance and coordination. Pre/Corequisite(s): None</p>				<p>This course covers the principles and elements of design and display. During this course, the students are required to build various displays which utilize the elements and principles of visual merchandising. Pre/Corequisite(s): None</p>			
EQSC 1150	Fundamentals of Riding Instruction	2	1/1/0	FASH 2258	Field Studies	2	0/2/0
<p>The student will be provided training in how to give clear, practical and comprehensible instruction. Varied instruction styles will be covered, as well as developing lesson plans, executing lesson plans, problem solving and instruction management. Pre/Corequisite(s): None</p>				<p>Examination of the fashion industry from designers and manufacturers to the finished product will be covered in this course. Students will analyze the impact of current events, trend setters, the economy, the media and technology on current fashions in the market place. This hands-on course includes a several-day field trip to New York or other major market areas. Pre/Corequisite(s): None</p>			
EQSC 1160	English Equitation	3	1/2/0	FIRE 1100	Introduction to Fire Service	2	2/0/0
<p>The student will learn safety, grooming, handling, tack identification and its uses, tacking, showing techniques, correct body position and riding in hunt seat, dressage and jumping disciplines. A large emphasis will be on horse and rider body communication through balance and coordination. Pre/Corequisite(s): None</p>				<p>This course covers the basic information that the student will need to understand the fire protection career field. It will provide an overview of the firefighter selection process and assist in preparing the student for the competitive selection process. It will also provide additional information on fire protection careers other than firefighter. This course will cover the history of public fire protection; basic terminology; the chemistry, physics and behavior of fire; fire suppression; fire-based emergency medical services; hazardous materials response; fire prevention; and physical fitness training requirements. Pre/Corequisite(s): None</p>			

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FIRE 1106	Firefighter I and II	3	3/0/0				
<p>This course covers the objectives of the Minnesota State Fire Chiefs Association (MSFCA) for certification as a Firefighter I and Firefighter II. The MSFCA objectives are based on the National Fire Protection Association's (NFPA) 1001: Standard for Fire Fighter Professional Qualifications. This will prepare the student to function at or above the minimum level of training for entry into a fire protection career field.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 1108	Firefighter I and II Skills	4	0/4/0				
<p>This course covers the objectives of the Minnesota State Fire Chiefs Association (MNFCA) for certification as a Firefighter I and II. The MNFCA objectives are based on National Fire Protection Association (NFPA) 1001 Standard for Fire Fighter Professional Qualifications. This will prepare the student to function at or above the minimum level of training for entry into a fire protection career field.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 1150	HazMat Operational	3	2/1/0				
<p>This course is designed to teach the necessary skills to protect yourself, your fellow responder and the public from exposure in a hazardous materials incident. The course meets the requirements of the OSHA (Occupational Safety and Health Administration) 1910.120 for the First Responder Operation level. The student will learn how to recognize and identify the presence of hazardous materials, the proper protective clothing to use, how to decontaminate properly, how to establish an Incident Command System and the proper standard operating procedures to maintain safety at the incident scene. The course follows the NFPA (National Fire Protection Association) Standard 472 requirements for the First Responder Operational level.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 1152	Building Construction	3	2/1/0				
<p>This course will cover basic building construction techniques. It will also cover safety features of today's buildings in relation to firefighter safety, fire behavior and building behavior when subjected to fire conditions.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 1180	Building Construction for Fire Protection	3	3/0/0				
<p>This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, pre-planning fire operations and operating at emergencies.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2020	Fire and Emergency Services Administration	3	3/0/0				
<p>This course introduces the student to the organization and management of a fire and emergency services department and the relationship of the government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics and leadership from the perspective of the company officer as described in the National Fire Protection Association's (NFPA) 1021 Fire Officer Professional Qualifications 2009 Edition for state certification for Fire Officer I and Fire Officer II.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2030	Fire Instructor I	2	2/0/0				
<p>This course introduces students to the various objectives of the National Fire Protection Association (NFPA) 1041 Fire Service Instructor Professional Qualifications 2009 Edition for state certification for Fire Instructor I. This will prepare the student to function at the minimum level of training for a fire service instructor.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2040	Fire Protection Systems	3	3/0/0				
<p>This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2050	Fire Prevention	3	3/0/0				
<p>This course provides fundamental knowledge relating to the field of fire prevention. Topics include history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2060	Strategy and Tactics	2	2/0/0				
<p>This course provides the principles of fire ground control through utilization of personnel, equipment and extinguishing agents.</p> <p>Pre/Corequisite(s): None</p>							
FIRE 2080	Fire Service Leadership and Management	3	3/0/0				
<p>This course will explore the skills necessary to function as a supervisor within a tight-knit, family-like setting. Topics will include motivating employees; group dynamics; managing change; organizational behavior; organizational culture; performance evaluations; leadership theories; group cohesiveness; generational considerations; and personal leadership styles.</p> <p>Pre/Corequisite(s): None</p>							
FNCS 1111	Intro to Financial Services	3	3/0/0				
<p>This course covers the history of banking, bank organizational structure, the Federal Reserve System and the types of services provided by financial institutions. Deposit, loan and consumer services will be emphasized. Topics include checking accounts, savings accounts, credit cards, electronic funds transfer, loan products, loan processing, trusts, bank profitability, deregulation and safety of bank funds. This course also gives attention</p>							
					to industry concern about customer service, sales, marketing and competition.		
					Pre/Corequisite(s): None		
FYE 1101	First Year Experience	3	3/0/0				
<p>The First Year Experience course is designed to help M State students strengthen and develop critical and creative thinking skills associated with a college academic experience, social adaptation to a new environment and making 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.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 1113	Design and Layout I	3	2/1/0				
<p>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.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 1115	Design and Layout II	3	2/1/0				
<p>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.</p> <p>Pre/Corequisite(s): GDTC1113</p>							
GDTC 1126	Digital Photography	3	2/1/0				
<p>In this course students will develop basic photographic skills and knowledge using a digital camera for a variety of assignments.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 1134	Electronic Drawing I	3	2/1/0				
<p>This course covers fundamental functions of Adobe Illustrator or other vector-based equivalent instructor designated software to create basic illustrations and layout.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 1144	Electronic Drawing II	3	2/1/0				
<p>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.</p> <p>Pre/Corequisite(s): GDTC1134</p>							
GDTC 1150	Process Printing Theory	3	3/0/0				
<p>This course provides foundational theory on print process as well as printing terminology. Focus is on theory and not on application of technology.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 2212	Design and Layout III	3	2/1/0				
<p>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 applications of these concepts are explored in the form of self-promotional projects. Special emphasis is placed on research, marketing techniques, rationale and presentation.</p> <p>GDTC1113 and GDTC1115</p>							
GDTC 2214	Integrated Graphic Design	3	2/1/0				
<p>This course focuses on the advanced integration of Adobe software technology and graphic design application. Coursework will include a continuation of brand development and design of grid systems, advanced typographic application, color theory application and development of written and verbal design rationale.</p> <p>Pre/Corequisite(s): GDTC2278 and GDTC2244</p>							
GDTC 2238	Layout and Design Studio	3	1/2/0				
<p>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.</p> <p>Pre/Corequisite(s): GDTC2203 and GDTC1115 and GDTC2242 and GDTC2212</p>							
GDTC 2242	Electronic Publishing	3	2/1/0				
<p>Students will learn in-depth technical skills necessary for page layout design. A variety of design projects will be assigned that 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.</p> <p>Pre/Corequisite(s): None</p>							
GDTC 2244	Advanced Electronic Imaging	3	2/1/0				
<p>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.</p> <p>Pre/Corequisite(s): GDTC1144 and GDTC2203</p>							

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GDTC 2246	Advanced Photography and Imaging	4	2/2/0	HIST 1113	Western Civilization: 20th Century	3	3/0/0
<p>In this course students will learn how to shoot photographs in Raw File Format, demonstrate setting components for Raw File Format and develop a clear understanding of the different computer file formats, file size, resolution, dpi and mega pixels. Students will also demonstrate color correction; RGB, CMYK and CMYK profiles; develop a high competency of manipulating photographs using Photoshop; and understand the importance of computer monitor calibration for color quality. In some of the assignments student will demonstrate advanced photography framing techniques and focus on how various lenses, aperture settings and film speeds work together.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 5 and 8. 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.</p> <p>Pre/Corequisite(s): None</p>			
GDTC 2258	Graphic Design Professional Practices	3	2/1/0	HIST 1500	European Experience	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): GDTC2212 and GDTC2242</p>				<p>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 upon a 10-day trip to Paris and London, where they visit historical sites they studied during the on-campus portion of the course.</p> <p>Pre/Corequisite(s): None</p>			
GDTC 2276	Graphic Design Internship	3	0/0/3	HIST 1600	History of Baseball	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): GDTC2203 and GDTC2212</p>				<p>Meets MnTC Goal Area 5. This course deals with the history of baseball in America. 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.</p> <p>Pre/Corequisite(s): None</p>			
GDTC 2278	Digital Preflight	3	2/1/0	HIST 2211	American History Colonial Period	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): GDTC2242</p>				<p>Meets MnTC Goal Areas 5 and 7. History 2211 is the first course in an American history sequence. The course content is essentially the colonial period in American history, including European and West Indian background, the rise of colonial "regions" in English North America, the clash of three cultures and races, the maturing of the English colonies and movement toward the Revolution. This course is most likely to be of value to those who have little background in colonial American history.</p> <p>Pre/Corequisite(s): None</p>			
GEOG 1110	World Geography	3	3/0/0	HIST 2212	American History 19th Century	3	3/0/0
<p>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, and this course will explore these elements and their contributions to the diversity of world geographics. The student will become aware of how the world and the earth's people interact in local regions and in patterns around the globe.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 5 and 7. History 2212 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.</p> <p>Pre/Corequisite(s): None</p>			
GLST 1121	Humanities Italy	3	3/0/0	HIST 2213	American History: 20th Century	3	3/0/0
<p>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 co-requisite course and will serve as a reinforcement of the Italian culture and an understanding of the integration of the arts within the culture.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
GLST 1510	Global Studies: Natural Science	3	3/0/0	HITM 1150	Introduction to Health Care Delivery	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): Permission of the instructor is required.</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
HEAT 2218	Gas Heating	2	1/1/0	HITM 1152	Health Information Systems	3	2/1/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is a study of numbering systems, master patient index, filing systems, microfilming 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.</p> <p>Pre/Corequisite(s): None</p>			
HEAT 2220	Oil Heating	2	1/1/0	HITM 1155	Medicolegal Aspects	3	3/0/0
<p>This course covers the use of oil as a means used to heat various media including air and water.</p> <p>CONE1102 and PLBG1128</p>				<p>This course is 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.</p> <p>Pre/Corequisite(s): HITM1150</p>			
HIST 1110	Western Civilization: Ancient-1400	3	3/0/0	HITM 1159	Professional Practice Experience I	2	0/0/2
<p>Meets MnTC Goal Areas 5 and 8. A discussion of the political, economic, cultural and social factors which have shaped the history of the Western world. Topics include ancient civilizations, the Hebrews, the Greeks, the Romans, the rise of Christianity, feudalism and manorialism, the rise of Islam, the Merovingians and the Carolingians.</p> <p>Pre/Corequisite(s): None</p>				<p>This course provides the student with practical application of theories learned during the course of study. Under the supervision of a qualified health information professional, the student gains professional practice experience.</p> <p>Pre/Corequisite(s): 11 HITM credits and 2.0 GPA</p>			
HIST 1111	Western Civilization: 1400-1600	3	3/0/0	HITM 2000	ICD-9 Special	3	2/1/0
<p>Meets MnTC Goal Areas 5 and 8. A discussion of 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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is a special addition to the Health Information Technology program to allow students to graduate with the knowledge of the International Classification of Diseases-9 in addition to the International Classification of Diseases-10. The students graduating May 2013 will need to be able to code ICD-9 until the implementation of ICD-10 in October 2013. This course will be offered only spring semester 2012.</p> <p>Pre/Corequisite(s): Must be scheduled for enrollment in ICD-10 Coding fall semester 2012.</p>			
HIST 1112	Western Civilization: 1600-1800	3	3/0/0	HITM 2202	Computer Applications in Healthcare	3	2/1/0
<p>Meets MnTC Goal Areas 5 and 8. 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 Intellectual Revolution, the French Revolution and the Industrial Revolution.</p> <p>Pre/Corequisite(s): None</p>				<p>This course develops the health information technology student's knowledge of computer theory and application in the areas of system collection, storage and retrieval.</p> <p>Pre/Corequisite(s): None</p>			

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HITM 2210	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. Pre/Corequisite(s): HLTH1116	2	2/0/0				
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. Pre/Corequisite(s): BIOL2230 and HLTH1106 and Permission of instructor	3	2/1/0				
HITM 2216	Introduction to CPT Coding This course covers an in-depth study of the Physician's Current Procedural Terminology (CPT-4) coding system. Pre/Corequisite(s): HLTH1106 Permission of the instructor	3	2/1/0				
HITM 2236	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. Pre/Corequisite(s): Permission of instructor	2	1/1/0				
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. Pre/Corequisite(s): HLTH1106 and Permission of instructor	2	1/1/0				
HITM 2250	Supervisory Leadership in Health This course is a study of the basic principles of management, communication and working relationships in a healthcare setting. The role of the health record technician as a supervisor is discussed. Pre/Corequisite(s): None	3	3/0/0				
HITM 2252	Quality Management & Statistics 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. Pre/Corequisite(s): HITM1152	3	2/1/0				
HITM 2262	Reimbursement Systems This course is an introduction to the current reimbursement systems that are used in the healthcare industry both in inpatient and outpatient settings. Pre/Corequisite(s): HITM2212 or HITM2242	2	2/0/0				
HITM 2270	Professional Practice Experience II This course provides the student with practical application of the classroom theories and coursework. Under the supervision of a qualified supervisor, the student gains professional practice experience in supervisory functions. Pre/Corequisite(s): None	1	0/0/1				
HITM 2272	Professional Practice Experience Coding 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 coding and reimbursement. Pre/Corequisite(s): By permission of instructor.	2	0/0/2				
HLTH 1110	Introduction to Anatomy and Physiology This course is an introduction to the structure and function of the human body. Focus will be on the study of each individual organ system and the interaction of each system with the rest of the body. Pre/Corequisite(s): None	3	3/0/0				
HLTH 1111	Personal & Comm Hlth A study of normal body functions and health practices. Designed to help the student maintain good physical, mental and social well-being. Topics include anatomy and physiology, emotional and mental health, drug use and abuse, plus nutrition and fitness. Course is designed to prepare students to meet health responsibilities in the home and in the community, to prepare students to understand the aging process and to be more knowledgeable consumers. Topics of study include disease and treatment, sexuality and parenting, health limits and consumerism. Pre/Corequisite(s): None	3	3/0/0				
HLTH 1112	Intro to Home Health 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 homemaking 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. Pre/Corequisite(s): HLTH1115	1	1/0/0				
HLTH 1115	Intro to Nursing in Long Term Care 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	3	1/2/0				
	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. Pre/Corequisite(s): None						
HLTH 1116	Medical Terminology 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. Pre/Corequisite(s): None	3	3/0/0				
HLTH 1130	Transcultural Health Concepts This course will provide students with the opportunity to examine their own values, beliefs, attitudes and behaviors and to integrate this analysis in understanding cultural awareness while recognizing the significance that culture has on health beliefs and practices. 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 to working with diverse populations in a variety of settings. Pre/Corequisite(s): None	1	1/0/0				
HLTH 2208	Pathophysiology This course presents information related to pathophysiology of various body systems. The nature, cause, diagnosis and treatment of common disease conditions will be emphasized. Pre/Corequisite(s): HLTH1110 or BIOL2230	3	3/0/0				
HLTH 2212	Social Seminar Drug Education This course is designed to cover the use, abuse and dependency of legal and illicit 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. Pre/Corequisite(s): None	3	3/0/0				
HLTH 2215	EMT Basic The Emergency Medical Technician-Basic (EMT-B) course follows the current National Standard Curriculum. This course 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 of instruction, the student will be eligible to take the state/national registry computer and practical examinations. Pre/Corequisite(s): None	6	4/2/0				
HONS 1101	Introduction to Honors Meets MnTC Goal Area 2. This course is for students enrolled in the Honors Program during the first semester of the program. The course 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. Pre/Corequisite(s): None	1	1/0/0				
HONS 2900	Honors Capstone Seminar Meets MnTC Goal Area 2. This course is intended to be taken by students within the Honors Program during the final semester of the program. The course 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. Pre/Corequisite(s): None	1	1/0/0				
HRES 1122	Human Resource Management This course covers an introduction to the basic principles of human resource functions and services. It provides a background and understanding for further human resource courses. Pre/Corequisite(s): None	3	3/0/0				
HRES 1126	Employee Processes This course covers basic knowledge of the factors to be considered and the strategies used in the employment process. Topics included in this course include the job analysis, job description, job postings, employment ads and interviewing. Pre/Corequisite(s): None	3	3/0/0				
HRES 1130	Benefits Administration This course covers basic knowledge and information about the various types of benefits that are typically offered by employers for their employees. Pre/Corequisite(s): None	3	3/0/0				
HRES 1134	Training and Development 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. Pre/Corequisite(s): None	3	3/0/0				

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HRES 2204	Policy Administration	3	3/0/0	HUM 2236	Technology in the Humanities	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.				Meets MnTC Goal Areas 2, 6 and 8. Developments in the arts, architecture, science, philosophy and education and studies in human interaction are often provoked by changes in technology. Early changes in military technology made it possible for civilizations to take charge of various places on the world's stage. However, over time, changes in how the world was understood, motivated by general advances in global exploration, astronomy and other sciences as well as specific inventions such as movable type, proved even more instrumental in driving people to new and different understandings of what it means to be human. This course explores how technology impacts developments in a culture's world view and tries to anticipate how future changes in technology might alter the course of otherwise established ways of life.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HRES 2212	Wage/Salary Administration	3	3/0/0	HUM 2281	Culture of the British Isles	3	3/0/0
This course covers basic knowledge and understanding of employee compensation and related federal laws.				Meets MnTC Goal Areas 6 and 8. This multidisciplinary course will introduce students to a close study of the art, literature and music of the British Isles with an emphasis on England, Ireland and Wales. Students will develop an appreciation of the Irish, English and Welsh cultures and an understanding of the integration of the arts within each culture. Registering for Humanities 2281 will make each student eligible for GLST 2291: Humanities British Isles.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HRES 2224	Employee/Labor Relations	3	3/0/0	HUM 2293	Field Experience: Europe	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.				Meets MnTC Goal Areas 6 and 8. A travel abroad experience taken to encourage studies in the humanities involving visits to sites that are often discussed in the traditional classroom. The courses include scheduled academic activities in preparation for the trip and in cities such as London, Paris, Rome, Munich or other locations as determined by the instructor.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HRES 2245	Human Resources Internship	1-4	None	HUM 2295	Field Experience: The East	3	3/0/0
This course is designed to provide the student with a purposeful occupational experience in the human resources 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. One credit of internship is equal to 45 hours of internship.				Meets MnTC Goal Areas 6 and 8. Meets MnTC Goal Areas 6 and 8. A travel abroad experience taken to encourage studies in the humanities involving visits to sites that are often discussed in the traditional classroom. The courses include scheduled academic activities in preparation for the trip and in countries in the East, Middle East and Eastern Europe as determined by the instructor.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HRES 2252	Human Resources Competency and Portfolio Evaluation	2	1/1/0	HVAC 1102	Duct Fitting Construction	3	1/2/0
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.				Standard sheet metal fittings will be constructed in this class. Familiarity with sheet metal shop equipment and various tools will be gained through the layout and construction of sheet metal projects. All fittings in this class will be found in standard duct applications.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HUM 1105	Religion in the Humanities	3	3/0/0	HVAC 1104	Heating, Ventilating, and Air Conditioning Electrical Controls	3	1/2/0
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.				This course covers the wiring of typical heating and cooling circuits, along with the hook-up and installation of air conditioning.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HUM 1110	Native American Culture	3	3/0/0	HVAC 1128	Heating, Ventilating, and Air Conditioning Design and Installation	5	2/3/0
Meets MnTC Goal Areas 2, 6 and 7. 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.				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.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HUM 1120	Culture of Italy	3	3/0/0	HVAC 2202	Air Handling	2	1/1/0
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 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.				This course studies the handling of masses of air, with attention paid to moving and replacing air at given velocities, quantities, temperatures and humidity. Additional attention to friction loss in ductwork, and the calculation of it, will involve various design applications and actual lab layout.			
Pre/Corequisite(s): None				Pre/Corequisite(s): HVAC1128			
HUM 1132	Women in the Humanities	3	3/0/0	HVAC 2204	Advanced Duct Fitting Construction	3	1/2/0
Meets MnTC Goal Areas 6 and 7. 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.				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.			
Pre/Corequisite(s): None				Pre/Corequisite(s): None			
HUM 1134	Global Perspectives for Women	3	3/0/0	HVAC 2212	Hot Water Heating	3	2/1/0
Meets MnTC Goal Areas 6 and 8. A multi-disciplinary study designed to enhance international 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. Meets three hours per week.				This course covers both hot water baseboard and in-floor heating, with emphasis on calculations involved in hydronic heating.			
Pre/Corequisite(s): None				Pre/Corequisite(s): CONE1102 and HVAC1128			
HUM 2210	Introduction to Film	3	3/0/0	HVAC 2220	Heat Pump Theory	1	1/0/0
Meets MnTC Goal Areas 2 and 6. This course offers students an overview of the elements that comprise "telling stories on film." Students will study shot, angle, lighting, mise en scene, movement, editing, sound, etc. The course will also consider how film elements work to present various ideologies. Students will become familiar with open and closed forms and the distinctions among realism, classicism and formalism. Students will participate in film analysis using the concepts above.				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.			
Pre/Corequisite(s): None				Pre/Corequisite(s): REFR1102			
HUM 2230	World Cinema	3	3/0/0	HVAC 2250	Heating, Ventilating, and Air Conditioning Applications	1	0/1/0
Meets MnTC Goal Areas 6 and 8. Global Cinema will introduce students to films from non-English speaking countries around the globe. The course will study stories and societies through cinema, readings and lecture. Students will consider their own worldview while they screen films and analyze multiple themes and ideas as a means of enriching their global perspective.				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.			
Pre/Corequisite(s): None				Pre/Corequisite(s): HVAC1104 and REFR1110 and REFR1112			

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HVAC 2254	Heating, Ventilating, and Air Conditioning Interrelated Topics	1	1/0/0	INTD 1140	JavaScript	3	2/1/0
<p>This course will add to the student's electrical knowledge regarding circuits and schematics. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
HVAC 2260	Refrigerant Certification	1	1/0/0	INTD 1150	Databases on the Server	3	2/1/0
<p>This course covers the content necessary to achieve an EPA Certification rating. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
HVAC 2290	Heating, Ventilating, and Air Conditioning Internship	1	0/0/1	INTD 2210	Interface Design	3	2/1/0
<p>This course will add to the student's electrical knowledge regarding circuits and schematics. Pre/Corequisite(s): This course should be taken along with Cone 102.</p>				<p>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. Pre/Corequisite(s): INTD1124 or Concurrent Enrollment in INTD1124 or Consent of Instructor</p>			
IMMA 1110	Intro Power & Mech Sys	3	1/2/0	INTD 2213	Flash	3	2/1/0
<p>This course will provide an overview of the design, operation and maintenance principles of basic mechanical system components. The terminology, theory, application and construction 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. Pre/Corequisite(s): None</p>				<p>Students will learn how to design and deliver cross-platform, low-bandwidth animations, presentations and Web applications using Flash and Actionsript. Pre/Corequisite(s): None</p>			
IMMA 1112	Mech Blueprint Reading	2	2/0/0	INTD 2226	Web Programming	3	2/1/0
<p>This course will teach the fundamentals of blueprint reading and will include the interpretation of geometric construction, multi-view projection, dimensioning, auxiliary and sectional views. The course will also include the identification of drafting symbols and conventional methods of presentation. Pre/Corequisite(s): None</p>				<p>In this class, 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. Pre/Corequisite(s): INTD1140 or INTD1110</p>			
IMMA 2223	Fluid Power Lab	2	1/1/0	INTD 2228	Web Projects	3	2/1/0
<p>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. Pre/Corequisite(s): MATH0052 and An accuplacer arithmetic score of 57 or completion of Math 0052</p>				<p>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 assess 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. Pre/Corequisite(s): INTD2246</p>			
INTD 1108	HTML	3	2/1/0	INTD 2231	Emerging Technologies	1	0/1/0
<p>Students will learn the basics of creating Web pages using up-to-date techniques with HTML, CSS and XHTML. In this hands-on course, students will learn to create standards-based Web pages that are cross-browser compliant. Students will learn to make their websites available on the Web by uploading pages to a Web server. Pre/Corequisite(s): None</p>				<p>As a computer professional, you will be 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. Pre/Corequisite(s): None</p>			
INTD 1111	Hands-On Programming	3	2/1/0	INTD 2236	Advanced Web Programming	3	2/1/0
<p>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 skill sets like time management, teamwork, problem solving and communications. Pre/Corequisite(s): None</p>				<p>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 project planning skills, as well as utilize problem-solving techniques to write effective applications. Pre/Corequisite(s): INTD2226 and INTD2246</p>			
INTD 1113	Dreamweaver	3	2/1/0	INTD 2238	Web Portfolio	3	1/2/0
<p>The focus of this course is designing websites using Dreamweaver. The emphasis will be on learning the Dreamweaver software application and on applying graphic design concepts. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): INTD2210 or Consent of Instructor</p>			
INTD 1117	Photoshop	3	2/1/0	INTD 2246	PHP	3	2/1/0
<p>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. Pre/Corequisite(s): None</p>				<p>Students will learn how to develop dynamic websites using PHP. Topics covered will include basic syntax, deploying PHP web pages and database connections. Pre/Corequisite(s): INTD1140</p>			
INTD 1124	Cascading Style Sheets	3	2/1/0	ITSS 1100	Information Technology Help Desk	3	2/1/0
<p>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. Pre/Corequisite(s): INTD1108</p>				<p>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. Pre/Corequisite(s): None</p>			
INTD 1130	Electronic Commerce	3	2/1/0	ITSS 1120	Information Technology Research and Documentation	3	1/2/0
<p>This course introduces emerging 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. Next, 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. Finally, students will develop an online marketing plan. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
LAND 1102	Intro to Landscape/Horticulture	3	2/1/0	MATH 1020	Intermediate Algebra	3	3/0/0
<p>This course introduces students to the industry of landscape horticulture and the use, production and maintenance of ornamental plants. The course exposes students to regional landscape and garden center industries through lecture, field trip and guest speakers.</p> <p>Pre/Corequisite(s): None</p>				<p>This course is the second preparatory algebra course and readies students for the first college-level mathematics course. Concepts studied in the course include rational expressions and equations, functions, radical expressions and equations, complex numbers and solving equations using factoring, completing the square and the quadratic formula.</p> <p>Pre/Corequisite(s): None</p>			
LAND 1105	Soils and Fertilizers	3	2/1/0	MATH 1100	World of Math	3	3/0/0
<p>This course is a study of soils and plant nutrition. Emphasis is on physical and chemical properties, water, organic matter and life of soils. Process and methods of supplying nutrients to plants will be covered.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): MATH1020</p>			
LAND 1108	Equipment Operations	2	2/0/0	MATH 1102	Finite Math	3	3/0/0
<p>In this course students will learn general operations, safety guidelines and specialized maintenance procedures for light, medium and hand-held equipment use in landscaping. Students will also gain exposure to Department of Transportation road safety and equipment transportation methods.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): MATH1020</p>			
LAND 1111	Landscape Horticulture	3	2/1/0	MATH 1114	College Algebra	4	4/0/0
<p>In this course students will learn about different ornamental plants hardy to our region. This course also teaches students how to identify these plants, their basic characteristics, cultural needs, reproduction methods and common pest problems.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): MATH1020 and or by placement exam</p>			
LAND 1114	Garden Center Operations	3	3/0/0	MATH 1115	Functions/Trigonometry	4	4/0/0
<p>In this course students will gain an understanding to operate and manage tree and shrubs nurseries and related facilities that develop domesticated plants products for transportation. Also covered are instruction in applicable principles of plant science, garden center operations, equipment operation and maintenance, safely procedures and personnel supervision. Learn to build and maintain good relationships with internal and external customers and learn the role of the customer team in developing, evaluating and improving customer service systems.</p> <p>Pre/Corequisite(s): None</p>				<p>This course 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.</p> <p>Pre/Corequisite(s): MATH1114</p>			
LAND 1117	Landscape Management	3	3/0/0	MATH 1116	College Trigonometry	3	3/0/0
<p>This course is designed to help students understand landscape management operations. This course covers turf management, hand and small tool operation, safety, environmental issues and the impact of design and maintenance requirements. Also introduced in this class are building codes, contractor requirements and contemporary business concepts such as workers compensation and liability insurance.</p> <p>Pre/Corequisite(s): None</p>				<p>This course 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.</p> <p>Pre/Corequisite(s): MATH1114</p>			
LAND 1120	Landscape Design Layout	3	2/1/0	MATH 1118	Precalculus	5	5/0/0
<p>This course introduces students to a working knowledge in traditional landscape and design layout. Student will also develop and apply skills in basic drafting techniques, reading plans, line work, graphics and concepts of scale. They will also address local building codes.</p> <p>Pre/Corequisite(s): LAND1102 and LAND1111</p>				<p>This course 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.</p> <p>Pre/Corequisite(s): MATH1020 and Math 1020 with a C or better or by placement score</p>			
LAND 1123	Landscape Construction	4	2/2/0	MATH 1122	Applied Calculus and Linear Algebra	3	3/0/0
<p>This course covers the basics of surveying elements of landscaping construction and working with different resources such as concrete, masonry, stones, pavers, and low-voltage electrical in the landscape industry. Students will also learn how to develop and read construction drawings, specifications for specific structure, material selection, cost estimation and site layout including preparation, grading and drainage.</p> <p>Pre/Corequisite(s): None</p>				<p>This course 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.</p> <p>Pre/Corequisite(s): MATH1114</p>			
LAND 1126	Ornamental Plant Maintenance	3	2/1/0	MATH 1134	Calculus I	5	5/0/0
<p>This course covers plant identification and maintenance. Special attention will be paid to plants and turf used in regional landscapes. The individual characteristics, uses and environmental tolerance of different species will be discussed. Students will develop their ability to diagnose plant pest problems and make recommendations to deal with these problems.</p> <p>Pre/Corequisite(s): LAND1102 and LAND1111</p>				<p>This course 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.</p> <p>Pre/Corequisite(s): MATH1115 and or by placement exam or MATH1116 or MATH1118</p>			
LAND 1129	Landscape Project	3	0/3/0	MATH 1135	Calculus II	5	5/0/0
<p>In this course students will design and build projects at different locations on the campus or at homes built by the carpentry program. The intent is to promote the development of innovative, healthy and environmentally sustainable landscapes and provide hands-on learning opportunities for students.</p> <p>Pre/Corequisite(s): None</p>				<p>This course meets MnTC Goal Areas 2 and 4. This course includes integration of logarithmic, exponential, trigonometric and hyperbolic functions and their inverses. Students will apply techniques of integration. Polar coordinates, conic sections, indeterminate forms, improper integrals and infinite series are also included.</p> <p>Pre/Corequisite(s): MATH1134</p>			
MATH 52	Foundations of Math	3	3/0/0	MATH 1207	Elementary Statistics	3	3/0/0
<p>This course presents basic mathematical operations to students. The course concepts cover operations on whole numbers, integers, fractions and decimals, as well as the applications of percents, ratios, proportions, measurements and basic geometry.</p> <p>Pre/Corequisite(s): None</p>				<p>This course meets MnTC Goal Areas 2 and 4. This course will investigate descriptive and inferential statistical concepts including measures of central tendency, measures of variation, measures of position, frequency tables, statistical graphs, probability distributions, hypothesis tests, confidence intervals, regression and correlation. TI calculators, MINITAB or EXCEL may be used for data analysis.</p> <p>Pre/Corequisite(s): MATH1114 or MATH1118 or by placement</p>			
MATH 90	Introductory Algebra	3	3/0/0	MATH 1213	Introduction to Statistics	4	4/0/0
<p>This course is an introduction to basic algebraic concepts. This course covers the use of expressions, solving equations and formulas, manipulating and graphing linear equations and inequalities in two variables, solving systems of equations, utilizing rules for exponents, performing operations on polynomials, factoring polynomials and solving equations using factoring.</p> <p>Pre/Corequisite(s): None</p>				<p>This course meets MnTC Goal Areas 2 and 4. Topics include data summary, frequency distributions, plots, graphs, measures of central tendency, variation, probabilities, probability distributions and confidence intervals. Hypothesis testing of means, proportions and variances will be conducted using the z-test, t-test, chisquare-test, f-test and ANOVA. Optional topics may include nonparametric statistics, sampling and simulation.</p> <p>Pre/Corequisite(s): MATH1114 and or by placement exam or MATH1118</p>			

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MATH 2200	Principles of Arithmetic	3	3/0/0	MCS 2230	Multicultural America	3	3/0/0
<p>This course meets MnTC Goal Areas 2 and 4. It is primarily a mathematics rather than a methods course. Concepts covered include arithmetic as a system of thought, number and sets, basic number operations and their underlying formal logic, number structure and basic geometry concepts. Pre/Corequisite(s): MATH1114 or MATH1100</p>				<p>Meets MnTC Goal Area 7. This course provides an introduction to multicultural perspectives on American education. Given that the United States is becoming more culturally diverse and operates within an increasingly globalized world, citizens need to be equipped to understand the diverse cultures with which they work and interact. This course exposes students to the experiences and challenges of African Americans, American Indians, Chicano/Latinos and Asian Americans in the U.S. educational system from historical and contemporary perspectives. Pre/Corequisite(s): None</p>			
MATH 2231	Calculus III	4	4/0/0	MCS 2231	Multicultural America: Service Learning	1	1/0/0
<p>Meets MnTC Goal Areas 2 and 4. The course content includes a study of vectors in the plane and space, differentiation and integration of vector-valued functions, and partial differentiation, multiple integrals, including line and surface, in rectangular, polar, cylindrical, spherical and other systems, and a study of Stokes' Theorem, Green's Theorem, and the Divergence Theorem. Pre/Corequisite(s): MATH1135</p>				<p>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. The nature of the service learning necessitates that students may meet outside of regular class hours (20-25 hours) and may need their own transportation to service learning sites. Pre/Corequisite(s): MCS2230</p>			
MATH 2257	Linear Algebra	3	3/0/0	METC 1112	Manufacturing Processes	4	2/2/0
<p>Meets MnTC Goal Areas 2 and 4. The course focuses on systems of linear equations, matrices, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors. Pre/Corequisite(s): MATH1134</p>				<p>This course will teach 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 provide class participants with basic skills in machining, welding and wood processing technologies. Pre/Corequisite(s): None</p>			
MATH 2259	Differential Equations	4	4/0/0	METC 1152	Safety & Accident Prevent	3	3/0/0
<p>Meets MnTC Goal Areas 2 and 4. This course includes first and second order differential equations with applications in physics, electrical engineering and chemistry. It also includes Laplace transforms, matrices, series solutions and systems of differential equations. Pre/Corequisite(s): None</p>				<p>This course is designed to explore the principles and practices of health and safety in the industrial environment. Topics covered include regulations of the Environmental Protection Agency (EPA), Occupational Safety and Health Act (OSHA and MNOSHA), legal considerations, current legislation, product safety, hazard materials, infection control and employee protection. Pre/Corequisite(s): None</p>			
MCDD 1102	Mech Engineering Drawing I	3	1/2/0	METC 2208	Basic Elec/Electronics	3	2/1/0
<p>The objective of this course is to develop the student's use and knowledge of machine drafting, lettering, line identity and application, orthographic projection, dimensioning practices, section and auxiliary drawings. Pre/Corequisite(s): None</p>				<p>This course surveys the fundamentals of electricity and electronics including electrical/electronic components, AC/DC circuits, electronic devices and applications, basic electronic circuits, and electronic communication and data systems. Pre/Corequisite(s): None</p>			
MCDD 1106	Mech Engineering Drawing II	4	0/4/0	METC 2222	Fluid Power Systems	3	2/1/0
<p>The objective of this course is to develop the student's use and knowledge of pictorial drawings, sheet metal, pattern layout and welding drawing. Mechanical fasteners will be identified. Pre/Corequisite(s): MCDD1102</p>				<p>This course teaches fundamental skills in hydraulic and pneumatic systems. Participants will perform hands-on experiments wherein they construct circuits that teach the operation of components and circuits as used in real-world applications. At the completion of this course, participants will be able to install, start up and operate basic systems. Pre/Corequisite(s): CPTR1104 and MATH0090</p>			
MCDD 1114	Manufacturing Process	2	2/0/0	METC 2254	Quality Measurement and Controls	3	3/0/0
<p>The objective of this course is to develop the student's understanding of material processing, casting, molding, forming, separating operations, assembling, finishing and automation. Pre/Corequisite(s): None</p>				<p>This course focuses on the production and improvement of making quality products and producing quality services. Participants will discuss the philosophy of a quality organization and methods to create a culture of quality. Participants will also be introduced to the planning and implementation of this organizational methodology utilizing best practices to secure the commitment of employees at all levels. Quality tools covered are value stream map, standard work, visual controls and A-3. Course includes discussions about both qualitative and quantitative points of view. Pre/Corequisite(s): MATH0052 and METC1112</p>			
MCDD 1120	Drafting Practices	2	2/0/0	MKTG 1106	Professional Selling	3	3/0/0
<p>The objective of this course is to develop the student's knowledge of engineering change orders, engineering communications, attitudes, workforce diversity and finances. Pre/Corequisite(s): None</p>				<p>This course covers a fundamental sales approach that can be used as a foundation for future sales courses. The content covers steps used to plan a sales presentation and methods of determining and filling prospect needs or wants. Pre/Corequisite(s): None</p>			
MCDD 1124	Mechanical Drafting Applications I	3	1/2/0	MKTG 1110	Customer Service	3	3/0/0
<p>The objective of this course is for the student to develop a set of working drawings of an existing machine project. A genealogy chart, final and sub-assembly drawings, detail drawings, parts lists and part numbering system will be completed. Pre/Corequisite(s): CADD1102 and MCDD1102</p>				<p>Customer service can determine both a company's and an employee's success or failure. This course covers the skills necessary for an individual to build and maintain customer loyalty. Strategies needed to sustain a positive work environment will be identified. Evaluating and improving customer service systems, from traditional customer satisfaction measurement tools to technology-based customer relationship management systems (CRM), will be explored. Pre/Corequisite(s): None</p>			
MCDD 2204	Mech Engineering Drawing III	4	1/3/0	MKTG 1116	Advertising and Promotion	3	3/0/0
<p>The objective of this course is to explore advanced applications of various industry drawing methods. The student will be introduced to and will construct drawings related to multiple drafting and engineering disciplines. Pre/Corequisite(s): MCDD1106</p>				<p>This course focuses on the role of promotion within the marketing plan of an organization. Students will study advertising trends that influence an organization's promotional strategy. Emphasis will be placed on current advertising media, costs, budgeting, ad development and evaluation. This course will have an active learning environment. Students will create and present a promotional campaign. Pre/Corequisite(s): None</p>			
MCDD 2246	Tool Design	3	1/2/0	MKTG 1120	Supervisory Leadership	3	3/0/0
<p>The objective of this course is to develop an understand of jigs, fixtures, dies and their function in mass production, starting at the basic levels of component pieces through to design and implementation. Pre/Corequisite(s): CADD1114 and MCDD1106</p>				<p>The methods and techniques of leadership and supervision and their applications are emphasized in this course. The content covers such topics as delegation, motivation, training, orienting, evaluating and effectively increasing productivity. Pre/Corequisite(s): None</p>			
MCDD 2248	CNC Application	3	1/2/0				
<p>The objective of this course is to develop the student's knowledge of computer numerical control components and basic programming codes. Pre/Corequisite(s): CADD1114 and MCDD1106</p>							
MCDD 2252	Mechanical Drafting Applications II	4	1/3/0				
<p>The objective of this course is to develop the student's knowledge of the processes involved in design development and scheduling. Gearing, shafts, chains, belts and bearings, along with part, sub-assembly and assembly representations, are applied to the student's capstone project. Pre/Corequisite(s): CADD2214 and MCDD2122</p>							
MCDD 2260	Mechanical Drafting Internship	3	0/0/3				
<p>The objective of this course is to develop and apply the student's drafting skills in his or her desired career field. Projects and discussions are coordinated to relate to the student's employment situation in an approved drafting occupation. Training verification and evaluation are required of each student. A maximum of three internship credits will apply toward graduation. Pre/Corequisite(s): CADD2214</p>							

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MKTG 1128	Business Insights	1	0/1/0		structure, business-to-business buying behavior, and understanding and influencing multiple decision makers. Pre/Corequisite(s): MKTG1106 and MKTG2204		
	Examination of the marketing industry from manufacturing to the final product is covered in this course. Students analyze the impact of current trends, the economy and technology in the marketplace. Pre/Corequisite(s): None			MKTG 2290	Supervised Occup Exp I	3	0/0/3
MKTG 1130	Leadership Ethics	3	3/0/0		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. Pre/Corequisite(s): None		
	This course is designed to help the individual determine what constitutes ethical issues and to gain insight into how to cope with conflicts between your personal values and those of the organization in which you work. Pre/Corequisite(s): None			MKTG 2292	Supervised Occup Exp II	3	0/0/3
MKTG 1138	Leadership Development I	1	0/1/0		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. Pre/Corequisite(s): None		
	This course encourages the personal and professional growth of the student. Emphasis is placed on the development of skills in decision making, problem solving, communications, professionalism and leadership. Pre/Corequisite(s): None			MKTG 2298	Small Business Plan Development	2	1/1/0
MKTG 1140	Leadership Development II	1	0/1/0		This course covers the steps in preparing a business plan. Each student creates a business plan based on a personal business selection. Pre/Corequisite(s): None		
	This course covers the personal and professional growth of the student. Emphasis is placed on the usage of skills in decision making, problem solving, communications and leadership. Pre/Corequisite(s): None			MKTG 2400	Marketing Management	4	3/1/0
MKTG 2204	Advanced Professional Selling	3	2/1/0		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. Pre/Corequisite(s): BUS2206		
	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. Pre/Corequisite(s): MKTG1106			MKTG 2404	Management Strategy	3	3/0/0
MKTG 2206	Sales Management	3	2/1/0		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. Pre/Corequisite(s): ACCT1012 and MKTG1100 and MKTG2200 or ACCT2211 and MKTG1100 and MKTG2200 or ACCT1012 and BUS2204 and BUS2206 or ACCT2211 and BUS2204 and MKTG1100 or ACCT2211 and BUS2206 and MKTG2200 or ACCT2211 and BUS2204 and BUS2206		
	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. Pre/Corequisite(s): MKTG1106			MRNT 1104	Drive System Theory	3	3/0/0
MKTG 2212	Retail Management	3	3/0/0		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. Pre/Corequisite(s): None		
	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. Pre/Corequisite(s): ACCT1012 or ACCT2211			MRNT 1105	Introduction to Marine	2	1/1/0
MKTG 2214	E-Marketing	3	3/0/0		This course covers information on laws governing the use of public waterways as 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. Pre/Corequisite(s): None		
	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. Pre/Corequisite(s): MKTG1100 or MKTG2206			MRNT 1106	Drive System Service	3	0/3/0
MKTG 2222	Human Resource Mgmt	3	3/0/0		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. Pre/Corequisite(s): None		
	The purpose of this course is to acquaint the student with the importance of human resource management in contributing to the achievement of an organization's objectives. The content addresses techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. Pre/Corequisite(s): None			MRNT 1114	Introduction to Boat Rigging	2	1/1/0
MKTG 2230	Marketing Research	3	2/1/0		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. Pre/Corequisite(s): None		
	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. Pre/Corequisite(s): None			MRNT 1120	Marine Starting and Charging Systems	3	2/1/0
MKTG 2234	Computer Marketing Applications	3	2/1/0		This course teaches the service procedures necessary for off-road products (2-cycle/4-cycle) 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. Pre/Corequisite(s): None		
	This course challenges students to produce computer projects using spreadsheets, 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. Pre/Corequisite(s): None			MRNT 2203	Marine Advanced Fuel Systems	4	2/2/0
MKTG 2236	Small Business Mgmt	3	3/0/0		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 70hp in outboard and sterndrive engines. The main focus is on larger carbureted and fuel-injected systems along with fuel distribution and associated parts of those systems. Pre/Corequisite(s): None		
	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. Pre/Corequisite(s): ACCT1012 or ACCT2211						
MKTG 2250	Strategic Selling and Account Management	3	2/1/0				
	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, make sales calls, communicate proposed solutions, overcome objections and close sales. Other elements include understanding organizational						

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MRNT 2207	EFI and Advanced Electrical Systems	4	2/2/0	MUSC 1112	Beginning Class Guitar	1	1/0/0
<p>This course teaches the theory of operation and service of the EFI/DFI (electronic fuel injection/direct fuel injection) systems used on stern drive 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.</p> <p>Pre/Corequisite(s): None</p>				<p>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.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2210	Engine Service	3	1/2/0	MUSC 1113	Beg Class Voice	1	1/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6F. Class instruction in the healthy use of the voice in singing and speaking. 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 a credit.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2212	Performance Testing	1	1/0/0	MUSC 1114	Beginning Class Piano	2	2/0/0
<p>This course will provide instruction in boat performance improvement. Students will study propeller construction and applications. Performance analysis for dynamometer testing and test wheels will be emphasized. Students will conduct performance tests of varied marine products.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6F. Group piano lessons. Designed for students with no piano experience. Includes emphasis on solo and ensemble playing as well as improvisation, technique and theory.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2214	Marine Internship	3	0/0/3	MUSC 1115	America's Musical Heritage	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 6 and 7. A survey course for the general college student, introducing 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 music styles, including jazz, country, R&B, hip hop, rap, salsa, reggae and urban folk styles.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2218	Adv Electrical Diagnosis	3	1/2/0	MUSC 1116	World Music	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 6 and 8. A survey course for the general college student introducing 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 American, African, India, Latin America, Asia and music cultures of Eastern Europe.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2221	Advanced Drive Systems and Testing	4	2/2/0	MUSC 1118	Rock and Pop Music	3	3/0/0
<p>This course teaches the service procedures for advanced technology drive systems used in stern-mounted 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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6. This survey of rock and pop music for all students provides a comprehensive history of pop music in the United States from its origins leading up to Elvis Presley to the Beatles to the current sounds of today. Emphasis is placed on the music itself through analysis and critique and covers all styles of rock and pop music such as pop, R&B, country western, soul, Motown, folk, folk rock, heavy metal, rap and hip hop and beyond.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2222	Transom and Mid-Section Service	4	2/2/0	MUSC 1120	Introduction to Music Technology	3	3/0/0
<p>This course teaches the various methods used to couple the engine to the vertical drive on stern-drive applications. On outboards this course covers the mid-sections. Removal and replacement, failure analysis, measurements, disassembly and assembly procedures are performed.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6. This course introduces the principal topics of music technology: acoustics, computers, MIDI, digital audio, and tools for music production and scoring. Hands-on experience will be used extensively to enhance understanding. This course will serve as a springboard to further study and exploration of hardware and software tools for music creation.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2224	Marine Independent Study Lab	1	0/1/0	MUSC 1121	Basic Theory and Musicianship I	3	3/0/0
<p>This course is designed by the student and the instructor to provide an opportunity for the student to gain proficiency in selected competency areas and integrate the skills, knowledge and concepts gained in previous coursework. The student, with instructor approval, will prepare a Lab Activity Plan consistent with 30 hours of lab time. The plan should reflect the following course goals, student knowledge, prior coursework and student skill level. The student will complete a Daily Activity Lab worksheet that will represent work completed and prepare a Lab Activities Outcomes worksheet to determine student efforts and success at completing the Lab Activity Plan and the course.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2 and 6. Basic approaches to the study of music in the Western notated tradition from the 17th century to the present day. Clarifies the fundamental musical elements of melody, harmony, rhythm and form, with emphasis in the tonic-dominant harmony. Involves analysis and composition. Must be taken concurrently with Musc 1123.</p> <p>Pre/Corequisite(s): None</p>			
MRNT 2231	Engine Performance Rebuild and Diagnostics	5	2/3/0	MUSC 1122	Basic Theory and Musicianship II	3	3/0/0
<p>This course covers the disassembly, inspection of serviceability and the return of the equipment to the manufacturer's specifications or to a higher performance level. Included in this course is the analysis/diagnosis of the reason for failure and the prevention of future like failures. Students are welcome to bring in their own engines for this course.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2 and 6. Basic approaches to the study of music in the Western notated tradition as the organization and interaction of musical elements: melody, harmony, rhythm, form and color, with emphasis in the tonic-dominant harmony. Involves analysis and composition. Must be taken concurrently with Musc 1124.</p> <p>Pre/Corequisite(s): MUSC1121</p>			
MRNT 2238	Marine four-stroke outboard engine service	2	1/1/0	MUSC 1123	Sight Singing & Ear Training I	1	1/0/0
<p>This course focuses on the areas dealing with the tuning, maintenance, diagnosis and adjustment of the four-stroke outboard engine. Training will include multiple brands of four-stroke outboards and their related components. This is an excellent course to build upon for complete understanding of the outboard four-stroke.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6F. 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 1121.</p> <p>Pre/Corequisite(s): None</p>			
MUSC 1111	Fundamentals of Music	3	3/0/0	MUSC 1124	Sight Singing & Ear Training II	1	1/0/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Area 6F. 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 with MUSC 1122.</p> <p>Pre/Corequisite(s): None</p>			
				MUSC 1135	Voice Ensemble	1	1/0/0
				<p>Meets MnTC Goal Area 6F. The voice ensemble is an auditioned choir (from the M State Concert Choir) meeting two hours per week on a regularly scheduled basis. This group will study and prepare music from various musical periods and geographic regions and performs a minimum of one concert each semester. This group also participates in campus life venues as they arise, MCC Fine Arts Festival and occasional area tours. May be repeated for credit.</p> <p>Pre/Corequisite(s): MUSC1141</p>			

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MUSC 1141	Concert Choir	1	1/0/0				
Meets MnTC Goal Area 6F. The M State choir is a non-auditioned group that meets four times per week on a regularly scheduled basis. The group will study and prepare music from various musical periods and geographic regions and performs a minimum of one concert each semester. The group will also participate in campus life venues as they arise, the MCC Fine Arts Festival and occasional area tours.							
Pre/Corequisite(s): None							
MUSC 1145	Chamber Chorale	1	1/0/0				
Meets MnTC Goal Area 6F. The M State Chamber Chorale is an auditioned community chorus that performs one concert of choral/orchestral music each semester. The group meets one evening per week on a regularly scheduled basis. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 1150	History of Jazz	3	3/0/0				
This course meets MnTC Goal Area 6. Through jazz music itself, students will learn about the styles within jazz and the prominent performers from the birth of the blues and ragtime through jazz-rock fusion to the new age, smooth, acid and hip-hop jazz styles of today. Jazz music is uniquely American in origin, and the effects that society and jazz music have had on each other will be explored.							
Pre/Corequisite(s): None							
MUSC 1151	Ind Voice Lessons	1	1/0/0				
Meets MnTC Goal Area 6F. Individual voice lessons. Students interested in this course should contact the music department so that instruction can be arranged. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 1160	Makings of a Rock Band	3	3/0/0				
Meets MnTC Goal Area 6. 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 song writing, improvisation and performing. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 1162	Jazz Ensemble	1	1/0/0				
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.							
Pre/Corequisite(s): None							
MUSC 1164	Concert Band	1	1/0/0				
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.							
Pre/Corequisite(s): None							
MUSC 1168	Pep Band	1	1/0/0				
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.							
Pre/Corequisite(s): None							
MUSC 1181	Private Instrumental Lessons	1	1/0/0				
Meets MnTC Goal Area 6F. Individual woodwind, brass, percussion, strings and guitar lessons. Subject to instructor availability. Students should contact the music department to arrange instruction. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 1185	Private Music Composition Lessons	1	1/0/0				
Meets MnTC Goal 6. Individual 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.							
Pre/Corequisite(s): None							
MUSC 1191	Ind Piano Lessons	1	1/0/0				
Meets MnTC Goal Area 6F. Individual piano lessons. Students should contact the music department to arrange instruction. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 2223	Sight Singing & Ear Training III	1	1/0/0				
Meets MnTC Goal Area 6F. 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 2231.							
Pre/Corequisite(s): MUSC1124							
MUSC 2224	Sight Singing & Ear Training IV	1	1/0/0				
Meets MnTC Goal Area 6F. 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 2232.							
MUSC2223 None							
MUSC 2231	Advanced Theory and Musicianship III	3	3/0/0				
Meets MnTC Goal Areas 2 and 6. 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. Comparisons of music from various stylistic periods. Beginning studies in counterpoint.							
Pre/Corequisite(s): MUSC1122 and MUSC1124							
MUSC 2232	Advanced Theory and Musicianship IV	3	3/0/0				
Meets MnTC Goal Areas 2 and 6. 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. Comparisons of music from various stylistic periods. Beginning studies in counterpoint.							
Pre/Corequisite(s): MUSC2231							
MUSC 2251	Individual Voice Lessons	2	2/0/0				
Meets MnTC Goal Area 6F. Individual voice lessons of one hour per week. Open to advanced students with instructor's consent. Required of voice performance or voice pedagogy majors. Includes required performances. Students interested in this course should contact the music department so that instruction may be arranged. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 2281	Private Instrumental Lessons	2	2/0/0				
Meets MnTC Goal area 2 and 6. Individual woodwind, brass, percussion and guitar lessons of one hour per week. Open to advanced students with instructor's consent. Required of instrumental performance or education majors. Includes required performances. Students should contact music department to arrange instruction. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
MUSC 2285	Advanced Music Composition	2	2/0/0				
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.							
Pre/Corequisite(s): MUSC1185							
MUSC 2291	Individual Piano Lessons	2	2/0/0				
Meets MnTC Goal Area 6F. Individual piano lessons of one hour per week. Open to advanced students with instructor's consent. Required of piano performance or piano pedagogy majors. Includes additional studio classes and required performances at the instructor's discretion. Interested students should contact the music department to arrange instruction. Additional fee. May be repeated for credit.							
Pre/Corequisite(s): None							
NANO 1101	Fundamentals of Nanoscience I	3	3/0/0				
Fundamentals of Nanoscience I is the first course in a two-semester sequence designed to expose students to the rapidly emerging fields of nanoscience and nanotechnology. This course emphasizes the scientific basis for the behavior of nanomaterials, the potential uses of nanomaterials in products manufactured by various industries and methods used to fabricate and characterize nanomaterials.							
Pre/Corequisite(s): None							
NANO 1102	Fundamentals of Nanoscience II	3	3/0/0				
Fundamentals of Nanoscience II is the second course in a two-semester sequence designed to expose students to the rapidly emerging fields of nanoscience and nanotechnology. This course addresses fundamental characterization and analysis techniques utilized to study nanomaterials and specific examples and applications of nanomaterials in the various industry areas.							
Pre/Corequisite(s): NANO1101							
NANO 1197	Industry Internship Experience I	1	0/0/1				
Industry Internship Experience I is a one-credit blended (land-based and online) internship experience designed to acquaint students with research and industrial production environments. Students will explore regional nano-related industries and identify nano-related products currently being manufactured.							
Pre/Corequisite(s): None							
NANO 2207	Nanobiotechnology and Nanobiomedicine	3	2/1/0				
Nanobiotechnology and nanobiomedicine is intended to expose students to the applications of nanotechnology in the biotechnology and biomedical areas of industry, research and development. This second-year nanoscience course emphasizes technologies utilized in the fabrication and production of nanomaterials, their applications in biotechnology and biomedicine, future trends, and the societal, ethical and environmental implications of these technologies.							
Pre/Corequisite(s): BIOL1111 and NANO1102 or BIOL1111 and BIOL1115							
NANO 2208	Nanomaterials and Coatings	3	2/1/0				
Nanomaterials and Coatings is a second-year nanoscience course intended to expose students to the fundamentals of nanomaterials and coatings. The course emphasizes both organic and inorganic films and focuses on their properties, fabrication and characterization. Students will gain insight into the advantages of nanomaterials over bulk materials and how various industries are leveraging these properties. As nanotechnology is a diverse field, examples will range from everyday applications to futuristic concepts.							
Pre/Corequisite(s): NANO1101 and NANO1102							
NANO 2209	Thin Film Technology	3	2/1/0				
Thin Film Technology is a second-year nanoscience course designed to acquaint students with common thin-film processing and analysis techniques utilizing vacuum-based systems. This course will cover vacuum fundamentals and provide insight at the atomic level, where thin film technology truly resides.							
Pre/Corequisite(s): NANO1101 and NANO1102							

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NANO 2210	Semiconductor Fabrication	3	2/1/0	NURS 2426	Reproductive Disorders	2	2/0/0
Semiconductor Fabrication is a second-year nanoscience course that focuses on the terminology, concepts, processes, products and equipment commonly used in the manufacture of ultra-large-scale integrated (ULSI) semiconductors. This course meets for two hours of lecture and two hours of laboratory each week. Pre/Corequisite(s): NANO1101 and NANO1102				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. Pre/Corequisite(s): NURS1400 and NURS1406 and NURS1415 and NURS1416 and NURS1426 or NURS2410			
NANO 2211	Manufacturing Quality Assurance	3	2/1/0	NURS 2437	Nursing Clinical II	4	0/4/0
Manufacturing Quality Assurance is a capstone course intended to link the analysis and characterization methods covered in previous courses with the automated manufacturing of a specified product. A semi-automated manufacturing process will be used as the focus on which students will apply analysis and characterization methods. From statistically analyzed data generated by the characterization methods, students will modify the manufacturing process to attain specific performance parameters in the product. This course will deal with instrument calibration, reliability, statistical process control (SPC), statistical quality control (SQC), trouble shooting and problem solving as it applies to the manufacturing process. Pre/Corequisite(s): NANO2209 and NANO2210				The focus of this clinical course is for the student to assess, plan, implement and evaluate care for one to two patients/clients. Pre/Corequisite(s): NURS2410 or NURS1404 and NURS1415 and NURS1416 and NURS1426 or NURS1400 and NURS1415 and NURS1416 and NURS1424 or NURS1406 and NURS1415 and NURS1416 and NURS1424 or NURS1406 and NURS1415 and NURS1416 and NURS1426			
NANO 2212	Surface and Thin Film Analysis Techniques	3	2/1/0	NURS 2438	Restorative Nursing I	4	4/0/0
Surface and Thin Film Analysis Techniques will acquaint students with common analysis methods used in nano-processing. This course is designed to establish an understanding of the theory behind, applications of, and procedures utilized in the characterization of surfaces and thin films. In addition, students will gain proficiency in the proper use and care of equipment, as well as methods utilized in the recording, analysis and reporting of data. Pre/Corequisite(s): NANO2211				This course is designed to prepare students to plan care to meet basic human needs to assist patients/clients across the lifespan as they adapt to neurological, sensory, musculoskeletal, gastrointestinal, metabolic and immunological dysfunction. Pre/Corequisite(s): NURS2410 or NURS1400 and NURS1406 and NURS1415 and NURS1416 and NURS1424 or NURS1400 and NURS1404 and NURS1415 and NURS1416 and NURS1424 or NURS1400 and NURS1404 and NURS1415 and NURS1416 and NURS1426 or NURS1400 and NURS1406 and NURS1415 and NURS1416 and NURS1426			
NANO 2231	Industry Internship Experience II	2	0/0/2	NURS 2447	Nursing Clinical III	4	0/4/0
Industry Internship Experience II is a two-credit course designed to build upon the first internship experience (NANO1197) and further raise the level of exposure to highly sensitive equipment in the nanoscience industry. Students will gain practical experience utilizing established skill sets and develop new skill sets unique to each industry. In addition, this course will include professional development components such as resume building, efolios and interviewing skills. Pre/Corequisite(s): NANO1197				The focus of this course is for the student to assess, plan, implement and evaluate care for groups of patients/clients, to act as a manager of care for a team of patients/clients, to delegate nursing actions and to supervise nursing personnel. Pre/Corequisite(s): NURS2437 or NURS2426			
NURS 1400	Introduction to Professional Nursing	2	2/0/0	NURS 2448	Restorative Nursing II	3	3/0/0
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. Pre/Corequisite(s): CSCI1101 and MATH0090 or CPTR1100 and MATH0090 or CPTR1104 and MATH0090				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 integumentary, urinary, cardiac, hematologic and respiratory systems, as well as fluid/electrolyte abnormalities. Pre/Corequisite(s): NURS1400 and NURS1406 and NURS1414 and NURS1415 and NURS1426 and NURS2426 and NURS2435 and NURS2437 and NURS2438 and NURS2464			
NURS 1406	Nursing Fundamentals I	3	2/1/0	NURS 2455	Advanced Intravenous Therapy	1	0/1/0
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 content and skills necessary to promote and maintain health and wellness of the neurological, integumentary, sensory and musculoskeletal systems. Pre/Corequisite(s): CSCI1101 and MATH0090 or CPTR1100 and MATH0090 or HLTH1115				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. Pre/Corequisite(s): NURS1415 and NURS2445 or NURS2410			
NURS 1416	Nursing Fundamentals II	4	2/2/0	NURS 2464	Nursing Leadership	1	1/0/0
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. Pre/Corequisite(s): NURS1400 and NURS1406				This course is designed to prepare students for their role as nurse leaders. 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. Pre/Corequisite(s): None			
NURS 1426	Reproductive Health	2	2/0/0	NURS 2466	Mental Health Nursing	2	2/0/0
This course introduces the student to antepartal, intrapartal and postpartal nursing care for mother and infant. Holistic care and wellness promotion is emphasized. Student will plan nursing care for diverse clients across the lifespan to maintain and promote reproductive wellness to include normal sexuality, fertility and family planning. Student will plan nursing care to maintain and promote wellness for pediatric patients, to include normal growth and development. Pre/Corequisite(s): NURS1400 and NURS1406				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. Pre/Corequisite(s): None			
NURS 2120	Professional Nursing Pharmacology	2	2/0/0	PARA 1101	Introduction to Paralegal	3	3/0/0
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. Pre/Corequisite(s): BIOL2232 and NURS1406 or NURS2410				This course provides an overview of the paralegal profession, the legal office and the legal system. Pre/Corequisite(s): None			
NURS 2410	Role Transition	2	2/0/0	PARA 1102	Research & Writing I	3	3/0/0
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. Pre/Corequisite(s): MATH0090				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. Pre/Corequisite(s): ENGL1101 or ENGL0095			
				PARA 1104	Civil Law for Paralegals	3	3/0/0
				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. Pre/Corequisite(s): None			
				PARA 1105	Criminal Law for Paralegals	3	3/0/0
				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. Pre/Corequisite(s): None			
				PARA 1106	Wills, Trusts & Probate	3	3/0/0
				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. Pre/Corequisite(s): None			

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PARA 1110	Torts for Paralegal	3	3/0/0	PE 1199	Vars Softball	1	0/1/0
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. Pre/Corequisite(s): None				The 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 environment. May be repeated for credit once. Pre/Corequisite(s): None			
PARA 1112	Legal Ethics for the Paralegal	3	3/0/0	PE 2240	Athletic Injury, Care & Prevention	2	2/0/0
This course covers the attorney-client privilege as it relates to paralegals, unauthorized practice of law, regulation of paralegals, ethical codes and rules. Pre/Corequisite(s): None				This course is offered to coaches interested in sports medicine and students interested in coaching and/or athletic training. It is designed to enhance the student's knowledge and performance in sports medicine. The course will cover athletic injury prevention measures, injury care and management, basic injury assessment, nutrition and specific athletic injuries and related problems. Pre/Corequisite(s): None			
PARA 2202	Research & Writing II	3	3/0/0	PE 2241	Principles of Coaching	3	3/0/0
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. Pre/Corequisite(s): PARA1102				This course is designed to introduce students to athletic coaching philosophies, basic coaching concepts in team and individual sports and theories involved in coaching. Emphasis will be on legal issues surrounding coaching, developing coaching philosophies, exploring diversity in coaching, and rules and regulations associated with coaching at different levels. Pre/Corequisite(s): None			
PARA 2204	Real Property	3	3/0/0	PE 2254	Sports in Society	3	3/0/0
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. Pre/Corequisite(s): None				A discussion of the impact sports has in society and the values we place on sports. The course will explore the values, virtues, consequences, rights and responsibilities of sports in our culture. The course is designed to improve the understanding of legal, racial, academic and moral issues of sports and athletics. Pre/Corequisite(s): None			
PARA 2210	Advanced Paralegal Practices	3	3/0/0	PE 2255	Aquatic Outdoor Recreation	2	1/1/0
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. Pre/Corequisite(s): None				A course in which 4-6 days are spent on a wilderness field trip. Major topics covered are camping and camping equipment, camp food and nutrition, canoeing, fishing, nature study and woodlore, safety, map and compass and outdoor philosophy. Pre/Corequisite(s): None			
PARA 2212	Family Law	3	3/0/0	PHIL 1130	Critical Thinking	3	3/0/0
This course will explore and research family law concepts of marriage, divorce, annulment, child custody, property settlements and adoption. Pre/Corequisite(s): None				Meets MnTC Goal Area 2. This course focuses on studying the structure of argument, the detection of common argument fallacies, the creation of cogent arguments and the acquisition of skills needed to translate clearly constructed arguments into argumentative 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. Pre/Corequisite(s): None			
PE 1109	Wellness Skills	2	1/1/0	PHIL 1201	Ethics	3	3/0/0
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. Pre/Corequisite(s): None				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 ethically 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. Pre/Corequisite(s): None			
PE 1130	Beg Golf	1	0/1/0	PHIL 1211	Intro to Philosophy	3	3/0/0
The fundamentals of golf necessary to play at the beginning recreational level. Includes discussion of rules, etiquette, equipment and terminology. Classroom and golf course experience. Additional fee assessed. Pre/Corequisite(s): None				Meets MnTC Goal Areas 2 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? Pre/Corequisite(s): None			
PE 1141	Intro Strength Training	1	0/1/0	PHIL 2220	Environmental Ethics	3	3/0/0
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. An additional workout day per week is also required. Pre/Corequisite(s): None				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 environment. 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? Pre/Corequisite(s): None			
PE 1190	Vars Football	1	0/1/0	PHIL 2224	Philosophy of Religion	3	3/0/0
The 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 environment. May be repeated once for credit. Pre/Corequisite(s): None				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. Pre/Corequisite(s): None			
PE 1192	Vars Basketball	1	0/1/0	PHIL 2225	Bioethics	3	3/0/0
The 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 environment. May be repeated once for credit. Pre/Corequisite(s): None				Meets MnTC Goal Areas 2 and 9. In this course we will explore 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. Pre/Corequisite(s): None			
PE 1193	Vars Baseball	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 intercollegiate baseball setting. May be repeated once for credit. Pre/Corequisite(s): None							
PE 1194	Vars Golf	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 environment. May be repeated once for credit. Pre/Corequisite(s): None							
PE 1197	Vars Volleyball	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 intercollegiate volleyball setting. May be repeated once for credit. Pre/Corequisite(s): None							

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
PHIL 2230	Existentialism	3	3/0/0				
<p>Meets MnTC Goal Areas 2 and 6. This course provides an introduction to existential philosophy, explorations of key existentialist ideas and discussions of how existential thought might be applied to such themes as freedom, existence, despair, authenticity, alienation and death. Existentialism, as the name implies, emphasizes existence (that one is) over essence (what one is). The most famous definition of existentialism was articulated by Jean-Paul Sartre, who called it the theory that existence precedes essence. In other words, you are what you make yourself to be - you create your essence as you go along. The course will look at influential existentialists from Kierkegaard to Sartre and Camus. Pre/Corequisite(s): None</p>							
PHIL 2235	Symbolic Logic	3	3/0/0				
<p>Meets MnTC Goal Area 4. This course is designed as an introduction to symbolic logic, as well as the nature of language and multiple methodologies for proving arguments. This course will focus on formal systems of logic, deductive validity; and will include proofs, methods and translation in sentential and predicate logic. The course will also have an introduction to meta-theory, the extensions of logic and explore inductive logic. Pre/Corequisite(s): None</p>							
PHIL 2240	Non-Western Philosophical Perspectives	3	3/0/0				
<p>Meets MnTC Goal Areas 6 and 8. In this course we will explore the standard introduction to philosophy-type questions (e.g. does God exist; are humans completely physical beings; can we have knowledge; how can we differentiate between right and wrong; do we have free will; etc.) mainly from the standpoint of non-Western thinkers. We will consider how such questions have been pursued and answered in historically non-dominant cultures (i.e. Asian, African, Latin American and indigenous) and compare and contrast our findings with the dominant Western philosophies. As a result of taking this course, students should be better able to place contemporary philosophical issues in a global context as well as be better able to interact with and understand members of a diverse society. Pre/Corequisite(s): None</p>							
PHRM 1001	Fund Concepts of Pharmacy	3	3/0/0				
<p>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. Pre/Corequisite(s): None</p>							
PHRM 2001	Pharmacy Prin / Prac I	4	2/2/0				
<p>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. Pre/Corequisite(s): None</p>							
PHRM 2002	Pharmacy Prin / Prac II	5	2/3/0				
<p>This course covers intravenous drug admixture, TPN compounding, critical care intravenous admixture and unit dose medication dispensing to nursing units. Emphasis is placed upon medication storage and stability, diabetic supplies, and chemotherapy storage and admixture. Pre/Corequisite(s): PHRM1001 and PHRM2001</p>							
PHRM 2004	Drug Properties/Distribution	3	2/1/0				
<p>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. Pre/Corequisite(s): PHRM1001 and PHRM2001</p>							
PHRM 2010	Experiential / Hospital	3	0/0/3				
<p>This supervised instructional experience in the clinical setting introduces the student to tasks performed by the pharmacy technologist. Pre/Corequisite(s): PHRM2002 and PHRM2004</p>							
PHRM 2012	Experiential / Retail	3	0/0/3				
<p>This supervised instructional experience in the clinical setting introduces the student to tasks performed by the pharmacy technologist. Pre/Corequisite(s): PHRM2002 and PHRM2004</p>							
PHYS 1105	Fundamental Concepts in Physics	3	3/0/0				
<p>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. Pre/Corequisite(s): MATH0090 and Math 0090 or assessed into a higher math.</p>							
PHYS 1106	Fund of Physics - Mechanics	3	2/1/0				
<p>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 non-science</p>							
					majors or those who need an introductory-level working knowledge of physics. Pre/Corequisite(s): MATH1020		
PHYS 1120	Introduction to Astronomy	3	3/0/0				
<p>Meets MnTC Goal Area 3. This course includes a description of the universe covering our current understanding of the solar system, lunar and stellar study, interstellar gases and galaxies. It focuses on the development of modern astronomy and its techniques, astronomical coordinates, 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. Pre/Corequisite(s): MATH0090 and Math 0090 or assessed into a higher math.</p>							
PHYS 1401	College Physics I	4	3/1/0				
<p>Meets MnTC goal area 3. This course gives a theoretical and practical introduction to physics, including kinetics 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. Pre/Corequisite(s): MATH1115</p>							
PHYS 1402	College Physics II	4	3/1/0				
<p>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 Physics 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. Pre/Corequisite(s): MATH1115</p>							
PHYS 1411	University Physics I	5	3/2/0				
<p>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 kinetics 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 as well as knowledge of calculus and 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. Pre/Corequisite(s): MATH1134</p>							
PHYS 1412	University Physics II	5	3/2/0				
<p>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 Physics 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. Pre/Corequisite(s): MATH1134</p>							
PLBG 1102	Piping Trades and Job Safety	2	1/1/0				
<p>This course will introduce 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. None None</p>							
PLBG 1104	Building Sewers and Drainage Systems	3	1/2/0				
<p>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. Pre/Corequisite(s): None</p>							
PLBG 1106	Piping Grades, Elevations and Calculations	3	2/1/0				
<p>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. Pre/Corequisite(s): None</p>							
PLBG 1108	Plumbing/Piping Drawings	2	1/1/0				
<p>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. Pre/Corequisite(s): None</p>							
PLBG 1110	Copper Pipe Procedures	2	1/1/0				
<p>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. Pre/Corequisite(s): None</p>							

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PLBG 1112	Plastic Pipe Procedures	2	1/1/0	PNSG 1214	Nursing Pharmacology	2	2/0/0
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. Pre/Corequisite(s): None				This course develops the student's awareness of basic pharmacological concepts, drug legislation, drug classifications, therapeutic effects, side effects, nursing considerations of medications and dosage calculations. Drug reference utilization is included. Pre/Corequisite(s): None			
PLBG 1114	Steel Pipe Procedures	2	1/1/0	PNSG 1216	Practical Nursing Clinical I	5	0/5/0
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. Pre/Corequisite(s): None				This course is an application of the nursing process, documentation, conceptual and foundational skills along with the role of the practical nurse in a variety of clinical settings with selected clients. The course incorporates health theories as related to the needs of the clients in the role of prevention, promotion and restoration. Pre/Corequisite(s): None			
PLBG 1116	Plumbing Systems	3	2/1/0	PNSG 1217	Health Promotion II	4	2/2/0
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. Pre/Corequisite(s): None				This course develops the student's awareness of health promotion across the lifespan. Musculoskeletal, respiratory, urinary, reproductive and digestive systems will be covered. Pre/Corequisite(s): PNSG1207			
PLBG 1120	Plumbing Installation	3	0/3/0	PNSG 1220	Psychosocial Nursing	3	3/0/0
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. Pre/Corequisite(s): None				This course develops the student's awareness of the role of the practical nurse and the application of theories related to coping and adaptations, stress/crises, therapeutic communications, mental health and illness, grief/loss, death and dying, and individuals with delayed developments throughout the lifespan. Pre/Corequisite(s): PSYC2222			
PLBG 1124	Plumbing Field Internship	3	0/0/3	PNSG 1223	Health Promotion III	4	4/0/0
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. Pre/Corequisite(s): None				This course develops the student's awareness of lifespan health promotion. The systems included are cardiovascular, immune, hematological, neuro/sensory and endocrine. Topics included are cardiovascular/peripheral vascular, immune system/lymph, hematological, neuro/sensory and endocrine. Pre/Corequisite(s): None			
PLBG 1126	Oil Burner Service Work	3	1/2/0	PNSG 1226	Practical Nursing Clinical II	4	0/4/0
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. Pre/Corequisite(s): None				This course is an application of the nursing process, documentation, conceptual and foundational skills within the role of the practical nurse. Experiences will occur in a variety of clinical settings with selected clients with instructor supervision. The course incorporates health theories as related to the needs of the client in the role of prevention, promotion and restoration of health. For reasons of patient safety, knowledge/experience recency and student success, students are required to take this course concurrently with PNSG 1236 Practical Nursing Practicum, regardless of previously successful attempt(s). Pre/Corequisite(s): None			
PLBG 1130	Hydronic Heating	3	1/2/0	PNSG 1232	Principles of Intravenous Therapy	1	0/1/0
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. Pre/Corequisite(s): None				This course builds on basic IV theory and skills. The role of the practical nurse in IV therapy is integrated throughout the course. Pre/Corequisite(s): PNSG1216			
PLBG 1132	Water Treatment/Conditioning	3	2/1/0	PNSG 1234	Nursing Roles	1	1/0/0
In this course the student will learn water softener service, water treatment in boilers, pH balance, testing of sanitary water and gray water hazards. Pre/Corequisite(s): None				This course is an overview of nursing within health care. Topics covered include health care trends, legal aspects, ethical issues, leadership characteristics, the role of the Board of Nursing, reality shock, nursing professionalism and other topics integral to the role of the nurse. Pre/Corequisite(s): None			
PLBG 1134	Advanced Plumbing Blueprints	3	1/2/0	PNSG 1236	Practical Nursing Practicum	2	0/2/0
This course will provide the student with continued studies in blueprint reading. Topics will include specifications, fixture drawings, shop drawings and advanced isometrics. Pre/Corequisite(s): None				This practicum experience provides the opportunity to integrate the knowledge and concepts learned throughout the curriculum. The student will be responsible for caring for multiple clients independently. Demonstration of safe and effective nursing care is required. For reasons of patient safety, knowledge/experience recency and student success, students are required to take PNSG 1226 Practical Nursing Clinical II concurrently, regardless of previously successful attempt(s). Pre/Corequisite(s): None			
PLBG 1136	Basic Plumbing Code	2	2/0/0	PNSG 1240	Transcultural Nursing Care	1	1/0/0
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. Pre/Corequisite(s): None				This course will expose nursing students to global diversity and multicultural populations. It will provide nurses with cultural knowledge and, to assist with therapeutic interventions, communication techniques to promote holistic care. This course will address viewing one's own personal values and prejudices. Pre/Corequisite(s): None			
PLBG 1138	Advanced Plumbing Code	3	3/0/0	PNSG 1200	Concepts of Nursing	2	2/0/0
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. Pre/Corequisite(s): None				Introduces the nursing concepts of the interactive role of the practical nurse within health care. Topics covered include the nursing process, critical thinking, nurse patient interaction, documentation, admission/discharge, professionalism, holism, cultural sensitivity in health care, self care of the nurse, teaching and learning concepts. Pre/Corequisite(s): MATH0090			
PLBG 1140	Plumbing Service Learning Project	3	0/0/3	PNSG 1207	Health Promotion I	5	3/2/0
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. Pre/Corequisite(s): None				This course introduces the foundations of nursing care across the lifespan. It develops the student's awareness of the clients as individuals and their basic needs as well as technical skills necessary for client care. Topics included are safety, data collection/diagnostics, fluid and electrolytes, nutrition, pre- and post-operative care, medication administration, comfort, integumentary and cancer. Pre/Corequisite(s): None			
PNSG 1209	Family Wellness	3	3/0/0	PNSG 1209	Family Wellness	3	3/0/0
This course develops the student's awareness of individual health needs within the family relating to maternal-child health. This course incorporates the role of the practical nurse in community settings. Topics include wellness throughout the lifespan, maternal child health and female reproduction. Pre/Corequisite(s): BIOL2230 and PSYC2222				This course develops the student's awareness of individual health needs within the family relating to maternal-child health. This course incorporates the role of the practical nurse in community settings. Topics include wellness throughout the lifespan, maternal child health and female reproduction. Pre/Corequisite(s): BIOL2230 and PSYC2222			

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PSCI 2206	Global Politics	3	3/0/0	PWST 1304	Snowmobile Clutching	2	1/1/0
<p>This course meets MnTC Goal Areas 5 and 8. 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. Pre/Corequisite(s): None</p>				<p>This course identifies major components of constant variable transmission systems and discusses maintenance, routine adjustment and tuning of variable transmission clutch systems. Pre/Corequisite(s): None</p>			
PSCI 2220	Introduction to Constitutional Theory	3	3/0/0	PWST 1402	Chainsaws	2	1/1/0
<p>Meets MnTC Goal Areas 2, 5 and 9. This course focuses on some of the significant constitutional issues that confront policy makers 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. Pre/Corequisite(s): None</p>				<p>Students will learn various 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. Pre/Corequisite(s): None</p>			
PSCI 2310	Ideas and Ideologies	3	3/0/0	PWST 1404	Generators	2	1/1/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
PSYC 1101	Human Interaction	3	3/0/0	PWST 2302	Advanced Power Equipment	4	2/2/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
PSYC 1200	General Psychology	3	3/0/0	PWST 2304	Motorcycles I	3	1/2/0
<p>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. Pre/Corequisite(s): None</p>				<p>This course focuses on various types of four-cycle motorcycle and ATV engines. Students will learn engine service and maintenance procedures. Students will also learn about motorcycle fuel systems and related components. Pre/Corequisite(s): None</p>			
PSYC 1500	Positive Psychology	3	3/0/0	PWST 2306	Snowmobile Drives and Suspensions	3	1/2/0
<p>Meets MnTC Goal Area 5 and 9. The course includes different aspects of health psychology, humanistic psychology and positive psychology with emphasis on the integration of psychological, biological and physical factors and its 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. Pre/Corequisite(s): None</p>				<p>This course covers suspension operation and components. Student will learn suspension set-up and adjustment techniques and various suspension designs used by manufacturers. Students will perform suspension service on various manufacturers' snowmobiles. Pre/Corequisite(s): None</p>			
PSYC 2224	Social Psychology	3	3/0/0	PWST 2308	Advanced Snowmobiles	3	1/2/0
<p>Meets MnTC Goal Areas 5 and 7. Social Psychology includes theories and research involving individuals' reactions to others and the influence of others on individuals. Topics include social thinking, social influence and social relations. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
PSYC 2226	Behavior and Environmental Management	3	3/0/0	PWST 2310	Motorcycles II	3	2/1/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. Pre/Corequisite(s): None</p>			
PSYC 2228	Cross-Cultural Psychology	3	3/0/0	PWST 2312	Advanced Motorcycle Systems	3	1/2/0
<p>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. Pre/Corequisite(s): None</p>				<p>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. This 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. Pre/Corequisite(s): None</p>			
PSYC 2230	Personality Psychology	3	3/0/0	RADT 1108	Introduction to Radiologic Technology and Patient Care	3	2/1/0
<p>Meets MnTC Goal Area 5. This course examines historical and current theoretical perspectives of personality including psychoanalytic, humanistic, behavioral/social-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. Pre/Corequisite(s): PSYC1200</p>				<p>This course is designed to provide the basic concepts of patient care, including consideration of the physical and psychological needs of the patient and family. Routine and emergency patient care procedures will be described, as well as infection control procedures utilizing standard precautions. Information confidentiality as it relates to medical records and other forms of health information will be presented. The role of the radiographer in patient education will also be identified. Pre/Corequisite(s): None</p>			
PWST 1302	Snowmobile I	5	2/3/0	RADT 1114	Radiographic Procedures I	4	2/2/0
<p>This course covers snowmobile engine designs, component identification and engine service procedures. This course also covers snowmobile fuel systems and service. Pre/Corequisite(s): None</p>				<p>This course will provide the student with the knowledge necessary to perform radiographic procedures relative to the thoracic and abdominal organs (including gastrointestinal studies), upper and lower extremities and pelvic girdle. Emphasis will be on radiographic terms, anatomy, positioning, manipulation of radiographic equipment and accessories, and related patient care considerations. Pre/Corequisite(s): BIOL2232 and RADT1108</p>			
				RADT 1124	Radiographic Procedures II	4	2/2/0
				<p>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. Emphasis will be on radiographic terms, anatomy, positioning, manipulation of radiographic equipment and accessories, and patient care considerations related to radiography of the urinary system, bony thorax, vertebral column, skull and arthrography. Basic techniques in venipuncture, contrast media types, intravenous medication and emergency response will also be included. Pre/Corequisite(s): RADT1114 and RADT1140</p>			

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
RADT 1132	Principles of Radiobiology	4	3/1/0	RADT 2258	Radiographic Clinical V	7	0/0/7
<p>This course is 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. Also presented are the nature and characteristics of radiation (i.e. its effects on molecules, cells, tissues and the body as a whole, x-ray production and the fundamentals of photon interactions with matter. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies, healthcare organizations and the responsibilities of the radiographer for patients, personnel and the public are also incorporated. Factors affecting biological response are presented, including acute and chronic effects of radiation.</p> <p>Pre/Corequisite(s): BIOL2232 and RADT1140</p>				<p>This clinical course emphasizes the development of independence, discretion and judgment while performing basic radiographic procedures. It provides the student with the opportunity to function as a nearly registry eligible radiographer. The student is expected to correlate all clinical and didactic experiences while demonstrating a high degree of proficiency and efficiency.</p> <p>Pre/Corequisite(s): RADT2248</p>			
RADT 1140	Radiographic Imaging	4	2/2/0	RADT 2280	Board Review	2	2/0/0
<p>This course is 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, discussion of problem-solving 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.</p> <p>Pre/Corequisite(s): RADT1108 and PHYS1105 and MATH1114</p>				<p>This course is designed to prepare the student to write the national board exam administered by the American Registry of Radiologic Technologists (ARRT). A review of all course work presented in the program with an emphasis on the ARRT exam specifications will be presented.</p> <p>Pre/Corequisite(s): None</p>			
RADT 1144	Radiographic Procedures III	3	2/1/0	REFR 1102	Refrigeration Principles	3	3/0/0
<p>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 the 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.</p> <p>Pre/Corequisite(s): RADT1124</p>				<p>This course covers the theory and operation and service procedures of the basic refrigeration system including the main components of the system: compressor, condenser, evaporator, metering device and domestic refrigeration. Student will develop troubleshooting techniques using computer and Omnidata refrigerator simulators.</p> <p>Pre/Corequisite(s): None</p>			
RADT 1148	Radiographic Clinical I	6	0/0/6	REFR 1104	Refrigeration Lab	4	0/4/0
<p>The emphasis of this clinical rotation will be on radiographic positioning and manipulation of radiographic equipment and accessories, related to radiography of the thoracic and abdominal viscera, upper and lower extremity, shoulder girdle, pelvis, upper gastrointestinal tract, lower gastrointestinal tract and the biliary system.</p> <p>Pre/Corequisite(s): RADT1108</p>				<p>This course covers working with the tools and equipment of the refrigeration trade. The student receives hands-on experience working with refrigeration tubing, refrigerators, freezers and operation of refrigeration and electrical Omnidata computer-operated simulators.</p> <p>Pre/Corequisite(s): None</p>			
RADT 1158	Radiographic Clinical II	6	0/0/6	REFR 1106	Electrical Fundamentals	3	3/0/0
<p>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.</p> <p>Pre/Corequisite(s): RADT1148</p>				<p>This course covers electrical theory of Ohm's law, inductance, capacitance and electrical design, operation, use and construction of domestic refrigeration and electric motors.</p> <p>Pre/Corequisite(s): None</p>			
RADT 1168	Radiographic Clinical III	6	0/0/6	REFR 1108	Electrical Lab	3	0/3/0
<p>This clinical course emphasizes the basic radiographic procedures and positioning related to the skull, facial bones, paranasal sinuses and detailed areas of the skull. The clinical experience provides an opportunity to working with increased independence.</p> <p>Pre/Corequisite(s): RADT1158</p>				<p>This course covers the hands-on application of electrical theory and practice of Ohm's law, inductance, capacitance, control operation, building of a startbox and troubleshooting domestic refrigeration while using computers and various tools and meters used in the service field.</p> <p>Pre/Corequisite(s): None</p>			
RADT 2222	Imaging Equipment	3	2/1/0	REFR 1110	Refrig, A/C & Htg Prin	3	3/0/0
<p>This course is 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.</p> <p>Pre/Corequisite(s): RADT1132 and RADT1140</p>				<p>This course covers refrigeration theory of domestic refrigeration and introduction theory to commercial refrigeration and residential heating and air conditioning equipment including controls and accessories.</p> <p>Pre/Corequisite(s): REFR1104 and REFR1108</p>			
RADT 2244	Legal and Ethical Issues in Radiologic Technology	3	3/0/0	REFR 1112	Refrig, A/C & Htg Lab	3	0/3/0
<p>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.</p> <p>Pre/Corequisite(s): None</p>				<p>This course covers the operation and service procedures of domestic refrigeration and an introduction to residential heating and air conditioning and commercial refrigeration equipment.</p> <p>Pre/Corequisite(s): None</p>			
RADT 2248	Radiographic Clinical IV	6	0/0/6	REFR 1113	Refrigeration Electrical Circuits Fundamentals	3	3/0/0
<p>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, computerized tomography, ultrasound and magnetic resonance imaging.</p> <p>Pre/Corequisite(s): RADT1168</p>				<p>This course will consist of the design of electrical drawings and troubleshooting of different refrigeration and heating equipment schematics and wiring diagrams.</p> <p>Pre/Corequisite(s): REFR1106 and REFR1108</p>			
RADT 2250	Radiographic Pathology	3	3/0/0	REFR 1115	Refrigeration Electrical Circuits Lab	3	0/3/0
<p>This course is designed to introduce theories of disease causation and the pathophysiologic disorders that compromise healthy systems. Etiology, pathophysiologic responses, clinical manifestations, radiographic appearance and management of alterations in body systems will be presented.</p> <p>Pre/Corequisite(s): BIOL2232</p>				<p>This course will consist of the design of electrical drawings and troubleshooting of different refrigeration and heating equipment and component schematic and wiring diagrams.</p> <p>Pre/Corequisite(s): REFR1106</p>			
				REFR 1130	Refrigeration Mgmt	2	2/0/0
				<p>This course covers refrigerant management techniques approved by EPA Section 608 of the Clean Air Act. We will cover environmental concerns, recovery, recycling and reclamation of different refrigerants. After completion the students will be given the option of taking the EPA Refrigerant Certification Exam.</p> <p>Pre/Corequisite(s): None</p>			
				REFR 1140	Gas Heating	2	1/1/0
				<p>This course covers heating theory of gas furnaces. The student receives basic hands-on service experience with gas-fired furnaces and refining of troubleshooting techniques with gas furnace simulators.</p> <p>Pre/Corequisite(s): REFR1108</p>			
				REFR 2202	Commercial Refrig & A/C Prin	4	4/0/0
				<p>This course covers principles of heat loads, equipment sizing and placement, piping and use of accessories as applied to larger air conditioning and refrigeration systems. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR1110</p>			
				REFR 2204	Commercial Refrig & A/C Lab	3	0/3/0
				<p>This course covers the practical application to gain experience in installation of larger refrigeration and air conditioning equipment. Operation, troubleshooting and repair are included. Safety is emphasized.</p> <p>Pre/Corequisite(s): None</p>			

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REFR 2206	Commercial Electrical Prin	3	3/0/0	SFP 1400	Farm Marketing and Management	3	3/0/0
<p>This course covers fundamentals of commercial refrigeration and air conditioning electrical application to larger systems. Includes operation of switching and controlled devices. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR1106 and REFR1113</p>				<p>This course is an introduction to concepts, strategies and technology for farm planning, economic accounting systems and marketing techniques.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2208	Commercial Electrical Lab	3	0/3/0	SFP 1500	Internship	4	0/0/4
<p>This course covers the practical application of electrical principles to air conditioning and refrigeration systems, including troubleshooting and repairing for larger systems from classroom drawings. Safety is emphasized.</p> <p>Pre/Corequisite(s): None</p>				<p>The Sustainable Food Production internship is supervised employment of students that extends classroom learning to the farm and relates to the students' educational or occupational goals. Students must complete the 26 SFP program credits to enroll.</p> <p>Pre/Corequisite(s): SFP1100 and SFP1200 and SFP1301 and SFP1302 and SFP1303 and SFP1304 and SFP1400 and SOC2222</p>			
REFR 2211	Advanced Refrigeration Principles	4	4/0/0	SOC 1111	Intro to Sociology	3	3/0/0
<p>This course prepares students for more advanced lab sessions on commercial refrigeration systems. Students need to have a very good understanding of commercial refrigeration and electrical systems. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR2202 and REFR2204</p>				<p>Meets MnTC Goal Areas 2, 5 and 7. This course is an introduction to the study of societies and the social factors that influence individual and group behavior. The course incorporates sociological and other critical thinking models for the investigation of various components of social life: culture, socialization, social organization, social stratification, social institutions, populations dynamics and social change.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2212	Adv Refrigeration Lab	3	0/3/0	SOC 1113	Social Problems	3	3/0/0
<p>This course gives students the opportunity to work on more complicated refrigeration systems through individual or paired groups on field trips, off-site meetings and hands-on projects. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR2202 and REFR2204</p>				<p>Meets MnTC Goal Areas 5 and 9. This course stresses acquiring an enriched understanding of social issues and prospects for improving them. Students will investigate social trends and factors affecting social problems, contrast sociological perspectives of social problems, deal constructively with information and ideas associated with social issues, examine the ethical dimensions inherent in problem definition and intervention design, and define personal and public responsibilities in relation to select social issues. Social issues covered may include parenting and family issues; crime, delinquency and violence; aging, health and healthcare issues; poverty and inequality; cultural pluralism; urban growth and population; environmental issues; sexual issues; and global issues.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2213	Advanced Electrical Theory	3	3/0/0	SOC 1114	Sociology Service Learning	1	1/0/0
<p>This course covers the electrical principles and schematics used in industrial, hospital and supermarket refrigeration systems. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR2206 and REFR2208</p>				<p>Meets MnTC goal Area 5. SOC1114 emphasizes an enriched understanding of social issues and prospects for improving them through direct work/research in a sociological setting. In an actual community setting, students will participate in and make observations of social intervention. These observations will be critically processed in relation to key sociological concepts. The nature of service learning usually necessitates that students be prepared to be off-campus and to participate outside of regular class hours (20-25 hours). Students may need transportation to field sites. Additional expenses may be incurred. Course may be repeated for credit.</p> <p>Pre/Corequisite(s): SOC1111 or SOC1113 or SOC2211 or SOC2215 or SOC2216 or SOC2217 or WMST1130</p>			
REFR 2215	Advanced Electrical Applications	3	0/3/0	SOC 2213	Sociology of the Family	3	3/0/0
<p>This course covers the application of electrical principles used in industrial, hospital and supermarket refrigeration systems. Safety is emphasized.</p> <p>Pre/Corequisite(s): REFR2206 and REFR2208</p>				<p>Meets MnTC Goal Areas 5 and 7. Families will be examined from the sociological perspective and will be compared across time and cultures. Family relationships, family structure and the effects of race, class, gender, age, social institutions and social policy will be explored in this course. Integral to this course are comprehensive discussions on topics such as dating, cohabitation, marriage/partnering, employment, domestic violence, parenting, divorce, remarriage/re-partnering and elder care. This course provides understanding of the family, family roles and the impact on the individual. Understanding public and private, platonic and intimate relationships can assist in the development of tolerance toward others.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2216	Refrigeration Internship	3	0/0/3	SOC 2215	Criminology	3	3/0/0
<p>Projects, reports and discussions are coordinated to relate to the student's employment situation. Employment in an approved refrigeration/air conditioning occupation. A training agreement and an evaluation are required of each student.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 2 and 5. The course will provide a thorough overview of the field of criminology: the study of the theories which attempt to define and explain crime, criminal behavior and society's reactions to crime, including a focus on juvenile delinquency, the judiciary process and penology.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2220	HVAC Troubleshooting	3	1/2/0	SOC 2216	Minority Group Relations	3	3/0/0
<p>This course is designed to build student confidence in troubleshooting heating, ventilating, air conditioning systems and motor control circuits. While in the course, the student will learn troubleshooting techniques using simulators, computer-generated simulators and actual air conditioning equipment.</p> <p>Pre/Corequisite(s): REFR1108</p>				<p>Meets MnTC Goal Areas 5 and 7. This course stresses acquiring an enriched understanding of social issues and prospects for improving them. Students will investigate social trends and factors affecting social problems, contrast sociological perspectives of social problems, deal constructively with information and ideas associated with social issues, examine the ethical dimensions inherent in problem definition and intervention design, and define personal and public responsibilities in relation to select social issues.</p> <p>Pre/Corequisite(s): None</p>			
REFR 2242	Heat Load Estimating	2	1/1/0	SOC 2217	Rural Sociology	3	3/0/0
<p>This course covers heat and cooling load estimating for residential and light commercial buildings. Different manufacturer worksheets, the standard manual J and computerized methods of estimating are used.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 5 and 7. The course is a sociological study of the forces which have transformed the rural setting and impact future trends in rural America. The course will also focus on the diverse cultural heritage contributing to the rich cultural mosaic found in rural scenarios.</p> <p>Pre/Corequisite(s): None</p>			
SFP 1100	Principles of Sustainability	3	3/0/0	SOC 2220	Food, Culture and Society	3	3/0/0
<p>Meets MnTC Goal Area 10. This course is a study of sustainability utilizing the principles of permaculture and holistic resource management.</p> <p>Pre/Corequisite(s): None</p>				<p>Meets MnTC Goal Areas 5 and 7. Examines the social and cultural dimensions of the production, preparation and consumption of food. Discussion of a wide variety of topics including food citizenry, sustainable food production, agroecology, hunger, food sovereignty, food choice and options, policy and legislation, social justice, and the interplay between food and gender, social class, race and ethnicity.</p> <p>Pre/Corequisite(s): None</p>			
SFP 1200	Farm Ecology	3	3/0/0				
<p>This course will provide an analysis of natural ecosystem sustainability relative to farms and food production. Nutrient cycling, energy flows, biodiversity and population control will be covered.</p> <p>Pre/Corequisite(s): None</p>							
SFP 1300	Artisan Food and Value - Added Agriculture	4	4/0/0				
<p>This course introduces students to a variety of artisan food crafts and the evolving trend of gastropreneurism. Students will investigate a variety of value-added agricultural enterprises.</p> <p>Pre/Corequisite(s): None</p>							
SFP 1302	Forage and Crop Systems	5	5/0/0				
<p>This course introduces students to sustainable soil fertility management practices and strategies such as cover cropping, crop rotation, conservation tillage and cultivation, compost production and use, and animal stacking. The course will also cover the foundations of plant science and forage plant identification.</p> <p>Pre/Corequisite(s): None</p>							
SFP 1303	Grass-based Livestock Systems	4	4/0/0				
<p>This course presents the foundations of animal science and the principles of grazing for multi-species animal systems.</p> <p>Pre/Corequisite(s): None</p>							
SFP 1304	Practical Farm Skills	2	2/0/0				
<p>This course prepares students for the evaluation and practice of safe tractor and agricultural equipment operation. The proper techniques for the maintenance of agricultural equipment will be discussed. Students will learn livestock husbandry, including fencing and animal handling.</p> <p>Pre/Corequisite(s): None</p>							

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SOC 2222	Sociology of Agriculture	3	3/0/0				
Meets MnTC Goal Area 5. The central theme of this course is to understand the institutions and processes critical to farm success. Students will utilize sociological perspectives to study the many aspects of a local food system.							
Pre/Corequisite(s): None							
SPAN 1111	Beginning Spanish	4	4/0/0				
This course provides basic instruction in the correct form and use of the Spanish language. Study concentrates on oral and written comprehension of simple Spanish, verbal expression of personal themes, pronunciation and grammar.							
Pre/Corequisite(s): None							
SPAN 1112	Beginning Spanish II	4	4/0/0				
This course provides continued basic instruction in the correct form and use of the Spanish language. Study concentrates on oral and written comprehension of simple Spanish, verbal expression of personal and extended themes, pronunciation and grammar.							
Pre/Corequisite(s): SPAN1111							
SW 2250	Intro to Social Work/Social Welfare	3	3/0/0				
This course introduces students to American social welfare institutions, the historical and philosophical bases of social welfare services and current social issues and problems. Programs and agencies developed to deal with these issues will be examined. Students will be introduced to social work theories and intervention methods used by social workers. Career paths in social work will be identified. Meets three hours per week.							
Pre/Corequisite(s): None							
THPY 1110	Massage Techniques and Ethics	3	2/1/0				
This course provides students with an in-depth knowledge of massage techniques. Emphasis will be on the application of the basic massage strokes and their variations. Students will learn proper draping and positioning techniques and recommended client protocol. In regards to ethics, a variety of topics will be discussed and explored in order to help the students form their own written code of ethics.							
Pre/Corequisite(s): None							
THPY 1118	Kinesiology	3	2/1/0				
This course teaches students to identify the location and movements of skeletal muscles. Students will identify bones and boney 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.							
Pre/Corequisite(s): None							
THPY 1123	Integrative Massage	2	1/1/0				
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.							
Prequisite(s): None							
THPY 1130	Advanced Massage	2	1/1/0				
This course prepares massage students to execute advance massage techniques. Students will learn optional techniques available to clients including abdominal massage, facial massage and massage of the gluteals. Massage for special populations will be discussed, including massage for the elderly and chair massage.							
Prequisite(s): THPY1110							
THPY 1135	Deep Tissue Massage	2	1/1/0				
This course prepares the massage student to apply deep muscular therapy techniques. Emphasis will be placed on the use of proper body mechanics and the use of proper techniques to deliver deep tissue massage safely. Trigger point therapy will be used extensively in this course. Students will learn the use of massage tools. Individual muscles will be isolated and massaged with parallel and cross fiber techniques.							
Prequisite(s): THPY1110							
THPY 1142	Student Clinic	3	0/3/0				
This course provides students with an opportunity to develop the practical skills necessary to administer professional massage therapy treatments. In addition to performing massage treatments on the general public, students will also perform seated chair massage at scheduled on-site events as arranged by the instructor. This course provides students with an opportunity to develop the practical learned skills needed to work as a professional massage therapist.							
Prequisite(s): THPY1110							
THPY 1146	Certification Preparation	2	2/0/0				
This course is designated to prepare the students to take the National Certification Examination (NEC) issued by the National Certification Board of Therapeutic Massage & Bodywork (NCBTMB). Students will review anatomy, physiology, kinesiology, clinical pathology, massage theory, massage assessment and practice, adjunct techniques and business practices. Students will be taught to identify the areas where they need the most review and use outside texts to help them maximize their learning potential. A study guide and sample test questions will be used to exemplify the National Certification Examination. Students will be encouraged to apply to take the National Certification Examination after they receive their diploma.							
Prequisite(s): THPY1110							
THPY 1148	Sports Massage and Hydrotherapy	2	1/1/0				
This course covers the fundamentals of hydrotherapy and sports massage. Students will be taught to perform massage treatments specific to individual sports. The course							
addresses pre-, post- and event-sports massage techniques, as well as rehabilitative massage for injuries and maintenance massage. Students will also be instructed on the use of hydrotherapy techniques. Hydrotherapy will address the application of water as treatment in each of its three forms, hot and cold treatments, hydrocollators, body wraps and salt glows. These green techniques can be implemented into Swedish massage treatments and sports massage.							
Prequisite(s): None							
THPY 1150	Business Development	2	2/0/0				
This class will introduce the massage therapist to the business aspects of operating a massage practice. Topics include client scheduling, budgeting, bookkeeping, marketing and massage-related business issues. The course will detail client/therapist business concerns and help prepare students to identify and solve these concerns in a professional manner. Students will learn to write and execute a detailed workable massage business plan.							
Prequisite(s): None							
THPY 1156	Massage Pathophysiology	3	3/0/0				
This course discusses common pathologies that massage therapists are likely to encounter in their professional practices. It also discusses whether these conditions are indicated or contraindicated for massage and describes how they may be treated.							
Prequisite(s): None							
THTR 1100	Introduction to Theatre	3	3/0/0				
Meets MnTC Goal Area 6. This course introduces students to the artistic, historical, cultural, and social significance of theatre; the process of producing live theatre; the examination of major developments and theatre personnel. Participation in class projects, production attendance and production work hours may be required.							
Prequisite(s): None							
THTR 1105	Acting I	3	3/0/0				
This course meets MnTC Goal Area 6. This course is intended to introduce students to basic acting skills and techniques through the use of games, exercises and improvisations, and in-class performances.							
Prequisite(s): None							
THTR 1120	Theatre Performance Practicum	2	0/2/0				
Meets MnTC Goal Area 6F. This course is intended for students who participate as performers in a main stage or approved theatrical production. May be repeated twice.							
Prequisite(s): None							
THTR 1125	Theatre Technical Practicum	2	0/2/0				
Meets MnTC Goal Area 6F. This course is intended for students who participate as a construction or run crew member on a main stage or approved theatrical production. May be repeated twice.							
Prequisite(s): None							
TRNS 1001	Fuel Systems I	3	2/1/0				
This course covers the basics in many types of fuel systems used on current 2- and 4-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. This is great course to learn the basics of fuel systems.							
Pre/Corequisite(s): None							
TRNS 1100	Introduction to Shop Technology	4	3/1/0				
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 2-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.							
Prequisite(s): None							
TRNS 1102	Introduction to Transportation	2	1/1/0				
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.							
Prequisite(s): None							
TRNS 1104	Transportation Electronics	3	2/1/0				
This course prepares the student for the electronics-related courses that follow. The theory and operation of electricity and test instruments will be studied.							
Prequisite(s): None							
TRNS 1112	Heating Ventilation A/C	3	1/2/0				
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.							
Prequisite(s): DSET1100 or TRNS1102							
TRNS 1118	Welding I	3	1/2/0				
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.							
Prequisite(s): None							

Course #	CourseTitle	CR	Lec/Lab/OJT	Course #	CourseTitle	CR	Lec/Lab/OJT
TRNS 1120	Welding II	1	0/1/0				
<p>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. Prerequisite(s): TRNS1118</p>							
TRNS 1125	Starting and Charging Theory	2	2/0/0				
<p>This course covers the service and repair of starting and charging systems for off-road products, both 2- and 4-stroke. Prerequisite(s): TRNS1126</p>							
TRNS 1126	Starting and Charging Lab	1	0/1/0				
<p>This course covers the hands-on testing of starting and charging systems and their components. Prerequisite(s): TRNS1125</p>							
TRNS 2108	Power Hydraulics	2	1/1/0				
<p>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. Prerequisite(s): None</p>							
WINE 1100	Introduction to Wine	3	3/0/0				
<p>Introduction to Wine 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 enrolling must be at least 21 years of age and have a photo ID as proof of age before enrolling. Prerequisite(s): None</p>							
WMST 1130	Introduction to Women's Studies	3	3/0/0				
<p>Meets MnTC Goal Areas 5 and 7. 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(s): None</p>							

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