2014-2015 CATALOG



My NMC.





Northwestern Michigan College

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# 2014-2015 Academic Calendar

#### FALL SEMESTER 2014

Registration Begins	March 12, 2014
Tuition Payment Due	August 5
Classes Begin	August 23
College Closed (Labor Day holiday observed)	August 30- Sept. 1
Classes Cancelled	October 7
College Closed (Thanksgiving holiday observed)	Nov. 26 (after 5 p.m.) - Nov. 30
Classes End	Dec. 13
Grades Available	Dec. 17
College Closed (combined winter holidays observed)	Dec. 24-25 Dec 31 (noon)- Jan 1, 2015

#### **SPRING SEMESTER 2015**

Registration Begins	Oct. 22, 2014
Tuition Payment Due	December 30, 2014
Classes Begin	January 12
Spring Break (No Classes)	March 30- April 5
Honors Convocation	May 1
Commencement	May 2
Classes End	May 2
Grades Available	May 6

#### **SUMMER SESSION 2015**

Registration Begins	Oct. 22, 2014
Tuition Payment Due	April 28, 2015
Classes Begin	May 9
NMC BBQ	May 17
College Closed (Memorial Day holiday observed)	May 23-25
College Closed (Independence Day holiday observed)	July 3-5
Classes End	August 8
Grades Available	August 12

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# You're going places. We'll help you get there.

Northwestern Michigan College didn't get to be the oldest community college in Michigan by staying put. At NMC, our programs are always evolving to help prepare our learners for the real world.<sup>1</sup>

At NMC your classroom and laboratory can be Grand Traverse Bay, the sky, the woods...or a more traditional classroom and laboratory. It might be around the block, or halfway around the world. Wherever it is, it will feature state-of-the-art equipment and world-class instruction.

Still, some things have stayed the same for more than 60 years:

- You're going to get a great education<sup>2</sup>
- You're going to get personal attention from outstanding faculty who care about your success<sup>3</sup>
- You're going to be able to afford it<sup>4</sup>

## Footnotes:

- 1. More than 50 programs of study, 10 percent new in the past five years.
- 2. More than 90 percent of NMC graduates and transfer students consistently report accomplishing their educational goal and say that NMC is a good value for the money.
- 3. Average class size is 20.
- 4. NMC's in-district tuition is less than half that of a public four-year university.

# Welcome to NMC. Find it here.

"NMC's faculty and staff take pride in seeing students achieve their goals. Whatever you're looking for, we are dedicated to helping make sure you find it here."



# Welcome

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Timothy J. Nelson, President

# **Overview**

# History

Northwestern Michigan College was founded in 1951 by local citizens who wanted to provide an affordable college education for area residents. Starting out in temporary headquarters at the airport terminal building in Traverse City, NMC now has a spacious 100-acre main campus located east of downtown, between the east and west arms of Grand Traverse Bay. Four additional campuses provide facilities for comprehensive programs and community services:

- University Center Opened in 1995, this facility on Boardman Lake offers bachelor's completion programs and advanced degrees in partnership with eight Michigan colleges and universities.
- Aero Park Campus Located at Traverse City's Airport Industrial Park, facilities there house NMC's aviation, workforce development and trade and technical programs, including automobile service technology and renewable energy.
- Great Lakes Campus Opened in 2003 on West Bay, facilities include the Great Lakes Maritime Academy, the Great Lakes Culinary Institute, the Great Lakes Water Studies Institute and the Hagerty Center.
- **Rogers Observatory** Opened in 1981, more than 100,000 community members have visited the Observatory south of Traverse City for regular public viewing nights as well as for special celestial events like comets and eclipses.

# Location

Traverse City, Michigan is in the northwestern part of Michigan's lower peninsula and is accessible by U.S. 31/ M-37 from the north and south and M-72 from the east and west. Traverse City is the hub of the growing fivecounty region, home to about 165,000 year-round residents. Traverse City is known as the Cherry Capital of the World due to the prevalence of tart cherry trees, and as a fourseason resort area with a growing reputation for food and wine.

# Enrollment

Approximately 4,700 students enroll in credit courses each semester. An additional 10,000 enroll in non-credit courses and workshops annually. More than half of NMC's academic students are between 18 and 25 years old. The average student age is 27, factoring in the many adults in the region who choose to continue their education. More than 80 percent of students live in NMC's five-county service area.

# Calendar

NMC operates on a semester calendar. There are two 15-week semesters, fall and spring, plus many short-format offerings and shorter sessions during the summer.

# Degrees

NMC offers Associate in Science and Arts, Associate in Applied Science, Associate in General Studies, Associate Degree in Nursing, Bachelor of Science in Maritime Technology and career certificates in more than 50 programs. (Complete list available at **nmc.edu/programs**) The NMC University Center offers bachelor's completion and advanced degrees. NMC has committed to a statewide agreement that helps students transfer credits earned at NMC to participating four-year colleges and universities.

# **Campus Housing**

NMC provides a residence hall and apartment buildings on main campus. See pages 38-39.

# **Financial Aid**

More than half of NMC students receive financial aid through scholarships, loans, grants and on-campus employment. See pages 30-37.









Health & Science Building

Main Campus

Fine Arts Building

# **Main Campus**

**Facilities** 

1701 East Front Street, Traverse City, Michigan

#### APARTMENT BUILDINGS

NMC has three apartment buildings providing one and two bedroom apartments for married couples and single parents.

#### **BECKETT BUILDING**

This building was named for James J. Beckett, Chair Emeritus of the NMC Board of Trustees and longtime volunteer on behalf of the college. The building has six general purpose classrooms, three multi-media classrooms, and one computer lab. It also has faculty offices, a conference room and several study areas.

#### **BIEDERMAN BUILDING**

This building contains general purpose classrooms, student interaction areas, Student Health Services, faculty offices for Health Occupations, Science and Math, and the office of Public Relations. It is named for NMC founder Les Biederman, chair of the first Board of Trustees.

#### **DENNOS MUSEUM CENTER**

This major museum facility, named for donors Michael and Barbara Dennos, includes three galleries for changing exhibitions, an interactive gallery for children, and a gallery for NMC's collection of Inuit art. It also features a classroomsize theater and sculpture court gallery. The 367-seat William and Helen Milliken Auditorium has an open stage and offers performance space for NMC music, drama, and dance departments as well as community and visiting groups.

#### EAST HALL

This residence hall houses about 200 students and offices for the residence life staff. It was remodeled in 2002.

#### FOUNDERS HALL

The office of Resource Development, NMC Foundation, and two conference rooms are located here.

#### HEALTH AND SCIENCE BUILDING

Teaching laboratories for science courses such as chemistry, biology, physics and geology, and for health courses such as dental and nursing. There are also five general purpose classrooms and many interactive spaces for students in study rooms and hallways. The spacious lobby features the NMC Welcome Center and the building is connected to the Biederman Building at its southeast corner.

#### **OKERSTROM FINE ARTS BUILDING**

This building has studios, classrooms and an 84-seat recital hall. In 2000 this building was named in honor of Shirley S. Okerstrom, former member and chair of the NMC Board of Trustees and a supporter of the arts.

#### **OLESON CENTER FOR CONTINUING EDUCATION**

This conference center, remodeled in 2006, features three meeting rooms which can be used separately or as one large room, a teaching kitchen and a multi-purpose room. The Oleson Center was named in honor of the Gerald and Frances Oleson family which has provided long-term support of the college through the annual Barbecue and other donations.

**Dennos Museum Center** 







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Main Campus

Great Lakes Campus

Wise Memorial Clock Tower

# Facilities

# Main Campus continued

1701 East Front Street, Traverse City, Michigan

#### **OSTERLIN BUILDING**

The Osterlin Building was named after Dr. Mark Osterlin and Mrs. Helen Osterlin. In this building are the Osterlin Library, the Student Success Center, Educational Media Technologies, Advising Center, Disability Support Services, Tutoring, classrooms and computers.

#### **RAJKOVICH PHYSICAL EDUCATION CENTER**

This building has a gymnasium, fitness center (updated in 2012), dance studio, and classrooms. In 1969, it was named after Nick Rajkovich, a former faculty member who developed the NMC physical education program. In 2000, Frances Rajkovich's name was added to the building in recognition of her generous support of NMC.

#### SCHOLARS HALL

This building contains general purpose classrooms, faculty offices for Communications and Social Sciences, the Writing and Reading Center and many student study areas.

#### TANIS BUILDING

This building was named for Preston N. Tanis, the first president of NMC who directed the college from 1951-1970 and wrote its first history. In this building are the offices of Admission, Records and Registration, Student Financial Services and the Math Center.

#### WELCOME CENTER

This information headquarters is located in the lobby of the Health and Science Building.

#### WEST HALL & STUDENT CENTER

Remodeled in 2002, West Hall houses the college's food service, the NMC Bookstore, as well as the offices of Student Life, Personal Counseling, Outreach Services, WNMC Radio and Student Government.

#### WISE MEMORIAL CLOCK TOWER

Located south of East Hall on the main campus, the clock tower was named for benefactors Harold and Imogene Wise and was erected with private donations from NMC founder Les Biederman, the Wise family, and NMC faculty and staff.

# **Great Lakes Campus**

#### 715 East Front Street at Barlow Avenue, Traverse City

This facility on the West Bay waterfront houses the Great Lakes Maritime Academy, the Great Lakes Culinary Institute, the Great Lakes Water Studies Institute, and the Hagerty Center. The two buildings are connected by a glass exhibition hall to preserve views of the bay.

#### HAGERTY CENTER

The Hagerty Center is a full-service banquet and conferencing facility, providing state-of-the-art technology and a professional staff. For more information, contact a Hagerty Center representative at (231) 995-3100.





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Great Lakes Maritime Academy







#### 2014 - 2015 NMC CATALOG



Automotive Technology

Aviation

NMC Aviation



Aero Park Campus

# Facilities

# **Aero Park Campus**

Aero Park Drive, Airport Industrial Park, Traverse City

#### **AERO PARK LABORATORIES**

2525 Aero Park Drive

Aero Park Laboratories (APL) is NMC's newest campus building. Located on the Aero Park campus, across from the Automotive Technologies building, it is home to NMC's Construction Technology and Renewable Energy programs.

#### AUTOMOTIVE TECHNOLOGY BUILDING

2510 Aero Park Drive This facility contains the Automotive Service Technology Program.

#### **AVIATION BUILDING**

2550 Aero Park Drive

This building contains the Flight Training Device (FTD) for the NMC Aviation Program. An adjacent hangar provides aircraft parking space.

#### PARSONS-STULEN BUILDING

#### 2600 Aero Park Drive

This facility provides training in the areas of manufacturing, aviation, and information technology. Named after John T. Parsons and Frank L. Stulen, local innovators who created "numerical control," this facility contains a flexible learning environment, computer labs, conference room and faculty and staff offices. Other offerings include organizational Training.

# Observatory

1753 Birmley Road, between Garfield and Keystone Roads, south of Traverse City

## ROGERS OBSERVATORY

This facility is named after former science/math division director and instructor Joseph H. Rogers, who spearheaded the project. The structure contains a classroom area, dome, telescope and darkroom. It was constructed to house astronomy classes and provide an educational program for community groups. The Grand Traverse Astronomical Society conducts regular programs at the Observatory.

# **University Center Campus**

2200 Dendrinos Drive, off Cass Road between 14th Street and South Airport Road, Traverse City

This campus is home to NMC's eight University Center partners, who offer more than 58 bachelor's completion and advanced degree programs in the areas of business, education and health and human services. NMC's Extended Education division and several business offices, including human resources, are also housed here.

**Rogers Observatory** 



**University Center** 



University Center Campus



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# **Dennos Museum Center**

#### www.dennosmuseum.org

(231) 995-1055

Programming in the visual and performing arts for the college community and the citizens of northwestern Michigan.

Open to the public Mon.-Sat., 10 a.m. to 5 p.m., Thur. until 8 p.m., and Sun., 1 to 5 p.m. NMC students are admitted free with student ID. Museum members are admitted free.

# Great Lakes Water Studies Institute

#### www.nmc.edu/water

(231) 995-1793

Located at NMC's Great Lakes Campus on West Grand Traverse Bay, NMC's Water Studies Institute is strategically positioned to engage individuals and organizations to protect, wisely use, and manage the key resource of fresh water.

# **Hagerty Center**

# **www.nmc.edu/hagerty** (231) 995-3100

Located at NMC's Great Lakes Campus, the Hagerty Center is a premier waterfront venue for lifelong learning. State-of-the-art conferencing facilities, space to seat up to 380 and an on-site chef and culinary facilities are available to meet the needs of trade shows, conferences and banquets.

# Lobdell'S: A Teaching Restaurant

#### www.nmc.edu/culinary

Reservations: (231) 995-3120

Located at the Great Lakes Campus, Lobdell's serves as a working laboratory for culinary students and is open to the public for lunches and dinners in fall and spring semesters.



# **Osterlin Library**

#### www.nmc.edu/library

(231) 995-1060

Community members as well as students may use the library facilities, including computers, and borrow books free of charge. Photo ID is required for a library card or to use computers. The library has an extensive collection of research volumes, periodicals and government documents.

# **Rogers Observatory**

#### www.nmc.edu/observatory

(231) 995-2300

Named for Joseph H. Rogers, the late science/math division director and instructor who spearheaded the project. Located south of Traverse City to take advantage of dark skies, the Grand Traverse Astronomical Society conducts regular programs at the Observatory.

# **Training Services**

#### www.nmc.edu/training

Aero Park Campus, (231) 995-2218

Customer-focused solutions, active learning model training, on and off-site delivery – this is what you can expect from NMC's Training Services. Gain a clearer understanding of your own processes and create an improvement plan developed through a facilitated event at your facility. Areas of focus include:

# **Training and Coaching**

- Advanced Manufacturing
- Lean Business Practices
- Leadership and Team Skills
- DiSC behavioral training

# **WNMC** Radio

#### www.wnmc.org

Requests: (231) 995-1090

Located at 90.7 FM, WNMC is community radio. Most of the people you hear on the air are just local people like yourself who love great music and great radio. Volunteers are always welcome.

# NMC. Find it here.



# New Student Checklist

# **Find out about NMC**

- □ Explore the opportunities for study at NMC visit **www.nmc.edu** or review this NMC catalog.
- □ Call the Welcome Center to schedule a tour, (231) 995-1135.

# **Complete the Application for Admission**

- □ Find at **www.nmc.edu/admissions**
- □ Submit online, along with the \$20 fee.
- Request your high school transcript or GED scores, ACT scores, AP scores and college transcripts, where applicable, be sent to the Admissions Office.
- Tour on-campus housing and find out more about our full-service residence hall and campus apartments.

# Apply for the Financial Assistance You Need

- □ Go to **www.fafsa.gov** online to complete and submit your Free Application for Federal Student Aid (FAFSA). For more information, visit the Financial Aid Office on the main floor of the Tanis Building, visit **www.nmc.edu/financial-aid** or call (231) 995-1035.
- Check with your academic office to find out more about divisional scholarships.

# **Complete Placement Testing**

- □ Take NMC's COMPASS placement exam to make sure you are placed in the right courses. You may only need to take portions of the test:
  - If you have ACT scores in reading of 19 or higher and writing of 18 or higher, you do not need to take the reading/writing portion.
  - If you have an ACT score of 19 or higher in math, you do not need to take the math portion unless you wish to take a class higher than your placement allows. (High school dual-enrolled students need 21 or higher.)
- □ COMPASS testing is available daily through the Student Success Center in the Osterlin Building. Evening and weekend hours are available, call (231) 995-2134. Visit **www.nmc.edu/compass** to prepare for the test.
- □ Ideally COMPASS is completed before Orientation. If traveling from out of the area, placement testing may be completed on your Orientation date.

# **Attend Orientation**

- □ All new students are required to attend. Choose a date and time at **www.nmc.edu/orientation**
- □ At Orientation you will get an overview of NMC and meet with an academic advisor to schedule your classes.

# **Register & Pay for Classes**

- Register early for best selection and pay according to the dates published in the Registration Guide.
- Register and pay at Orientation, online at www.nmc.edu/selfservice or in the Records and Registration Office. Stop by the Bookstore in West Hall and purchase your books.

# Academic Area: Aviation

#### **Contact Information**

www.nmc.edu/aviation

2600 Aero Park Drive (231) 995-1220 (231) 929-7116 fax aviation@nmc.edu

#### Memberships

• NBAA

# Accreditation

Federal Aviation Administration

#### **Transfer Guides** Available at

www.nmc.edu/advising

#### Scholarships

See page 35, Aviation Academic Office, or visit www.nmc.edu/financial-aid

#### **Facilities**

- Single-engine aircraft
- Multi-engine aircraft
- 2 simulators
- Unmanned Aircraft Systems

#### **Opportunities**

• Honors courses

# **Aviation**

Accelerated flight programs, first-class instruction and great career opportunities await those who enroll in NMC's Aviation program. You'll experience personal attention from instructors as you work toward obtaining an associate or bachelor's degree. The program, which is well-known in the airline industry, offers Private, Instrument and Commercial certificates. NMC is one of the few community colleges to offer training in Unmanned Aerial Systems as well as an international aviation partnership that will enable you to fly worldwide in countries accepting EASA/JAR-FCL and FAA pilot licenses.

# **Program Highlights**

- Training Pilots since 1967
- FAA 141 and VA approved
- Specialty courses in Unmanned Aerial Systems
- International aviation partnerships that allow students to obtain both FAA and EASA/JAR-FCL licenses
- Certificates/ratings in two years or less
- Options to complete Multi-engine, Flight Instructor and Instrument Flight Instructor Ratings
- In-house FAA flight testing
- Four-season environment for quality training
- Glass Panel Aircraft (G1000)
- Frasca simulator with 220-degree visual display system
- Aerobatic, Tailwheel and Seaplane Training
- Cross-country flight opportunities
- Non-credit programs available

# **Degrees Available**

Associate in Applied Science	(AAS)	. 6	5
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# **Transfer Opportunities**

NMC's University Center offers two bachelor's degree program options for aviation students via partners Ferris State University and Davenport University. See page 22-23. After two years at NMC, you may move to their campuses, or remain in Traverse City and continue to pursue your degree at the University Center. Aviation faculty can advise you on bachelor's degree completion programs at other schools.



# Academic Area: Business

# **Business**

Business programs prepare you for immediate employment in today's competitive, complex and changing business world or to transfer to a four-year school. The curriculum includes business-specific classes and liberal arts studies.

Students planning to enter the job market upon graduation generally pursue an Associate in Applied Science (AAS) degree or a Certificate of Achievement. Those who plan to transfer to four-year institutions to pursue a bachelor's degree should refer to the requirements for the Associate in Science and Arts (ASA) degree. During your first semester at NMC, you should consult an academic advisor for guidance in scheduling courses to meet your objectives.

## **Degrees Available**

Associate in Applied Science (AAS) Associate in Science and Arts (ASA) Certificates of Achievement

## **Occupational Specialty Programs**

Accounting (AAS)	61
Administrative Support Specialist (Certificate)	61
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Computer Information Technology - General (AAS)	67
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Infrastructure Specialist I, II and III (Certificates)	69
Office Applications Specialist (Certificate)	70
Computer Support Specialist (Certificate)	70
Industry Certifications	71
Culinary Arts (AAS)	76
Culinary Arts (Certificate)	
Entrepreneurship - Levels I and II (Certificates)	
Technical Management Administration (AAS)	
Web Developer - Levels I, II and III (Certificates)	72

#### Transfer Options (Follow ASA Degree Requirements)

Accounting	
Business Administration	

# **Online & Other Learning Options**

- AAS Business Administration General Business
- ASA degree Depending on the transfer college requirements, many required courses can be taken online.
- Computer Studies: Office Applications Specialist Certificate

#### **Contact Information**

www.nmc.edu/business

James Beckett Building (231) 995-1169 (231) 995-1546 fax business@nmc.edu

#### Accreditation

American Culinary Federation

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Business Academic Office, or visit www.nmc.edu/financial-aid

#### Facilities

- The James J. Beckett 204 Computer Lab provides business specific technology resources to students.
- The Parsons Stulen 204 Computer Lab provides technology resources to students.
  Cisco Lab

#### **Opportunities**

- Honors courses
- Internships

#### **Testing Services**

• NMC is an authorized Certiport, Pearson-Vue and Prometric testing center.

# Academic Area: Communications

#### **Contact Information**

www.nmc.edu/communications

Scholars Hall (231) 995-1175 (231) 995-1952 fax communications@nmc.edu

#### **Student Organizations**

- White Pine Press
- NMC Magazine
- NMC Players
- Live Poets Society

Transfer Guides

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Communications Academic Office, or visit www.nmc.edu/financial-aid

#### **Facilities**

- 2 Computer Classrooms
- Writing and Reading Center

#### Internship

Broadcasting with WNMC

#### **Opportunities**

Honors courses

# **Communications**

You may choose Communications courses to fulfill requirements for other programs or concentrate in one of these four specific areas of study:

- Public Speaking and Communications Studies
- English:
  - Developmental Reading and Writing, including classes for English Language Learner (ELL) students
  - College Composition with class sections for ELL students
  - Literature
  - Linguistics
- Theater
- World Languages: American Sign Language, French, and Spanish

Students who choose a concentration are generally planning to transfer to a four-year college or university to complete a bachelor's degree. While at NMC, these students pursue a general liberal arts curriculum, with electives chosen from their area of interest. If you plan to transfer, consult with advisors and faculty members in your field of interest during your first semester at NMC to familiarize yourself with transfer requirements. Staying in Traverse City and transferring to NMC's University Center is another option if you wish to continue with a liberal studies curriculum.

# **Degrees Available**

Associate in Science and Arts (ASA)

#### Transfer Options (Follow ASA Degree Requirements)

- 0 1	-
Communications	
English	
Theater	
World Languages	
American Sign Language	60
French	60
Spanish	60

# **Online & Other Learning Options**

ASA degree - Depending on the transfer college requirements, many required courses can be taken online.



# Academic Area: Freshwater Studies

# **Freshwater Studies**

This water focused program has an interdisciplinary approach designed to offer students flexibility and a variety of opportunities especially critical in these challenging economic times. The core program requirements include Introduction to Freshwater Studies, Watershed Science, Geographic Information Systems (GIS), Oceanography, Meteorology and Climatology, and an Internship experience either locally or overseas.

The degree is intended both for students who plan to enter the professional arena as well as those who wish to further their studies at a four-year school.

#### **Degrees Available**

Associate in Applied Science (AAS) Associate in Science and Arts (ASA)

## **Concentration Streams**

Economy and Society	81
Global Freshwater Policy and Sustainability	81
Science and Technology	81

## **Transfer Options**

NMC has collaborated with universities across Michigan leading toward opportunities for bachelor degree completion in multiple programs. Transfer opportunities to four-year programs include:

- Biology Aquatic Biology, Marine Biology
- Conservation Leadership
- Environmental Science
- Environmental Sustainability
- Fisheries and Wildlife Management
- Natural Resources Management
- Surveying Engineering Emphasis in Hydrographic Surveying
- Water Resources Management

You may also complete your degree in Traverse City with the following program:

• Liberal Studies with an Environmental Studies minor at Grand Valley State University



## **Contact Information**

www.nmc.edu/water

NMC Great Lakes Campus (231) 995-3333 (231) 995-1794 fax water@nmc.edu

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

Visit www.nmc.edu/financial-aid

#### Facilities

- Water analysis laboratory
- *Outland 1000* remotely operated vehicle (ROV)
- *R/V Northwestern* research vessel
- Advanced sonar hardware and software

#### **Opportunities**

- Honors courses
- Internships

# Academic Area: Health Occupations

#### **Contact Information**

**www.nmc.edu/healthoccupations** Biederman Building 103G (231) 995-1235 (231) 995-1950 fax

(251) 995-1950 fax healthoccupations@nmc.edu

#### Student Organizations

ADAA Student Membership

• MDAA

## Accreditation

- Michigan Board of Nursing
- American Dental Association Commission on Dental Accreditation

## **Transfer Guides**

Available at **www.nmc.edu/advising** 

## Scholarships

See page 35, Health Occupations Academic Office, or visit www.nmc.edu/financial-aid

#### Facilities

The Health & Science Building Nursing Lab and the Robert Chase Dental clinic provide exceptional environments for learning.

#### Opportunities

- Advanced studies available through the University Center
- Honors courses

# **Health Occupations**

Health Occupations programs prepare you for immediate employment or to transfer to four-year colleges and universities. Specialized occupational classes lead to a certificate. The Associate Degree programs offer a combination of specialized classes and liberal arts and science studies.

The Dental Assistant and Nursing programs have specific admissions requirements. Details appear in the program information section.

If you plan to transfer, consult with advisors and faculty members in your field of interest during your first semester at NMC to familiarize yourself with transfer requirements. Transferring to NMC's University Center is another option.

# **Degrees Available**

Associate Degree in Nursing (ADN) Associate in Applied Science (AAS) Certificate of Achievement

# **Occupational Specialty Programs**

Allied Health	
Respiratory Therapy (Partnership)	
Dental Assistant	
Dental Assistant (AAS)	77
Dental Assistant (Certificate)	
Nursing	
Associate Degree in Nursing (ADN)	
LPN to ADN Completion (ADN)	
Practical Nursing (Certificate)	

# **Transfer Options - Nursing**

Many colleges and universities offer BSN completion programs. Three University Center partners: Davenport University, Ferris State University and Spring Arbor University, allow you to complete your BSN while remaining in Traverse City. See page 22-23 or go to **www.nmc.edu/uc** for more information.

# **Online & Other Learning Options**

• Nursing Online Option (page 87)



# Academic Area: Humanities

# **Humanities**

From graphic design, animation, audio technology, music, dance to history and philosophy, NMC's Humanities academic area offers you a wide range of creative educational opportunities. You'll also learn unique skills that will ultimately help you move on to a university or land a job in your desired field. All Humanities students have access to state-of-the-art Apple Certified Mac labs. If you're interested in pursuing a career in the music industry - in studio recording, live sound, or digital audio - our cutting-edge Audio Tech program can provide you with the skills and experience you will need for a successful transition into the workforce. We also provide private instrument instruction and opportunities to participate in a variety of musical ensembles and performances. You also may take advantage of our flexible learning options through our Visual Communications program, history, philosophy and music courses.

# **Degrees Available**

Associate in Applied Science (AAS) Associate in Science and Arts (ASA)

# **Occupational Specialty Programs**

Audio Technology (AAS)	62
Visual Communications (AAS)	92
Visual Communications - Creative Management in Art Direction (AAS)	92

# **Transfer Opportunities**

Art
Dance
History
Music
Philosophy
Religion

# **Online & Other Learning Options**

ASA degree - Depending on the transfer college requirements, many required courses can be taken online.



#### **Contact Information**

www.nmc.edu/humanities

Fine Arts Building (231) 995-1325 (231) 995-1696 fax humanities@nmc.edu

#### **Student Organizations**

- White Pine Press
- NMC Magazine

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Humanities Academic Office, or visit www.nmc.edu/financial-aid

#### Labs

- Music Macintosh Lab
- Visual Communications Macintosh Labs

#### Equipment

- Music Instruments
- Fully-equipped Ceramic Studio

#### **Opportunities**

- Instrument, Dance and Ensemble Performance
- Concert & Jazz Band
- Chamber Singers
- Chorale
- Hands-on work experience in Visual Communications with non-profit organizations
- Student Publications
- Honors courses

# Great Lakes Maritime Academy

**Contact Information** 

#### www.nmc.edu/maritime

Great Lakes Campus (877) 824-SHIP (231) 995-1200 (231) 995-1318 fax maritime@nmc.edu

#### Cadet Organizations

- International Shipmasters Association
- Propeller Club
- Sailing Team
- SNAME Society of Naval Architects & Marine Engineers
- Women On The Water

#### Accreditation

- U.S. Maritime Administration
- U.S. Coast Guard

#### Scholarships

See page 35, GLMA Academic Office, or visit www.nmc.edu/financial-aid

#### Facilities

- Great Lakes Campus
- T/S State of Michigan
- Maritime Labs
- Shiphandling Simulator
- Engineering Simulator
- Great Lakes Campus Harbor

#### **Shipboard Internships**

- Academic
- Domestic Sailing
- International Sailing

#### **Opportunities**

- Sea time aboard *T/S State of Michigan*, Great Lakes and ocean vessels
- Honors courses
- Attend presentations and/or interviews by prospective employers at the academy.



@Great Lakes Maritime Academy

# **Great Lakes Maritime Academy**

At the Great Lakes Maritime Academy, you'll prepare for the challenge of operating commercial ships as a deck or engineering officer.

Cadets earn a federal license and a Bachelor of Science in Maritime Technology. A core maritime curriculum for cadets who enter the Academy with a Bachelor's degree is also available.

Upon completion of all requirements, cadets are prepared to write the U.S. Coast Guard examination for licensing as deck or engineering officer.

Cadets learn seamanship, navigation and piloting or steam and diesel engineering with up to 300 days of sea time. The training ship *State of Michigan* is used daily as a floating classroom, a hands-on learning environment and sets sail during the year to reinforce skills taught shoreside. Upon graduation, you will discover exceptional employment opportunities and salaries.

# **Degrees and Credentials Available**

Bachelor of Science in Maritime Technology	
Deck Officer	
Engineering Officer	
Associate in Applied Science.	
Power Plant Facilities Operator.	
U.S. Coast Guard unlimited tonnage license for:	

- Third Mate of the Great Lakes and Oceans (Deck)
- 1st Class Great Lakes Pilot (Deck)
- Third Assistant Engineer, Steam or Motor Vessel, unlimited horsepower (Engineering)



# Academic Area: Physical Education

# **Physical Education**

A wide variety of Physical Education courses allow you to pursue personal interests, improve fitness, participate in sports or recreational activities, relieve stress, or earn additional credits. Two physical education credits may be taken as electives to satisfy the total number of Group 2 credits needed to fulfill associate degree requirements. See page 47.

Physical Education courses are grouped as follows:

In addition to these credit courses, the Physical Education program offers non-credit recreational opportunities. For a fee, you may join the Fitness Center, which is equipped with weight machines, exercise bikes, treadmills, stair climbers, and elliptical trainers. Intramural sports start in the fall with flag-football and co-ed volleyball, and then moves indoors in the winter with co-ed basketball, dodge ball and soccer.

Open recreation hours allow you to join in pick-up games of basketball, volleyball, or indoor soccer. Outdoor facilities include an athletic field, softball diamond, sand volleyball and basketball courts, and a frisbee/disc golf course.

#### **Transfer Opportunities**

Most Physical Education credits will transfer to four-year schools in Michigan. Check with the Advising office for requirements at specific schools.

#### **Contact Information**

#### www.nmc.edu/physicaleducation

Nick and Frances Rajkovich Physical Education Center (231) 995-1198 physicaleducation@nmc.edu

#### Student Organizations

See page 41.

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Physical Education Academic Office, or visit www.nmc.edu/financial-aid

#### Facilities

- Athletic Gymnasium
- Fitness Center
- Exercise and Dance Room
- Athletic Field
- Outdoor Sports Courts

#### **Opportunities**

- Recreation and Intramural Sports
- Honors courses



# Academic Area: Science & Math

Learning Opportunities

## Contact Information

www.nmc.edu/science-math Biederman Building 203G (231) 995-1260 (231) 995-2120 fax science-math@nmc.edu

#### **Student Organizations**

- Astronomy Club
- Engineering Club

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Science & Math Academic Office, or visit www.nmc.edu/financial-aid

#### **Facilities**

- Greenhouse
- Observatory
- Science Labs:
  - Anatomy & Physiology
  - General Biology
  - General Chemistry
  - Geology
  - Human Biology
  - Microbiology
  - Organic Chemistry
  - Physics

#### Opportunities

• Honors courses

# Science & Math

You'll find courses designed to fulfill basic requirements in occupational programs at NMC. Also, most Science and Math courses are easily transferable to four-year institutions, making your path toward a bachelor's degree a smooth one.

# **Degrees Available**

Associate in Applied Science (AAS) Associate in Science and Arts (ASA)

# **Occupational Specialty Programs**

Plant Science, Applied (AAS)	 0

# **Transfer Opportunities**

Astronomy	57
Biology	57
Chemistry	57
Engineering	58
Environmental Science	58
Mathematics	59
Physics	59

# **Online & Other Learning Options**

ASA degree - Depending on the transfer college requirements, many required courses can be taken online.



# Academic Area: Social Science

# **Social Science**

Whether you're looking to fill a program requirement or wish to concentrate in a specific social science area that transfers to a four-year institution, you'll find what you need here. NMC offers transfer courses in Anthropology, Child Development, Criminal Justice, Education, Economics, Geography, Political Science, Psychology, Sociology, and Social Work. Students who study the social sciences go on to work in a number of fields in business, child care, education, human service, governmental and non-profit arenas, and field research.

If your interest lies in serving the community as a police officer, the Law Enforcement program prepares students to become law enforcement officers while earning a two-year degree. Child Development is another specialty program that prepares qualified students to work in the field while earning a certificate. NMC also offers specialty courses in Nautical and Underwater Archaeology that may not be found at larger institutions. NMC works closely with our University Center partners so students may earn a bachelor's degree in Criminal Justice, Social Work or Education.

For students looking to build their resume, Service Learning projects offer the opportunity to explore careers and build work-related skills through hands-on learning. At the same time, you are providing important volunteer services to the community.

# **Degrees and Credentials Available**

Associate in Applied Science (AAS) Associate in Science and Arts (ASA) Certificate of Achievement

# **Occupational Specialty Programs**

Child Development (Certificate)	. 67
Law Enforcement (AAS)	. 82

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Anthropology	57
Child Development	
Criminal Justice	
Economics	
Education	
Geography	
Political Science	60
Psychology	60
Social Work	60
Sociology	60

# **Online & Other Learning Options**

- ASA degree Depending on the transfer college requirements, many required courses can be taken online.
- Criminal Justice program (ASA degree)

#### **Contact Information**

www.nmc.edu/socialscience Scholars Hall (231) 995-1290 (231) 995-1299 fax socialscience@nmc.edu

#### Accreditation

- MCOLES Law Enforcement
- National CDA Certified Training Site - Child Development

#### **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Social Science Academic Office, or visit www.nmc.edu/financial-aid

#### Internships

Service Learning Internships

#### **Opportunities**

Honors courses

# Academic Area: Technical

**Contact Information** 

www.nmc.edu/technical

2600 Aero Park Dr. (231) 995-1300 (231) 995-2022 fax technical@nmc.edu

#### Accreditation

Automotive Service Excellence (ASE)

## **Transfer Guides**

Available at **www.nmc.edu/advising** 

#### Scholarships

See page 35, Technical Academic Office, or visit www.nmc.edu/financial-aid

#### Facilities

- Auto-Tech Lab
- Computer Lab
- Electronics Lab
- Hydraulics Lab
- Machining Lab
- Robotics Lab
- Welding Lab

#### **Opportunities**

- Honors courses
- Internships

# **Technical**

Technical programs prepare you for immediate entry level employment or to transfer to a four-year institution. In addition to degrees, certificates and certifications, technical programs allow those already employed to upgrade their technical skills. In all technical programs, enrollments are limited to give you access to the most current technology, industry-knowledgeable instructors, curriculum reviewed and approved by local advisory committees, and hands-on training.

# **Degrees and Credentials Available**

Associate in Applied Science (AAS) Certificate of Achievement Industry Certifications

## **Occupational Specialty Programs**

Automotive Automotive Service Technology (AAS) ......63 Hybrid Technology Specialist (Certificate)......64 Construction Technology Carpentry Technology (Certificate)......73 Facilities Maintenance (Certificate)......73 HVAC/R Technology (Certificate).....73 Renewable Energy Electrical (AAS & Certificate) ......74 Engineering Technology (AAS) Electronics Technology......75 General Technology......75 Marine Technology (ROV).....75 Photonics Technology......75 Robotics & Automation Technology ......75 Unmanned Aerial Systems (UAS) Technology......75 Unmanned Ground Vehicles (UAV) Technology......75 



# Online & Hybrid Learning Options

# **Online Learning**

#### www.nmc.edu/online

Osterlin Building, Room 134, (231) 995-1070

NMC offers many courses and five degree programs online. Courses may be delivered:

- Completely online
- Online with proctored testing
- Hybrid courses blend online (50%+) and on-campus delivery

Hybrid courses blend the traditional, on-campus, classroom with the online environment. On-campus time is significantly reduced, providing greater schedule flexibility. Hybrid courses offer the best of both learning environments.

Benefits of on-campus learning:

- In-person, social interaction
- Immediate feedback
- Hands-on learning
- Scheduled meetings
- Benefits of online learning:
- · Reduction in scheduled, on-campus meetings
- Less travel time and related costs
- Flexibility and convenience in scheduling classwork time
- Time to reflect before discussion/course activity response

The online course areas are accessed using NMC's eLearning (Moodle) system at **elearn.nmc.edu** 

Visit **www.nmc.edu/online** for more information. Using the searchable schedule feature, you can determine which classes are offered online or in other delivery methods.

# **Degree & Certificate Programs**

#### ADN (Associate Degree in Nursing)

- Intended for full-time ADN students
- Lab and clinical courses require on-site attendance
- More information: www.nmc.edu/healthoccupations or (231) 995-1235

#### AAS (Associate In Applied Science Degree) Business Administration - General Business

- Business Internship course requires on-site attendance
- More information: (231) 995-1169

**ASA (Associate in Science and Arts Degree)** More information: NMC Advisor at (231) 995-1040

#### AGS (Associate in General Studies)

More information: NMC Advisor at (231) 995-1040

#### **ASA: Criminal Justice**

- A collaborative program among NMC, Delta College and West Shore Community College
- More information: (231) 995-1290

**Computer Studies: Office Applications Specialist Certificate** More information: (231) 995-1169

## **Noncredit Online Learning**

See page 24, visit www.nmc.edu/ees or call (231) 995-1700.

# **Bridge Learning Community**

#### www.nmc.edu/bridge

Main Campus, Osterlin Building, Student Success Center (231) 995-3021

NMC's Bridge Learning experience is designed specifically for nontraditional adult learners, in a cohort environment. Working with more than 30 regional agencies to serve individuals residing in the surrounding six-county area, the program enrolls 60+ students each year.

Students in the program describe it as motivational; it's both a confidence builder and an opportunity to succeed. The program is a learning community, and it operates on the premise that students learn better together.

The program received the Equity in Higher Education Award from the Michigan Association of Collegiate Registrars and Admissions Officers. NMC's Bridge Learning experience was chosen from among six competitive programs in Michigan for its encouragement and promotion of equal educational opportunities in higher education for all, especially the economically and educationally challenged.



# NMC University Center



www.nmc.edu/uc 2200 Dendrinos Drive (off Cass Road)

Traverse City, MI 49684 (888) NMC-UCTC (662-8282) (231) 995-1777

# What can I study?

The University Center partners offer programs in the areas of Business, Health and Human Services, and Education. Visit **www.nmc.edu/uc** or see the University Center Catalog for more information.

# What degrees are available?

Bachelor's completion degrees, master's degrees, doctoral degrees, professional certificates, education endorsements and planned programs.

# How do I apply?

The usual approach for admission to a bachelor's degree program is to complete the first two years of college courses (and an associate's degree) from Northwestern Michigan College. You then apply for admission to the four-year institution of your choice. Applications are available through UC campus office representatives. Once accepted to a university, you are literally a student at that institution, with the same rights and responsibilities as other students at that college or university.

# How can I get help?

Consult directly with representatives from the university to learn about their programs. Planning ahead will ensure that you complete courses or tests required for admission.

# How do I register for classes?

You can register by mail, telephone, onsite, and online. Call the university representative for details.

# How do I pay?

Tuition and fees are assessed by the individual partner institutions. The UC campus office representatives are the best source of information.

# Is financial aid available?

Financial aid eligibility and awards are primarily determined by the student's school of choice. Visit **www.nmc.edu/uc** or contact the UC campus representative for more information. Some scholarship money is available from the UC. For information call (231) 995-1749.

# Where are classes held?

Most classes are held at the NMC University Center Campus on Boardman Lake in Traverse City. Located at 2200 Dendrinos Drive, the UC campus is off Cass Road, north of South Airport Road.

# How can I find out more?

Visit **www.nmc.edu/uc** to find out more about the programs and universities you're interested in. Tours of the University Center are available by calling (231) 995-1777 or stop by the Welcome Center at the UC campus.

# **UC Partners/Programs:**

# **Central Michigan University**

Contact: Judith Nemitz 2200 Dendrinos Dr., Suite 101 (231) 995-1756, (231) 995-1758 fax global.cmich.edu

#### **Bachelor's Program**

- Elementary Education Certification
  - Integrated Science (DI) (major)
- Reading (BT) (minor)
  - Early Child Development (ZS) (minor)

#### Post-Bachelor's Program

• Post-BA/BS Teacher Certification Elementary

#### **Master's Programs**

- Administration, with concentrations in: - General
  - Health Services
  - Human Resources
  - Leadership
  - Public
- Humanities
- Public Administration (concentrations in Public Management, State and Local Government, and General)
- Reading and Literacy (BR) (K-12)
- School Principalship (Building Certificate)

#### **Post-Master's Program**

• Specialist in Education (EdS) (Central Office Certificate)

#### **Doctoral Program**

• Doctor of Education (EdD)

#### Certificates

- General Administration
- Health Services Administration
- Human Resources
- Leadership
- Public Administration

#### Endorsements

- Building Certificate
- Central Office Certificate
- Early Childhood (ZS)
- Integrated Science (DI)
- Reading (BT)
- Reading Specialist (BR)
- Recertification/Endorsement/Ed Planned Program

## **Davenport University**

Contact: Katherine Baxter 2200 Dendrinos Dr., Suite 104 (231) 995-1740 or (800) 894-0883 (231) 995-1743 fax katherine.baxter@davenport.edu

#### **Bachelor's Programs**

- Business Administration (BBA) with concentrations in:
  - Aviation Management (speciality)
  - General Business
  - Human Resource Management
  - Management
  - Marketing

#### Master's Program

Business Administration (MBA)
 Strategic Management (specialty)

#### **Certificate Program**

• Post-Baccalaureate Certificate in Human Resource Management

#### Eastern Michigan University

Contact: Jacqui Frensley 2200 Dendrinos Dr., Suite 98 (231) 995-1750 or (877) 368-8289 (231) 995-1751 fax traverse.city@emich.edu

#### **Graduate Certificate Program**

Historic Preservation

# **Ferris State University**

Northern Region 2200 Dendrinos Dr., Suite 100 (231) 995-1734 or (866) 857-1954 (231) 995-1736 fax FerrisNorth@ferris.edu

#### **Bachelor's Programs**

- Accountancy/Public Accountancy
- Business Administration (BS)
  - Aviation
  - Maritime
  - Professional Track
- Computer Information Systems (CIS)
- Computer Information Technology (CIT)
- Criminal Justice
- Hotel Management
   Culinary Emphasis
- Information Security and Intelligence (ISI)
- Nursing (RN-BSN)
- Secondary Teacher Education
- Social Work

#### Technical Education

#### Post-Bachelor's Program

• Post-BA/BS Teacher Certification, Secondary and Technical Education

#### **Master's Programs**

- Career & Technical Education - Instructor
  - Postsecondary Administrative
- Education-Curriculum and
  - Instruction
  - Special Education (LD, AU, EI)
  - Subject Area

#### Certificates

- Homeland Security: Digital Security and Forensics
- Human Resource Management
- International Business
- Special Event and Meeting Planning (SEMP)

#### Endorsements

- 8 Hour Planned Programs
- Educational Planned Program
- Endorsement: Secondary
- Endorsement: Special Education (LD, AU, EI)

## Grand Valley State University

Contact: Sue Wierzbicki 2200 Dendrinos Dr., Suite 102 (231) 995-1785 or (888) 922-1785 (231) 995-1786 fax nminfo@gvsu.edu

#### **Bachelor's Programs**

• Liberal Studies

#### Post-Bachelor's Program

• Post-BA/BS Teacher Certification, Elementary

#### **Master's Programs**

- Education
  - Elementary Education
  - Instruction & Curriculum
  - Early Childhood (ZS)
  - Special Education (CI)
- Occupational Therapy (hybrid)
- Physician Assistant Studies
- Social Work

#### Certificate & Minor

• Nonprofit Leadership (graduate)

# NMC University Center

#### Endorsements

- Early Childhood (ZS)
- Educational Planned Program
- Elementary Education
- Special Education: Cognitively Impaired (CI)

# **Michigan State University**

Contact: Brian Matchett 2200 Dendrinos Dr., Suite 203 (231) 995-1719

#### Program / Certificate

- Applied Plant Science (NMC AAS/ ASA Degree and MSU Certificate)
  - Commercial Horticulture Operations
  - Landscape Horticulture
- Viticulture

# **Spring Arbor University**

Contact: Lin Benfield 2200 Dendrinos Dr., Suite 200 (231) 995-1760 or (800) 968-0011 (x 4256) (231) 995-1763 fax lin.benfield@arbor.edu

#### **Bachelor's Programs**

- Family Life Education
- Organizational Management (BSOM)
- Nursing

#### Western Michigan University

Contact: Kim Stevens 2200 Dendrinos Dr., Suite 201 (231) 995-1846 (231) 995-1789 fax kim.stevens@wmich.edu

#### Master's Program

• Counselor Education (Clinical Mental Health & School)

#### **Graduate Certificate Programs**

• Alcohol and Drug Abuse (SPADA)

# Extended Educational Services - Community & Continuing Education

# **Extended Educational Services**

#### www.nmc.edu/ees

(NMC University Center off Cass Road) 2200 Dendrinos Drive - North Wing, Traverse City, MI 49684 (231) 995-1700 (231) 995-1708 fax ees@nmc.edu Non-credit courses are held at various campus locations.

EES is the professional development, community and continuing education arm of NMC providing a broad array of learning options. No application is necessary. Each semester Learn for Life schedule highlights more than 250 courses that cover topics of interest for anyone age 3-100, including:

- Certificate Programs
- College for Kids
- LIFE Academy • Music and Audio
- Personal Enrichment
- Computer Skills Creative Arts
- Personal Growth and Wellness
- Culinary
- Renewable Energy
- Fitness and Recreation Small Business/Entrepreneur
- Language and Writing Professional Development

Complete Learn for Life course schedules are published three times a year and posted online. Sign up for courses online or by phone, fax, mail or in person.

# **Professional Development**

EES offers a variety of professional development courses including the latest in computer software training, small business development, customer service, real estate, human resources, grant writing, and managerial topics. Continuing Education Units (CEUs) can be awarded for many courses meeting requirements for professional development.

# College For Kids

Enrichment courses for preschool through high school students are offered year round. An extensive summer program provides a wide range of learning options including art, music, drama, science, the environment, technology, outdoor adventure, aviation, cooking, and writing. Week-long classes are offered in a 8-week summer program. Partial scholarships are available based on financial need.

# LIFE Academy - Learning Is ForEver

The LIFE Academy is a program of learning opportunities created with and for adults age 50+ consisting of mostly daytime, short-term courses. Learners choose from more than 45 options each semester across a broad spectrum of interests. Special events include monthly LIFE Lunch Forums and Campus Days in the spring and fall.

Adults age 62+ who live or own property in Grand Traverse County are eligible for a 20% reduction in tuition for both continuing education and academic credit courses.

# **Online Courses**

Over 200 non-credit online courses are offered throughout the year. Courses include instruction on web page design, computer software programs, test preparation, business topics, writing skills, and enrichment topics.

## **Certificate Programs**

Continuing Education Certificate programs include:

- Certified Nursing Assistant
- Computer Skills
- Small Business/Entrepreneur
- Northern Naturalist
- Personal Trainer ACE
- Logic Pro Apple Certification

Complete descriptions are available.

# **Scholarships**

A variety of partial scholarships are available.

# **Special Events**

- Campus Days (Spring and Fall)
- · Festival of Foods
- International Affairs Forums monthly lectures
- Monthly LIFE Lunch Forums
- Conferences
- Workshops/Seminars
- Writers Conference







**Student Services** 

# Student Services

# Admission

## www.nmc.edu/admissions

Tanis Building, (231) 995-1054

Admission is open to all high school graduates, or those who have satisfactorily completed the General Education Development (GED) test or individuals 18 years or older. NMC requires degree-seeking students to submit high school transcripts. If you have taken an ACT test these scores should be submitted for course placement at NMC.

Students with a high school GPA below 2.0, students with a GED certificate, or students with no ACT scores, or ACT scores below 18 in English and math and 19 in reading are required to complete the COMPASS placement test. See the COMPASS section of this catalog or go to **www.nmc.edu/compass.** 

Degree-seeking students transferring in from another college need to provide a transcript showing at least 12 completed credits with a 2.0 GPA or higher. Students transferring in who do not have 12 completed credits with a 2.0 GPA or higher need to meet the same admissions requirements as high school graduates or GED recipients.

# Applicants seeking degrees/certificates or planning to transfer to another college:

A student must be in a degree/certificate program to receive financial aid. Students under the age of 18 must obtain parental permission prior to registering for classes. (This excludes dual-enrolled and Early College students.)

- Submit an application at **www.nmc.edu** and a one-time application fee of \$20
- Request that an official high school transcript be sent to the Admissions Office
- If transferring from another institution, request an official college transcript be sent to the Admissions Office
- Attend Orientation

#### Applicants wishing to take classes for personal interest or with a high school Certificate of Completion will be non-degree seeking:

• Submit an application online at **www.nmc.edu** and a onetime application fee of \$20.

#### Application deadlines:

Apply as early as possible prior to the beginning of the semester. Applications are processed as they are received, with the upcoming semester given priority. Deadlines will be posted each semester for degree/certificate-seeking applicants.

## **Types of Admission**

#### **REGULAR ADMISSION**

• Degree or Certificate Admissions

For applicants who intend to complete an associate degree, to transfer or to complete a certificate program in an occupational specialty.

• Non-Degree Admissions For applicants who intend to pursue course work in an area of interest to gain skill or for enjoyment.

# CONDITIONAL ADMISSION

If you have below a 2.0 average GPA on your high school transcript, you may be admitted to NMC on a conditional basis.

#### DUAL-ENROLLED ADMISSION

For applicants who are enrolled in classes at NMC while still in high school. See page 27 for more details.

#### **GUEST STUDENT ADMISSIONS**

Applicants currently attending another Michigan college/ university may apply as a guest student at NMC. Guest students must submit a completed Michigan Uniform Undergraduate Guest Application. This application must be submitted for each semester a student plans to attend for a maximum of two semesters. After two semesters, a student must complete an NMC application for admission if they wish to continue to be enrolled at NMC

## **Transferring Credits** from Other Colleges

If you have credits from another college or university, request the registrar of that school send an official transcript to the NMC Admissions Office. Your credits will be evaluated and the transfer credit evaluation available on your Self Service account. You will receive credit from institutions recognized by Regional Institutional Accrediting Organizations for those college-level courses in which you received a 2.0/C or higher grade and which are similar to courses at NMC. The total number of credits will be recorded on your transcript. In certain circumstances, when applying to specific occupational programs, only the classes that apply to those programs may be evaluated. Only credits transfer, grades do not. If you attended a foreign institution, your transcript must be evaluated by an evaluation service for comparison to regionally-accredited institutions in the United States. Accrediting services recommended by NMC are Educational Credential Evaluators, Inc. www.ece.org or World Education Services www.wes.org



# **Home-Schooled Students**

The application process for home-school students nearly mirrors the application process for the "traditionally schooled" student. Home schooled students must supply:

- A high school transcript. This transcript can be from a home school curriculum agency, or can be parent (or instructor) generated. If the transcript is parent- or instructor-generated, we ask that it be notarized as an official document. The transcript should list courses completed and grades earned. A student may apply while their final coursework is still in progress, but we must receive a "final" transcript indicating date of graduation prior to attendance at NMC.
- An official ACT or SAT score report. Check with the ACT or SAT organizations for test dates and for information on how to have your scores sent to us.
  - ACT information is available at: www.act.org/aap
  - SAT information is available at: www.collegeboard.com

# **Dual Enrolled Applicants**

Dual enrollment at NMC is selective. High school students must qualify for dual enrollment and admission to NMC. To be considered for academic classes prospective dual enrolled students must do one of the following:

- Submit ACT reading score of 19 or higher and writing score of 18 or higher to NMC's Admissions Office for review, or
- If you also want to take a college class that requires proficiency in math, you will need an ACT score of at least 21 or better on the math placement test. This may qualify you for Intermediate Algebra or higher. All other math courses require COMPASS testing.
- Take NMC's COMPASS Placement Test. For information on testing, please call (231) 995-2134. After test scores are on file, students will receive an eligibility letter showing what classes they may be able to take and outlining additional steps in the dual enrollment process.

# Eligible dual enrolled students who would like to take academic classes must do the following:

- **1.** Complete the dual enrollment application with your high school counselor and obtain all required signatures.
- **2.** Send or bring the application to NMC's Admissions Office with the non-refundable \$20 application fee.
- 3. Attend orientation. At this time students will register for classes. (First-time dual enrollment students must attend an orientation.)
- **4.** Pay for your classes or present paperwork from your school if they are covering the tuition

# Admission to Limited Enrollment Programs

Health Occupations have special admissions requirements as outlined under the specific program in this catalog. The Great Lakes Maritime Academy (GLMA) also has special admission requirements. GLMA application packets are available online at **www.nmc.edu/maritime** or from the Office of Admissions at the Academy, Great Lakes Campus, 715 E. Front Street, (231) 995-1200.

# The Right to Appeal

In the event you are denied admission to an occupational program that has special admission requirements, you may appeal such matters to the Director of Admissions and subsequently to an admissions review committee for consideration.

# **Admission of Out-of-State Students**

Northwestern Michigan College welcomes out-of-state student admission applications. If you plan on visiting the Traverse City area please phone our Welcome Center at (231) 995-1135 for information regarding a campus tour.

## **International Students**

International Admissions (231) 995-1082

Northwestern Michigan College is authorized by law to enroll non-immigrant students and welcomes these applications. Prospective students are encouraged to apply online at **www.nmc.edu/admissions** - click "International Students."

#### INTERNATIONAL ADMISSIONS REQUIREMENTS

- An International Student is any non-immigrant in possession of or seeking a current F-1, M-1, or J-1 student Visa. The student must complete an NMC International Student Application including all supporting documentation. Completed applications are due June 15 for Fall semester and October 15 for Spring semester.
- The prospective international student must present official records, marked sheets, transcripts, diplomas and certificates from high schools and all other academic institutions for consideration before admission will be granted. This should include an official record of any postsecondary schooling the student has had in the United States. These records must show courses taken and grades earned, and must be translated into English if the original records are in another language. If a translation is supplied, it should be certified as accurate and correct by an appropriate public or school official, or sponsoring agency or government. The official record in the original language must also be included.
- The student must provide official test scores to prove adequate proficiency in the English language unless English is his or her native language. Admission may be granted to a student who has:

a. TOEFL score minimum: 61 IBT, 173 CBT, 500 PBT b. TOEIC Score minimum: 500

- c. IELTS Score minimum: 5.0
- The student must show proof of adequate financial resources for one year. Details of this requirement are available in the International Student Application.
- NMC requires international students to have health insurance coverage for the duration of their enrollment and prior to registration. Information about health insurance is included in the application.
- The student must attend an International Student Orientation at the beginning of the first semester of his or her enrollment at NMC in addition to attending a General Student Orientation. (continued)

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- Residence Hall housing is available on campus. Information can be found online at www.nmc.edu/housing NMC does not assist students in finding host families or housing in the area. Students must provide proof of housing arrangements prior to arrival in the United States.
- International students transferring to NMC must have their current international advisor complete the Transfer In Form.

#### INTERNATIONAL ACADEMIC REGULATIONS

- International students must carry no fewer than 12 credit hours per semester with a maximum of 3 online credits. Taking fewer than 12 credit hours per semester is considered a violation of the United States Citizenship and Immigration Services (USCIS) regulations. To avoid penalties, international students may not withdraw from any classes without the International Student Advisor's approval.
- Before international students may register for their first semester, they must take the COMPASS placement test and meet with an NMC academic advisor.
- If at the end of the first semester international students have successfully completed 12 credits, they may continue regular studies. If not, they must file for reinstatement with the USCIS and complete no less than 12 credits with a cumulative grade point average of 2.0 or higher in order to continue studies at NMC. International students who fail to meet this requirement are considered out of status and may be dismissed from the College.
- At NMC, all credits earned in remedial classes are included in the 12-credits-per-semester requirement.
- NMC considers international students' enrollment as their acceptance of the preceding policies. Any irregular academic or personal behavior will be brought before the Vice President of Enrollment Management and Student Services. The student may submit a written appeal of any decision that he or she believes to be unjust. This appeal may be made to the Vice President of Enrollment Management and Student Services.

#### INTERNATIONAL ENROLLMENT PROCEDURES

International students maintain their F-1 visa status if they:

- Successfully complete 12 credits per semester (Fall and Spring)
- Maintain no less than a 2.0 grade point average
- Make continuous progress toward the degree program listed on their I-20
- Pay all tuition and College bills when due
- Exhibit good citizenship

The I-20 form will stay in effect through the enrollment period. It will, however, need to be endorsed (signed) no more than five business days in advance of the departure date each time the student leaves the country.

#### Residency

Your tuition rate is determined by your residency during the admissions process. There are four classifications:

- **1. In-District:** Legal resident of Grand Traverse County
- **2. In-State:** Legal resident of Michigan outside of Grand Traverse County
- **3. Out-of-State:** Legal resident of a state other than Michigan
- **4.** International: Legal resident of a country other than the U.S.

Grand Traverse County property owners and their dependents are considered in-district and pay lower tuition because they also pay county property taxes which support NMC. (Exception: Maritime classes are based on credit hours only.) To change your residency, you must obtain a petition online or from the Records Office. In-state or Grand Traverse County **property owners** must provide a copy of the current property tax receipt. **Non-property owners** must reside at a permanent address in Michigan/Grand Traverse County for a minimum of six consecutive months taking 5 or fewer credits. In addition to the petition, the student must submit copies of the supporting documentation to the Records Office at least one week prior to the start of the main session. An authorized change in residency status for tuition assessment is not retroactive to any previous semester of enrollment at NMC.

Students under 25 years of age, whether or not they are claimed as dependents on their parents' previous year income tax return, should check for additional special requirements. Completing an "Information Change Form" will not change your residency unless you are leaving Grand Traverse County. If you have questions, contact the Records Office (231) 995-1049.

Legal residence for students is verified on a continuing basis. NMC sends letters to enrolled students each semester (Fall and Spring) with a "Forward and Address Correction Requested" label on the envelope. When discrepancies are found, a change is made in the student's address. Each semester all addresses and residency codes are compared/ verified for accuracy and updated where appropriate.



# **Advising Center**

www.nmc.edu/advising Osterlin Building, (231) 995-1040

Confused about your academic and career direction? The Advising Center staff can help you clarify your academic and career path and help you develop your pathway to success.

# **Academic Advising**

Academic advising at NMC is a shared responsibility between students and advisors. The Advising Center staff offers a full complement of advising services for students. First-year students will meet with an advisor during orientation, and are also required to meet with an academic advisor again during their first semester to review program requirements, career options, transfer possibilities, and course selections. Students are encouraged to stay connected to an advisor throughout their enrollment at NMC to ensure they are on the right track.

# **Career Advising**

Services are offered for assisting students in the career decision-making process and development of life/career goals. This typically is a multi-session process involving the assessment of personality characteristics, interests, values and strengths. This information is then connected to academic programs/career options.

In addition to these services, online, interactive resources are available online at **www.nmc.edu/advising** and a one-credit elective course, Career Exploration and Planning is offered.

# **Transfer Advising**

An extensive collection of online transfer resources is available to students planning to transfer to four-year universities in Michigan. Students who follow transfer guides and connect with one of our advisors throughout their stay at NMC will have good information for a smooth transfer. NMC also recommends that students personally contact the transfer institution they are considering for additional information.

# Bookstore

www.nmc.edu/bookstore West Hall, lower level (231) 995-1285

New, used and rental textbooks, computers, study aids, art/ drafting supplies, uniforms for special programs, computer software, NMC clothing and logo gifts, and snacks.

**Refund Policy:** Refunds will be given through the second week of the semester only. You are entitled to a full refund if you drop a class or withdraw from the college or your class has been cancelled. To receive a refund, you must provide the original cash register/financial aid receipt.

# Class Cancellations/ College Closure

# **Daily Class Cancellations**

Posted online at **www.nmc.edu/class-cancellations** and on campus video monitors, Monday-Friday. For weekend class cancellations, students should call their instructor's voice mail.

# **Delayed Openings or Closures**

College-wide delayed openings or closures will be reported to area radio and television stations, via email to all students, faculty and staff, and via text message to those who are subscribed to receive alerts on their cell phones. It will also be posted online at **www.nmc.edu** and recorded: (231) 995-1100.

# COMPASS Placement Testing

#### www.nmc.edu/compass

Osterlin Building, (231) 995-2134

Placement assessment is required of new students and will be used to place you into appropriate courses. COMPASS is the computerized test NMC uses to determine placement into your first classes.

The test has three sections: reading for comprehension, writing skills and math. It is not timed, and takes the average student about two hours to complete. ACT scores of 19 or higher in both math and reading and a 18 or higher in English may be used for course placement.

# Why COMPASS?

Your success matters to us. You'll be more successful at NMC and beyond when you start in the right classes. Your COMPASS test score will determine where you start in math and English at NMC, unless you are using qualifying ACT scores.

PLATO is an online resource that provides excellent review for COMPASS. For login information, please contact the Student Success Center at (231) 995-2134.

COMPASS testing is available daily at the Student Success Center in the Osterlin Building. You will need to bring photo identification, your NMC ID, and a calculator. Visit **www.act.org/compass** for sample questions.

A COMPASS resource manual is available for check-out from the Osterlin Library. In addition to the sample questions listed at the site above, the website **www.testprepreview.com** is suggested for review. Select COMPASS test on this site.

# **Computer Labs**

#### **Equipment and Locations**

Dell computers running Microsoft Windows 7 and the Microsoft Office Suite:

- Beckett Building, Room 214, (231) 995-1068
- Library Research Area, Osterlin Building, (231) 995-1540
- Parsons-Stulen, Room 206, (231) 995-2000
- Student Success Center, Osterlin Building, (231) 995-2134
- Zonta Library, University Center, (231) 995-1749

Apple Macintosh computers running MAC OS X and the Microsoft Office Suite:

• Beckett Building, Room 204, (231) 995-1564

• Student Success Center, Osterlin Building, (231) 995-2134

#### **Technology Support Services**

**Computer Services, Information, and Support** Lower Level Tanis Building, Area 51

Help Desk: (231) 995-3020 Enter a helpdesk ticket online at helpdesk.nmc.edu

# **Disability Support Services**

Osterlin building, (231) 995-1929 www.nmc.edu/disability-support

Support Services are available to students with documented disabilities and include classroom accommodations such as note-takers, books in alternate format, adaptive equipment and testing modifications (extended time and quiet space).

For additional information, please call (231) 995-1929 or (231) 995-1139. TTY call 711.



# **Student Financial Services**

#### www.nmc.edu/financial-aid

sfs@nmc.edu Tanis Building (231) 995-1035

The following information is subject to change at any time, without notice, due to changes in federal or state regulations or institutional policies. Please visit **www.nmc.edu/financial-aid** and **www.studentaid.ed.gov** for the most up-to-date information.

## **Financial Aid Philosophy**

Paying for college is a shared responsibility among the student, the family, and financial aid. Scholarships, grants, employment, and loans are available. Any or all of these may be combined in a "financial aid package" to help with educational costs. NMC is committed to working with students to obtain the financial aid for which they are eligible.

## **Financial Aid Consideration**

To be considered for the maximum amount of aid possible, all students should:

- 1. Complete an NMC Application for Admission
- **2.** Submit high school, General Education Development (GED) and college transcripts, and
- **3.** Complete the FAFSA (Free Application for Federal Student Aid) as soon as possible after January 1 of the year in which you are seeking aid. Applications received by April 1 will receive priority consideration.

Available aid includes:

#### FEDERAL (TITLE IV)

- **1.** Pell Grants
- 2. Supplemental Educational Opportunity Grants (FSEOG)
- 3. Work Study Program (FWS)
- 4. Direct Loan (DL) www.studentloans.gov
  - Subsidized and UnsubsidizedParent Loan (PLUS)
- 5. Iraq and Afghanistan Service Grant (IASG)

For more information about Title IV financial aid programs visit **www.studentaid.gov** 

#### STATE

- 1. Michigan Competitive Scholarship
- 2. Tuition Incentive Program (TIP)
- 3. Children of Veterans Tuition Grant
- 4. Police/Firefighter Survivor Tuition Grant

For more information about state of Michigan student aid, visit **www.michigan.gov/mistudentaid** 

#### INSTITUTIONAL/FOUNDATION (NMC)

1. Scholarships

#### OTHER

1. Alternative Private Loans

## General Eligibility Requirements for Federal Aid

To be eligible to receive federal student aid, a student must:

- Be a U.S. citizen or eligible non-citizen
- Have a valid Social Security number
- Comply with Selective Service registration, if required (see **www.sss.gov** for more information)
- Have a high school diploma or a General Education Development (GED) certificate before the first day of class
- Be enrolled or accepted for enrollment as a regular student working toward a degree or certificate in an eligible program
- Not owe a refund on a federal grant or be in default on a federal student loan
- Have financial need (except for unsubsidized Direct Loan and Parent PLUS Loans)
- Not have a drug conviction for an offense that occurred while you were receiving federal student aid
- Be making satisfactory academic progress
- Have not exhausted lifetime eligibility for Pell Grant and/or Federal loans

# **Applying for Federal Aid**

Individuals who plan to apply for federal aid must complete the Free Application for Federal Student Aid (FAFSA) and are encouraged to apply online at **www.fafsa.gov** It is advisable to submit the FAFSA as soon as possible after January 1 of each year to be eligible for NMC's priority consideration on April 1.

NMC will review the FAFSA results received directly from the federal processor and follow federal regulations in determining eligibility and awarding federal aid. Your assistance in forwarding all requested information in a timely manner will enable the staff to give you priority consideration for financial aid.

Students will be advised by e-mail to their NMC account concerning eligibility for federal aid. If your financial situation or your family's financial situation has recently changed because of death, separation or divorce, or loss of job or benefits, you should contact the Student Financial Services Office. Average aid processing time is six weeks (may be longer at the start of the semester).

Students need to access their NMC Self-Service account to accept their financial aid. This includes accepting your financial aid terms and conditions. **www.nmc.edu/self-service** 

Northwestern Michigan College does not participate in the federal Perkins loan program or the Teacher Education Assistance for College and Higher Education (TEACH) grant.

For complete information on federal aid programs visit **www.studentaid.gov** 

## **Applying for Institutional/Foundation Aid**

Northwestern Michigan College provides a large number of scholarships for students. Go to **www.nmc.edu/scholarships** for the most updated information.

As most scholarships are need-based, students are encouraged to complete the FAFSA. Individuals who wish to apply must meet all deadlines and requirements including satisfactory academic progress as defined in the NMC Satisfactory Academic Progress Policies for Financial Aid. The Satisfactory Academic Progress policy is online at **www.nmc.edu/sap** 

Institutional grants and scholarships have a priority date of April 1. Completed applications received after April 1 will be considered on a "first-come, first-served" basis.

NMC scholarship and grant eligibility criteria are primarily determined by the donor and/or NMC scholarship committee and based on financial need, scholastic ability, and/or other specific stipulations. You will be notified only if you have been awarded a scholarship.

# How Aid is Paid

Most types of financial assistance (federal or institutional) will be split between two semesters for disbursement, unless specified by the donor. Student accounts will be credited according to disbursement schedules set by the Student Financial Services Office for semesters which they are eligible. Grant and scholarship funds from all sources credit first to tuition and fees, unless the specific aid is targeted to other educational costs.

Generally, financial aid funds will be credited to a student's account based on the number of credit hours in which the student is enrolled on the census (freeze aid) date. After the census date, credit balances are paid within 14 days after the credit balance occurs. Please be aware that your financial aid award could change based on credit hour load at the time aid is paid. Students unsure of whether their change in credit hours will affect their financial aid should check with the Student Financial Services Office prior to dropping classes.

Federal Work-Study/Institutional Employment payments are paid bi-weekly directly to the student as a paycheck.

# **Enrollment Status**

With the exception of Pell grants, a student must enroll for six or more credit hours per semester to receive federal financial assistance. Pell grants may be prorated for less than 12 credits.



## **Work Study**

The student's primary purpose for being at NMC must be to further his or her education. Student employees are eligible to work 20 hours per week during the semester and 40 hours per week during break. Student employees must be enrolled at least half-time (6 credits Fall/Spring and 3 credits Summer) throughout each semester and be making satisfactory academic progress. Any student employee who is no longer enrolled at least half time at NMC must be terminated from employment.

Students seeking employment on campus should file for financial aid using the Free Application for Federal Student Aid (FAFSA) and apply for available positions at NMC online at **jobs.nmc.edu** 

# **Transfer Students**

Students who transfer to NMC from other postsecondary institutions shall be eligible for federal aid in accordance with established NMC guidelines. Hours transferred from any prior institution(s) will be counted in the maximum number of hours allowed for aid eligibility for the currently-sought degree or certificate. Prior student financial aid accumulation and Lifetime Pell Grant eligibility may affect a student's overall financial aid eligibility at NMC.

#### **Special Note:**

If you are transferring to NMC between the fall and spring semesters, please be aware that financial aid does not automatically transfer from one school to another. Contact the Financial Aid office as soon as you have made the decision to transfer so we can assist you with the transfer process.

# Satisfactory Academic Progress Requirements

#### INTRODUCTION

The Education Amendments of 1987 require that a student must be making "satisfactory progress" in his/her course of study to be eligible for aid. In order to satisfy this requirement and prevent abuse of the intentions of the federal aid programs, satisfactory progress guidelines must be adhered to by students who receive any type of Title IV federal aid (Pell, FSEOG, FWS, Direct Stafford Loan, Direct Parent (PLUS) Loan, IASG).

To be eligible for federally funded financial aid programs and most institutional awards at NMC, all students must meet the following qualitative and quantitative requirements for satisfactory academic progress (SAP).

These standards are for all students applying for assistance for any federal financial aid program administered by the NMC Student Financial Services office. Academic progress requirements for scholarships are defined by the respective donors and maintained in the NMC Student Financial Services or NMC Resource Development office.

#### FREQUENCY AND INTERVAL OF REVIEW

Satisfactory academic progress will be reviewed prior to the awarding of any federal financial aid. It will also be reviewed and monitored at the end of fall, spring and summer semesters, and prior to the disbursement of aid for the following semester.

#### ESTABLISHING INITIAL ELIGIBILITY

A student's past academic transcripts will be reviewed according to the following guidelines:

- **a.** Students who have never attended NMC will be considered in good standing with regard to minimum semester credits completed and minimum GPA requirements.
- **b.** Students who have previously attended NMC will have their past academic transcripts reviewed regardless of whether financial aid was received for previous attendance.
- **c.** Transfer credits from other institutions that apply to your current degree program will be considered in determining eligibility under the maximum time frame criteria.

#### MAINTAINING QUALITATIVE AND QUANTITATIVE ELIGIBILITY

- Minimum grade point average (GPA) requirements (Qualitative): All financial aid students must maintain a minimum 2.0 cumulative grade point average.
- Minimum completion factor required (Quantitative): All financial aid students must complete a minimum of 67% of the credits for which they registered. When calculating completion the following designations will be considered as non-completion of the class: Incompletes, audits, withdrawals, failures-to-attend, unsatisfactory, not-qualified, in-progress, zeros (0.0) and repeats

#### MAXIMUM QUANTITATIVE MEASURE

Once a student is close to the total hours required for their program, and prior to reaching the 150% maximum of credit hours, students will be required to complete a NMC Petition for Evaluation (PETE). View or download the evaluation form (PDF) at www.nmc.edu/financial-aid/forms and in the Student Financial Services office.

Credit hours accumulated under a previous major(s) at NMC or other postsecondary institution(s) shall be counted in the maximum number of hours allowed for aid eligibility if they apply to the currently sought degree or certificate. All of these credit hours are counted regardless if the student did or did not receive financial aid.

Extension of financial aid eligibility may be approved if the student submits a NMC Petition for Evaluation Appeal (PETA) to the Financial Aid Appeals Committee regarding a change in major.

If a student has already received a degree or certificate, or is changing majors, she/he will need to file a Petition for Evaluation Appeal of Federal Financial Aid. Only those courses that apply to the new program will be considered in the quantitative measure. View or download the appeal request form (PDF) at **www.nmc.edu/financial-aid/forms** 

Program Type	Credit Hours Required	Attempted Hours Allowed for Aid Eligibility
Certificate of Achievement Programs	16-63	24-95
Associate in Applied Science (AAS)	64	96
Associate in General Studies (AGS)	64	96
Associate Degree in Nursing (ADN)	72	108
Associate in Science and Arts (ASA)	64	96
Bachelor of Science in Maritime Technology	120-121	180-182

#### **OTHER FACTORS**

- **a.** Audit Classes registered for audit at the start of a semester will not be considered when determining semester award amounts or minimum credits completed. Classes taken for audit will not be considered as attempted credits toward the maximum time frame for completion. If a student changes their registration status after the start of a semester, it will have an adverse affect on Satisfactory Academic Progress.
- **b.** Remedial/Developmental Courses After a student has attempted 30 hours of remedial/developmental credit hours, he/she cannot receive financial aid for remedial/ developmental credit hours. From that point on, remedial/ developmental credit hours will count in his/her attempted hours but not in enrollment status or cost of attendance for financial aid purposes.

#### WARNING AND SUSPENSION

Financial aid warning and suspension apply only to a student's status for purposes of financial aid eligibility at NMC. This does not become part of the student's permanent record and is not transferable to other institutions. Please be aware, your financial aid status may differ from your academic status.

- **a. Warning** Students who fall below the qualitative or quantitative requirements, will be placed on a warning status for their next semester of enrollment. A student remains eligible to receive financial aid while on a warning status. If the minimum cumulative qualitative and quantitative requirements are met at the end of the warning period, the student will be removed from warning status and placed in good standing.
- **b.** Suspension If a student does not meet the requirements for maintaining eligibility at the end of the warning semester, eligibility for financial aid programs will most likely be suspended. Students who have reached or exceed the maximum time frame for completion will be placed on immediate financial aid suspension.

#### **REINSTATING AID ELIGIBILITY**

A student may regain eligibility for federal student aid if they successfully complete 6 credits at NMC in one semester with at least a 2.0 semester GPA at their own expense.

An appeals process is available to students who lose financial aid eligibility based on failure to meet cumulative qualitative or quantitative requirements or exceeding the 150 percent time frame. View or download the appeal request form (PDF) at www.nmc.edu/financial-aid/forms Along with the appeal request the student will need to review and provide information regarding their academic plan for financial aid. If the appeal is approved the student will be notified and reinstated on probationary status. A student is eligible to receive financial aid on probation. The student will need to meet the requirements of the academic plan for financial aid at the end of each payment period. If the student continues to meet the requirements of the academic plan for financial aid, they will remain on probation. If at the end of a payment period, the student fails to meet the requirements of the academic plan for financial aid, they will be suspended. If a student meets the cumulative qualitative (2.0 GPA) and quantitative (67% completion) requirements, they will be placed back in good standing.

#### WITHDRAWALS AND RETURN OF TITLE IV AID

According to federal regulations, colleges must determine the amount of federal student financial assistance a student earns if he or she completely withdraws, either officially or unofficially, from all classes. The date of a student's withdrawal from NMC will generally be the date the student officially withdraws from all their scheduled classes prior to the end of their scheduled period of enrollment.

However, the College may use an earlier last documented date of attendance at an academically related activity if this date more accurately reflects the student's withdrawal date than the date the student begins the school's withdrawal process or notifies the school of his or her intent to withdraw. When a student fails to officially withdraw from NMC, the withdrawal date will be assumed to be the mid-point of the semester or the last date of documented activity.

The amount of assistance that the student earned is determined on a prorated basis. That is, if the student completed 30% of the payment period, the student earned 30 percent of the assistance he/she was originally scheduled to receive. Once the student has completed more than 61 percent of the payment period, he/she is considered to have earned 100% of his /her federal assistance.

If NMC is required to repay any portion of a federal education loan, the student or parent borrower is responsible for repaying the funds to NMC. The student or parent borrower is responsible for the remainder of the loan in accordance with the terms of the Master Promissory Note.

If the student is responsible for returning grant funds, the student must make arrangements with NMC or the Department of Education to return the funds. Any amount that the student has to return is considered a grant overpayment. If a student withdraws, receives all 0.00 or a combination of both in any semester, the Student Financial Services Office is required to determine a last date of attendance and a refund calculation may apply.

The last date of attendance for that semester will be reported to the Department of Education and subsequent disbursements may be cancelled. Written examples of return of funds calculations and additional information are available in the Student Financial Services office upon request.

#### Loans

Students must have a FAFSA on file in order to receive any type of federal educational loan.

## SHORT-TERM LOANS

**Consortium Students** - NMC may provide a short-term loan to students who have completed a consortium agreement with certain colleges. The short-term loan can help cover a portion of their on-campus expenses (tuition, fees, and required books/supplies) provided they have remaining funding from their home institution. This loan is interest free provided it is repaid by the due date (usually within 30-60 days).

## LONG-TERM LOANS

## Federal Direct Loan Program

Students must be enrolled in at least six credits per semester for Federal Loan eligibility.

• Loan Period - Total loan funds will be disbursed over two (2) semesters or disbursed in two (2) disbursements if your loan period is for one semester only; meaning loans will pay after the 100% drop period, and then at the mid semester mark. If you are a First-Time Borrower, your disbursement will be 30 days after the semester starts and a round the mid-semester mark. Be advised that if you accept your maximum loan eligibility, it may be affected by the amount you borrowed at another institution. Total academic year loan limits cannot be exceeded. Total financial aid cannot exceed a student's Cost of Attendance (COA).

- Loan Proration Be aware loans may be prorated if you have less than one (1) semester remaining in your program of study. For example, if you have 11 credits left to complete, your loans will be prorated accordingly based on federal guidelines, this could cause your loan period to be for one (1) semester. See above: Loan Period.
- **150% Maximum Eligibility Period** Effective July 1, 2013 first-time borrowers are eligible for Federal Direct Subsidized Loans up to 150% of the published length of the student's academic program at the time they start receiving student loans. After the 150% maximum eligibility period a student may be eligible for Federal Direct Unsubsidized Loans up to the annual and maximum aggregate limits. This means that you have approximately three (3) years of Federal Direct Subsidized Loan Funds to use at a Two-Year Undergraduate College Level.



#### Stafford Loan Program www.studentloans.gov

- SubsidizedUnsubsidized
- Parent Loan for Undergraduate Students (PLUS) www.studentloans.gov

Parent(s) of a dependent student (who has filed a FAFSA) may borrow under this program for their child's educational expenses.

#### Alternative loans

Alternative loans are credit score-based. Students should use any Federal Direct Loan funds they are offered before applying for an alternative loan. Students should research many lenders to find out interest rates, fees, payment and enrollment requirements before choosing a lender. NMC cannot recommend the best lender for students to select.



## **Scholarships & Grants**

The first step to a scholarship is filing the Free Application for Federal Student Aid (FAFSA), available at **www.fafsa.gov** The FAFSA determines financial need. Many NMC scholarships require no additional applications.

All students must maintain Satisfactory Academic Progress (SAP) for Financial Aid to be eligible for NMC scholarships. Other eligibility criteria varies by scholarship.

Since criteria and availability of funds are subject to change. Visit **www.nmc.edu/scholarships** for the most updated scholarship and grant information.

#### **GOVERNMENT SPONSORED**

**Federal Pell Grant** - Unlike a loan, Pell grants do not have to be repaid. Pell grants are awarded usually to undergraduate students who have not earned a bachelor's or a professional degree (in some cases, however, a student enrolled in a postbaccalaureate teacher certification program might receive a Pell grant). Pell grants are considered a foundation of federal financial aid to which aid from other federal and nonfederal sources might be added.

Students will be allowed to receive the Pell grant for up to 12 full time semesters or the equivalent. Requires FAFSA.

# Federal Supplemental Educational Opportunity Grant -

For undergraduates with exceptional financial need. Pell grant recipients with the lowest EFCs will be the first to get FSEOGs. Like Pell Grants, FSEOGs don't have to be paid back. Requires FAFSA.

U.S. Maritime Administration Student Incentive

**Payments** - \$8,000 per year for four years are available to a select number of qualifying cadets in each entering class at the Great Lakes Maritime Academy. Details on the program are available through the GLMA.

**Michigan Competitive Scholarship** - Provides scholarships based on ACT scores and financial need. This award is tuition/fee restricted. Requires FAFSA.

**Michigan Native American Tuition Waiver** - May cover tuition for certified North American Indians (1/4 blood) who enroll in a public college or university and are a MI resident. Contact your tribal association for additional information.

**State of Michigan Tuition Incentive Program (TIP)** - Student eligibility is determined before high school graduation, and students should apply by Aug. 31 of the high school graduation year. This program will pay up to 24 semester credits (will not cover contact hours) per academic year of current in-district resident tuition rates up to a maximum of 80 semester credits or upon completion of an Associate degree, whichever comes first. Students must initiate benefits within four years of high school graduation or GED completion.

#### INSTITUTIONAL SCHOLARSHIPS

Academic Area Merit Scholarships - Provide up to \$3,000 per academic year to selected second-year students. Application and selection are made through each academic area during Spring Semester for an award for the next academic year. Details of the application process and eligibility requirements are available in each academic area office. Application required.

Adopt-a-Student Grants - Awarded to selected students who are residents of Antrim, Benzie, Grand Traverse, Kalkaska, Leelanau or Wexford County. The amounts of the grants vary. Adopt-a-Student Grants are awarded based on financial need and require a cumulative minimum 2.5 grade point average.

**Commitment Scholarships** - Awarded to students from school districts in NMC's service area selected in eighth grade by their principals and counselors. These academically promising students with financial need are encouraged to complete high school and attend NMC with scholarship support. Recipients must commit to satisfactory academic progress, effort and citizenship. Upon high school graduation, students who have met all requirements receive scholarships. In order to receive this scholarship the student must apply for financial aid using the FAFSA. If a Commitment award student is eligible for other gift aid, those awards will be applied first toward the student's tuition and fees. Commitment scholarships are for tuition and fees only. For more information, contact NMC Outreach Services at (231) 995-2525.

**Founder's Scholarship** - Awarded each spring to academically superior seniors from the NMC service area high schools. A 3.9 GPA is required, along with a recommendation from the school's principal or counselor. The number of scholarships and funding may vary each year. Founder's Scholarship recipients must maintain a 3.5 GPA as a full-time (12 or more credits) to remain eligible. For applications and more information contact NMC's Admission office at (231) 995-1054.

**Honors Scholarships** - Awarded by the Honors Scholarship Committee. Scholarships up to \$2,000 each are awarded to selected students. Candidates must have earned a minimum 20 semester credit hours at NMC with at least a 3.5 grade point average and three credit hours in the Honors Program. For application process details and eligibility requirements: www.nmc.edu/honors - (231) 995-1040. Application required.

**Occupational Programs Grants** - A limited number of awards for students enrolled in approved occupational programs and who demonstrate financial need. It may be used toward the cost of tuition, fees, required books/supplies, transportation and/or daycare. Application required.

**Presidential Scholarships** - Awarded each spring to ademically superior seniors from the NMC service area high schools. A 3.75 GPA is required, along with a recommendation from the school's principal or counselor. The number of scholarships and funding may vary each year. Presidential scholarship receipients must maintain a 3.25 grade point average as a full-time student (12 or more credits) to remain eligible. For applications and more information, contact NMC's Admissions Office at (231) 995-1054.

**SGA Child Care Grant** - The NMC Student Government Association provides funding to assist with the cost of child care while students are attending class. Apply using a separate application available at **www.nmc.edu/scholarships**
#### **Tuition, Billing & Fees**

Tuition and fees are established and reviewed by the Board of Trustees on an annual basis and are subject to change without notice. Visit www.nmc.edu/tuition for most current rates.

You may pay any amount at any time prior to the due date, but the balance must be paid by 5 p.m. on the due dates listed for each semester on **www.nmc.edu/tuition** and also on the registration screen on NMC Self-Service. Failure to pay on time may or may not result in your enrollment being cancelled. Drop any classes you don't plan to attend. After payment due date, tuition and fees are due at the time of registration.

Payment can be made on NMC Self-Service with a debit card or electronic check (transfer from your bank account). Credit cards are also accepted, but are subject to a convenience fee charged by the credit card processor. Checks can be mailed and checks or cash are accepted in person at the Student Financial Services Office. For updated payment information visit **www.nmc.edu/payment-options** 

**Note:** If you decide not to attend, you must officially withdraw from your classes or you will be liable for tuition and fees. In the event that your check or electronic transfer is returned unpaid for non-sufficient or uncollected funds, you will be charged a \$25 NSF fee. An NSF charge may affect your enrollment.

#### BILLING

Tuition charges are based on contact hours with the instructor. Exceptions are MDK, MNG, MNS, Applied Music, Ensembles and private lessons. The tuition charge is the contact hour multiplied by your tuition rate plus any applicable fees as shown below.

#### FEES

**General Fee:** .......\$11/contact hour This fee provides partial support for the cost of orientation, placement, career testing, Student Government Association, and other student services and activities. *Note: The general fee charge for maritime classes only is based on credit hours, not contact hours.*  **Health Fee:**.....\$24/semester The fee is paid in Fall and Spring semesters by all students taking 6 or more contact hours and includes services of a nurse practitioner, RN, medical assistant, doctor, and reduced fees for some medications and lab tests. (Refundable if student withdraws from all courses during the 100% refund period, nonrefundable thereafter.) Students who are enrolled for less than 6 hours or University Center students may pay a \$40/semester health fee to obtain services. Call (231) 995-1255 for more information.

**Maritime Technology Fee:**.....\$500/semester This fee is paid in Fall and Spring semesters.

**Technology Fee:** ...... \$8/contact hour Contributes to the availability and maintenance of technology for classroom and student use. (Excludes Maritime, Culinary, and Nursing program courses.)

#### Apartments

Rent is paid monthly and due the first day of the month. Late payments may result in a late fee.

#### **Residence Hall**

Residence hall fees for the semester are due on the published semester payment due date for tuition, fees. For updated payment information visit **www.nmc.edu/payment-options** 

#### **BILLING & FINANCIAL OBLIGATIONS**

It is your responsibility to monitor your student account balance on **www.nmc.edu/self-service** and pay any charges by applicable due dates. Paper bills are not mailed to students. Email notices are sent to your NMC email periodically to direct you to your account statement. In case of errors or questions about your bill, contact Student Financial Services right away. Non-payment can result in collection costs added to your outstanding balance and will be your responsibility to pay. You will not be able to enroll in future semesters until a past due balance is paid.

#### Note to students who expect to receive financial aid:

Financial aid should be arranged well in advance of due dates. Third party authorizations should be received two weeks before payment due dates. All charges in excess of your anticipated financial aid and/or third party authorizations must be paid by the designated due date.

Manage your enrollment: If you decide not to attend you must officially drop your classes before the 100% Refund Date listed for each class on your student schedule.

#### REFUND

Students who officially drop a class by the 100% Refund Date for that class will receive a credit to their account for all tuition and fees except the non-refundable Registration Fee. The schedule of 100% Refund Dates for all sessions is published on **www.nmc.edu/records** There are no refunds after the 100% date.

#### **REFUND OF CREDIT BALANCES**

Student account credit balances are refunded weekly. The fastest way to receive a refund is to sign up for direct deposit at **www.nmc.edu/self-service** 

If there is no direct deposit profile on record, a check will be mailed to the primary address on the students record. It is your responsibility to keep your address updated by notifying the Records and Registration Office of changes. If charges were paid with a credit card, refunds will be credited back to the card used.

# Graduation

www.nmc.edu/records

#### **Applying for Graduation**

Graduation from NMC signifies that you have achieved the educational objectives of the curriculum. You must complete all degree requirements and achieve an overall grade point average of 2.0. One semester before you anticipate completing the requirements for your degree or certificate program, fill out an Application for Degree or Certificate online. You may also pick up a form at the Records and Registration Office. A graduation commencement ceremony is held once a year in May. Students who graduated the previous December and those applying to graduate in May (spring semester) or August (summer semester) are eligible to participate. Applications for the spring or summer semesters must be submitted to the Records Office no later than March 31 and a degree audit email confirming graduation must be received to participate in commencement. Contact the NMC Bookstore in February to order cap and gown.

#### **Graduation with Honors**

#### www.nmc.edu/honors

Students who have completed all the requirements for their **degree** and have achieved an overall grade point average of 3.5 or above will graduate with honors in one of these categories:

**3.50 - 3.75** = With Honors **3.76 - 3.90** = With High Honors **3.91 - 4.00** = With Highest Honors

Graduates who also completed 16 or more credits in designated honors courses with a 3.5 or higher overall grade point average will also have noted on the transcript "Honors Program Graduate."

Students who have completed all the requirements for their **certificate** and have achieved an overall grade point average of 3.5 or above will graduate with "Outstanding Performance."



#### **Honors Convocation**

At the close of the academic year, NMC holds its annual Honors Convocation to recognize outstanding students. This ceremony for exemplary students and their families is sponsored by the NMC Honors Office and NMC faculty and provides the opportunity to present many scholarships and awards.

#### **Catalog of Record**

When you enroll for academic credit at NMC, your graduation requirements are governed by the catalog in effect at the time of enrollment. This changes:

- **1.** If you are not enrolled for three or more consecutive semesters or
- **2.** If the catalog is revised (print or web) and you wish to follow the newer catalog, or
- **3.** If you change your program of study, you would be governed by the catalog in effect when the change is made.
- **4.** If the college determines that it is necessary to change the program of study requirements and such changes require the student to adopt these requirements rather than remain with the initial program requirements.

The college catalog is intended to provide students, pro spective students, and families with written information regarding the different programs, degrees, courses, and student services offered at NMC.

Although, the college endeavors to provide current information in the college catalog at the time of publication, it may be necessary for the college to revise the current catalog to address programmatic needs. Therefore, the college has the right to change the contents of the catalog at any time without notice, and because the catalog is for informational purposes only, it does not establish any contractual relationship with the student.

Thus, it may become necessary for students within a program of study to meet new requirements that were not in force at the time of their original admission to the college.

If you do not enroll for 3 or more consecutive semesters, you will be governed by the catalog in effect when you re-enroll.



# **Health Services**

#### www.nmc.edu/health-services

Biederman Bldg, room 106, (231) 995-1255

A family nurse practitioner is on duty Monday through Friday, 9 a.m. to 4 p.m., during the fall and spring semesters. A doctor is available by appointment. Referrals to campus and community resources are made if appropriate. Services include but are not limited to:

- Treatment of illness and injuries
- Academic/sports/job physicals
- Sexually Transmitted Infection testing and treatment
- Allergy injections
- Immunizations
- Gynecological exams & contraception
- Tuberculosis testing
- Health information and counseling
- Laboratory testing onsite
- Nutrition advice
- Limited pharmacy

The health services fee paid by all students taking six or more credits covers the services of an nurse practitioner and doctor, over the counter medications and a reduced fee for some lab tests. In case of illness or injury requiring hospitalization, the use of outpatient facilities, or private physicians' visits, students are responsible for payment through personal insurance coverage or direct payment. All medical records are confidential and are kept for ten years from date of last visit.

#### **Health & Accident Insurance**

All students are eligible to enroll in a low-cost health insurance policy specifically for college students. Information and claim forms are available fall and spring semesters. International students are required to have medical insurance to attend NMC. This insurance fulfills this requirement. For more information go to **www.sas-mn.com** 

# Housing

#### www.nmc.edu/housing

#### **Residence halls**

East Hall, (231) 995-1400

Close, convenient, affordable... fun! NMC's East Hall offers more than 200 students an opportunity to live in a supportive, alcohol- and drug-free community. More than just a place to eat and sleep, East Hall provides educational and social activities to promote your personal and professional development; in additional to making new friends.

#### ROOMS

Rooms are in suite arrangements - two rooms connected by a bathroom to accommodate four students. Each room has two beds, two desks with chairs and closets with drawer space. Single or double occupancy is available. Free parking, utilities, basic cable service and wireless Internet service are included. Each wing is equipped with a laundry room with washers and dryers. Other amenities include 24/7 security and front desk staffing, one resident adviser per floor, free access to NMC's Health & Fitness Center and Wii, Play Station 3 and sporting equipment available for check out.

Within East Hall you can choose from the following specialized learning communities:

- Leadership and Academic floor
- Co-ed or single-gender floors
- Maritime and Culinary Arts floors

#### MEALS

The NMC Food Court in neighboring West Hall offers hot breakfasts, lunches and dinners plus a soup, salad and deli bar. The Northwest Grind coffee shop and convenience store offers a menu of ready-made sandwiches, wraps, snacks and drinks.

A range of pre-paid meal plans allow you to choose what works for you. Meal plans are available to all faculty, staff and students, not only residence hall students. For more information visit **www.nmcdining.com** or call (231) 995-1678.

#### ACTIVITIES

The Residence Hall Council and Resident Assistant staff plan a variety of events for residents. If you like to make things happen, get involved with the Residence Hall Council.

#### TERMS AND CONDITIONS OF OCCUPANCY

The NMC Residence Life Contract contains guidelines for residence hall living and is available to answer all your questions about occupancy, room assignments, and payment.

#### **RESIDENCE HALL HANDBOOK**

Complete information about living in the residence hall is contained in the Residence Hall Handbook and Residence Life Contract. including such topics as:

- Room assignments, guests, changes, repairs and occupancy during breaks
- Deposit, charge periods, refund schedule and financial penalty
- Food service, meal options, furniture, electrical appliances, pets
- Rules and regulations, dismissals and contract appeals
- Safety procedures, fire/emergency evacuations
- Fire alarms, firearms/weapons
- Alcohol/Drug policy

#### **RESIDENCE HALL ALCOHOL & DRUG POLICY**

The manufacture, use or sale of alcohol, inhalants, and other drugs are prohibited in the residence hall and adjacent areas, including the athletic fields and parking lots. Alcohol containers and drug paraphernalia are also prohibited. These items will be confiscated by the Residence Life staff when found. The residence hall is not a haven from the law. If a local, state or federal law has been violated, a law enforcement agency will be called. Similar guidelines apply for all campus buildings and grounds. A violation of the Alcohol and Drug policy may result in immediate dismissal from the residence hall, suspension and/or expulsion from Northwestern Michigan College. This may occur on the first infraction of the Alcohol and Drug policy.

The complete policy and procedures are available in the Residence Life Contract, Residence Hall Code of Conduct within the Student Rights & Responsibilities handbook at **www.nmc.edu/policies** 

#### **Campus Apartments**

West Hall, (231) 995-1119

NMC has two-bedroom and one-bedroom on-campus apartments that are ideal for students 21 years of age and older. All apartments are non-smoking and pet-free. We are happy to rent to students with families.

Our apartments equipped with major kitchen appliances but otherwise unfurnished. Basic utilities are included in the rent. There are laundry facilities in the basement of each of the three apartment buildings, all located on the east end of campus. Assigned parking is available for tenants and guests.

# **Intramural Sports/Recreation**

Rajkovich Physical Education Bldg, (231) 995-1198

Intramural sports are a series of leagues formed to provide fun competition between NMC students. Fall traditionally means co-ed kickball, co-ed softball and flag-football games. During the winter, leagues move inside for floor hockey, co-ed dodgeball, co-ed indoor soccer and co-ed basketball. After spring break is co-ed volleyball.

Open Recreation hours are scheduled throughout the year in the gymnasium for pick-up games of basketball, volleyball, dodgeball, and indoor soccer. Outdoor courts are available for basketball and sand volleyball. A frisbee/disc golf course surrounds East Hall, Fine Arts, and Physical Education Buildings.

#### **Fitness Center**

NMC's Fitness Center offers fitness circuit conditioning to students and community members, promoting cardiovascular fitness, strength, flexibility, and weight control. The Center features universal weight machines, exercise bicycles, variable speed escalator treadmills, elliptical trainers, and stair climber machines. To use the Fitness Center, you can either register for the fitness circuit course or purchase a membership and attend the orientation session for training guidelines. (231) 995-1379

# Library

#### www.nmc.edu/library

Osterlin Building, (231) 995-1060

Find the quality information you need to succeed in college. Osterlin Library offers the resources and services you will need to complete your assignments: printed books and magazines, online databases, 50,000+ ebooks available from anywhere, study space, computers, copy machine. Friendly, professional librarians are available to help.

Reference	(231) 995-1540
Text Reference	
Service	
Email	librarv@mail.nmc.edu

# **Math Center**

www.nmc.edu/tutoring Tanis Building, Room 53 (231) 995-1138

The Tutoring Center offers drop-in math assistance for any student enrolled in any NMC math course. Center hours are available in the Math Center, in the Tutoring Center (Osterlin 152) or online at **www.nmc.edu/tutoring** 

# **Orientation for New Students**

#### www.nmc.edu/orientation

Office of Student Life, West Hall, (231) 995-1118

When you receive your acceptance letter to NMC, you also receive information about the Orientation and Registration program designed to acquaint new students with campus and to plan for the best schedule of classes to ensure success at NMC.

Orientation and registration for new students is a convenient one-stop process. You will have an opportunity to discuss your COMPASS placement test scores one-on-one with an advisor, transfer possibilities, and other pertinent course information. After selecting the best individual schedule, students then register for classes.



# **Outreach Services**

#### www.nmc.edu/outreach-services West Hall, lower level, (231) 995-2524

The three arms of Outreach Services prepare and support NMC students with opportunities for academic growth, skill enrichment and international awareness.

#### International Services

Seeking to prepare students with a foundation to create a broader understanding of the world in which we live, International Services include:

#### Global Endorsement

Beginning in fall 2014, NMC will offer a Global Endorsement on the college transcript for students who have acquired a minimum of 100 Global Endorsement points prior to graduation. Depending on one's degree, points may be earned in a variety of ways, but must be made up of a minimum number in each of the three following categories: Academic Coursework, Global Experience and International Events. Visit the Outreach Services web page for complete details on the requirements needed to complete the endorsement.

#### Study abroad

Short-term opportunities in multiple destinations affiliated with various academic programs. Check online for current opportunities.

#### Global events on campus

International Affairs Forum lectures, Dennos Museum Center concerts and exhibits and more. Current events are posted online.

#### **Military Services / Veterans**

NMC is listed in the top 15 percent of schools nationwide that deliver the best experience to current and former military students. Military Services provides veterans, current military personnel, and their families with the resources, support and advocacy needed to succeed in higher education, including:

- Personalized service to each military-related individual while enrolled at NMC
- Help navigating and understanding the Department of Veterans Affairs educational benefits, financial aid and college enrollment processes

NMC also participates in DSST, CLEP, Salute, Yellow Ribbon and GI Bill and is a member of the Student Veterans of America. See page 42 for more information.

#### **High School Services**

In partnership with area high schools, qualified students may earn transferable college credits and obtain degree completion. There are three ways to earn college credits:

#### Dual Enrollment

High school students are enrolled in college courses at Northwestern Michigan College. The college course may be used for credit at both the high school and college level. See the Admissions section, page 26, for more information.

#### Early College

A program in which high school students within the Grand Traverse region may earn college credits by completing course work at their home high schools, the Traverse Bay Area Career-Tech Center and at Northwestern Michigan College, via online and blended learning environments.

• Direct Credit/Concurrent Enrollment College classes offered at a high school during the regular school day, taught by credentialed college instructors.

# Parking

#### www.nmc.edu/parking

Campus Safety Office, West Hall, (231) 995-2351

All NMC students, faculty and staff must display a valid parking permit to park in main campus lots during fall and spring semesters. No NMC permit is required on weekends or summer semester, Enforcement of parking rules and regulations will be by the City of Traverse City and Northwestern Michigan College Campus Security.

Permits and a copy of the NMC Parking Policy are available at Student Financial Services and the NMC Welcome Center. Guest permits are available at Student Financial Services, the Admissions Office, or the NMC Welcome Center.

# **Personal Counseling**

#### www.nmc.edu/counseling

Office of Student Life, West Hall, (231) 995-1118

Professional counseling services meet a full spectrum of personal needs. No fees are charged for counseling services. Our staff of licensed professional counselors can assist with crisis intervention and mental health referrals when necessary. All personal counseling is on a short-term basis with continuing support available from area agencies. Our services are designed to help students resolve personal difficulties and acquire the skills, attitudes, and abilities that will enable them to take full advantage of their college experience.



**Student Services** 

# Phi Theta Kappa

Phi Theta Kappa is the internationally recognized honor society for two-year institutions of higher education. Admission is by invitation and is based on completion of 12 semester credit hours toward a degree with at least a 3.5 GPA. The hallmarks of the society are scholarship, leadership, service and fellowship. Phi Theta Kappans are involved in many activities centered around these hallmarks and their work culminates in an Honors in Action project designed by the chapter members and officers. There are opportunities for travel; three regional conferences in state and the annual conference held each spring.

Alpha Rho Pi, NMC's chapter of Phi Theta Kappa, was recognized as the Most Distinguished Chapter in the Michigan Region in 2012 and in the top 40 chapters in the world based on their entries in the annual Hallmark Awards competition. There are no obligations with membership. Some join solely for the recognition on their transcript and resume. However, officers and members welcome your involvement.

Phi Theta Kappa members wear a gold stole and tassel with their cap and gown at commencement in recognition of their academic achievement. More information: (231) 995-1360.

# **Records & Registration**

#### www.nmc.edu/records

Tanis Building, (231) 995-1049

The Records & Registration Office assists students with registration, transcripts, grades, enrollment verification, residency information, address changes, Veterans Affairs information, degree audits, graduation and prior credit opportunities.

#### Registration

Registration begins several months before classes start and continues on a daily basis until the start of the class session. There are many sessions: early sessions, 15-week sessions (the main session), late sessions. The session dates are available online at **www.nmc.edu/records** under Important Dates.

The first days of registration will be online only. Registration start times will be assigned based on the student's number of earned credit hours. After the initial assigned registration period has ended, all students may register online or in the Records & Registration Office.

Once the session has begun, registration may no longer be allowed or may require special approval from the departments.

## **Student Government**

#### www.nmc.edu/student-services

Office of Student Life, West Hall, lower level, (231) 995-1118

The NMC Student Government Association represents the student body. Full or part-time students are eligible to become a SGA representative. A student can become a representative three ways: through a signature process, appointment by an academic department, or by election. SGA is funded by the student activity fee and is responsible for providing a program of activities and events. SGA members meet weekly and represent the student body on several college committees.

## Student Life

www.nmc.edu/student-services

Office of Student Life, West Hall, lower level, (231) 995-1118

#### **Student Organizations**

The Department of Student Life strives to create an active and meaningful community for students. It promotes learning, cultural and ethnic awareness on campus by organizing student groups, hosting speakers, and co-sponsoring events in the community that include all students, staff and faculty. View Student Groups list at **www.nmc.edu/student-services** then click Student Life > Student Groups.

Want to start a new student organization? The Student Life Office can help you access facilities and outdoor space for activities and meetings. Your organization can apply for funding assistance to host events or travel to conferences. To form a new group you need to:

- 1. Complete an application available in Student Life office
- 2. Recruit a faculty or staff advisor

#### **Student Media Opportunities**

#### **NMC Magazine**

www.nmc.edu/nmcmagazine

East Hall, lower level, (231) 995-1252

Serving on the magazine staff offers art, literary and design students exciting opportunities to learn about publishing and to express their creativity. The magazine is published two or three times a year in print, interactive DVD, and/or website versions. The magazine contains essays, poetry, short stories, illustration, photography, graphic design and other visual communication by NMC students and staff. Themed issues are conceived, edited and published by student volunteers, with honors credits optional.

#### White Pine Press www.whitepinepress.org

West Hall, Faculty Advisor: (231) 995-1347

This award-winning student newspaper provides the best opportunity in northwest lower Michigan for students to gain hand-on experience with the various roles in a news organization, including: news-writing, photography, graphic design, illustration, or advertising sales. The White Pine Press publishes bi-weekly, with several paid positions. This experience could lead to internships with local news organizations.

#### WNMC Radio: 90.7 FM www.wnmc.org

West Hall, lower level, (231) 995-2562

Interested in radio broadcasting? WNMC-FM is a volunteer radio station that invites students and community members to take part in both on-air and production opportunities. Technical training is provided for all volunteers. Call for additional information and to arrange a tour of this facility.

# **Student Success Center**

#### www.nmc.edu/studentsuccesscenter Osterlin Building, (231) 995-2134

The Student Success Center provides opportunities to support students learning in and out of the classroom. Whether you are challenged by technology, need help formatting a paper, utilizing your Self-Service account, taking a make-up quiz or test, or just need a listening ear, come meet with a Student Success coach! The Center is open 70 hours per week.

#### ACADEMIC SKILLS IMPROVEMENT

- PLATO skill-building in most academic areas
- Textbook software support
- Student success strategies, including study skills and time management

#### CAREER COACH

- Resume and cover letter tips and review
- Interview preparation

#### **COMPUTER APPLICATIONS**

- Specialty software such as MS Office Applications, Photoshop, nutrition analysis, dental assisting
- Multiple word processing programs
- Career and scholarship exploration software

#### **TEST PROCTORING**

• Many faculty offer quizzes and exams here. Bring photo ID.

# Tutoring

#### www.nmc.edu/tutoring

Osterlin Building, room 152, (231) 995-1138

Any student who is experiencing academic difficulties in a NMC class can request free tutoring. Many additional supplemental course resources are available in the Tutoring office and online at https://elearn.nmc.edu/



# Veterans

#### www.nmc.edu/veterans

Military and Veteran Services, West Hall, (231) 995-2526 VA Certifying Official, Tanis Building, (231) 995-1057

Military and Veteran Services will provide veterans, current military personnel, and their families with the resources, support and advocacy needed to succeed in higher education. Military Advanced Education and GI Jobs/Military Friendly Schools have named NMC as one of the top military-friendly schools nationwide for 2014.

#### **Tuition and Fees**

Disabled veterans using the Vocational Rehabilitation benefits approved under Chapter 31 are given a waiver for tuition and fees, books, and approved supply expenses.

#### **Educational Benefits**

NMC's Outreach Services assists veterans in exploring educational benefits, in preparing requests for benefits, and provides certifications of enrollment. The regional office in St. Louis, Missouri determines veterans' educational benefits. There are currently five active categories of benefit programs under which veterans and eligible dependents are classified:

Chapter 30...... Montgomery G.I. Bill Chapter 31 ...... VA Vocational Rehabilitation Chapter 33...... Post - 9/11 GI Bill Chapter 35...... Eligible Dependents and Survivors Chapter 1606....... Reservists - Montgomery G.I. Bill

#### **Pre-enrollment Checklist** MILITARY & VETERAN SERVICES CHECKLIST FOR SUCCESS

- **1.** Meet with your Military Services Point of Contact (POC). Call Scott Herzberg: (231) 995-2526
- **2.** Apply for admission to NMC: nmc.edu/apply Select the military application option and your \$20 application fee will be waived.
- **3.** Apply for Veterans Education Benefits: va.gov, complete Veterans On-Line Application (VONAPP) and allow 8-10 weeks for processing.
- 4. Register with eBenefits: www.ebenefits.va.gov
- 5. Request official transcripts be sent to NMC Admissions Office (High School, GED, and/or any accredited colleges): 1701 E. Front St., Traverse City, MI 49686 Army, Navy, Marines, and Coast Guard military transcripts can be acquired through the Joint Service Transcript (JST) at http://jst.doded.mil Air Force military transcripts can be acquired through the Community College of the Air Force at http://www.au.af.mil/au/barnes/ccaf/transcripts.asp
- **6.** Apply for FAFSA (Free Application for Federal Student Aid). Even if you are covered by military benefits, this could open up other scholarship opportunities and financial assistance **www.pin.ed.gov** (continued)

- **7.** Apply for FAFSA (Free Application for Federal Student Aid): **www.fafsa.ed.gov**
- 8. New students are required to complete the COMPASS Placement assessment for reading, writing, and math. If you have credits from another institution, speak with your NMC POC. Info: www.nmc.edu/compass
- **9.** Sign up for New Student Orientation: nmc.edu/orientation, we offer a specific orientation for veterans. You will meet with an advisor and register for classes at orientation.
- **10.** Turn in paperwork to our Certifying Official(s):
  - VA benefits eligibility letter
  - Copy of your NMC class schedule
- Be sure to check your NMC e-mail often for important financial aid and registration information. www.nmc.edu/myNMC
- 12. Join the NMC Student Veterans of America student group
- Purchase books and get ready to start classes. Welcome to NMC! Outreach Services (offices in the lower level of West Hall) 1701 East Front St., Traverse City, MI 49686

#### Veteran Responsibilities (once enrolled)

- 1. Register for classes early. Certification can only be granted towards those courses required to satisfy degree requirements as indicated on VA form 1990, 1995, or 5490.
- 2. In order to receive educational benefits in a timely manner you must provide a copy of your schedule of courses each semester to the NMC Veterans Office before certification can be sent to the Regional Processing Office, St. Louis, MO.
- **3.** Monthly Verification Veteran students who receive benefits under Chapter 30, and 1606 must verify their enrollment monthly to insure prompt payment of their VA benefits. The earliest a student can self-certify is the last day of the month either at **www.gibill.va.gov** or by phone: (877) 823-2378. Select "certify your attendance" from the "Information for Benefit Recipients" menu.
- **4.** Report changes in address, phone number, number of dependents, and changes regarding eligibility to the NMC Certifying Official office immediately.
- 5. Promptly inform the Certifying Official of any changes in your enrollment that would affect your benefits or program. If you reduce your course load, fail to attend, or withdraw from all classes, benefits could possibly be reduced or discontinued from the beginning of the semester.
- **6.** Benefits can be paid for courses you are currently taking and that are required for your degree program.
- 7. Veterans and other eligible persons receiving educational benefits must conform to the College Regulations and Standards of Progress as specified by NMC. These Standards of Progress include academic achievement (maintain a 2.0 GPA) and attendance as well as standards of conduct.
- **8.** A report will be made to the VA if unsatisfactory progress is made which may result in termination of VA benefits. A reinstatement of benefits may be possible only after the cause for unsatisfactory progress has been removed and there is a reasonable likelihood of academic success.

# **Welcome Center**

Lobby of Health and Science Building, (231) 995-1135

Parking permits, campus tours, information, directions, lost and found.

# Writing and Reading Center

#### www.nmc.edu/writingcenter

Scholars Hall, Room 221, (231) 995-1189

When students visit the Writing and Reading Center, peer tutors, or "Readers," carefully read their papers and analyze their content, organization, mechanics and evidence. Students conference with the Reader to exchange ideas about writing in a more effective manner and receive a summary of the strengths of their papers and suggestions on what they might do to improve it. In addition, they can talk with someone about critical reading strategies for any of their classes. Readers are students from all areas of study who have had success in writing. Writing and Reading Center services are free.

# NMC. Find it here.



# Northwestern Michigan College 2014-2015 Catalog





**Program Information** 

# Charting Your Course of Study

#### Decide on career goals and course of study

- Determine what degree your desired career requires on the following pages.
- **Review your options with your advisor.**

#### **Review specific degree requirements**

- □ Understand what is required for your degree or certificate.
- Review English and Math competency, Group 1 courses, electives, pre-requisite courses, grade point average and credit requirements.

#### **Choose your Group 1 courses**

- Follow the Guidelines for Group 1 courses in Communications, Humanities, Science/Mathematics and Social Science based on your degree. Choose your Group 1 courses from the list on pages 53-54.
- □ If you're planning on transferring to a public university in Michigan, inquire about the MTA. See an advisor for more details.

#### **Select your degree electives**

- Choose your major area courses and degree electives to meet your degree requirements.
- Plan for prerequisites for major area courses. Review the transfer guides online at www.nmc.edu/advising for your chosen four-year institution.

#### **Register early**

- □ Register as early as possible. Some courses are offered one semester every year or two and many courses fill up quickly.
- □ Register online at **www.nmc.edu/register** or in Records and Registration on the first level of Tanis Building.
- □ Meet with your advisor as soon as class listings are available. First semester students have a hold on their registration until they meet with a counselor or advisor.

#### Apply for graduation

- □ Apply for graduation at least one semester before you anticipate completing requirements for your program.
- Complete an Application for degree or certificate at www.nmc.edu/records
- Remember to order your cap and gown from the NMC Bookstore during February or March, if you plan on participating in the commencement ceremony in May.

#### Be prepared to transfer

Many NMC students transfer to a four-year institution. You may be able to complete your degree in Traverse City through NMC's partners at the University Center. See page 22-23.



# **General Education**

#### Philosophy

General Education at Northwestern Michigan College promotes the acquisition of knowledge, skills and attitudes needed to function effectively in a changing world. This fosters intellectual curiosity, essential to lifelong learning.

#### Outcomes

To ensure students experience the benefits of our philosophy of general education, the faculty of NMC commits to instilling these practices throughout the curriculum.

**COMMUNICATION:** Students will practice effective communication with an awareness of audience and sense of purpose.

**CRITICAL THINKING:** Students will skillfully conceptualize, apply, analyze, synthesize, and evaluate information gathered from observation, experience, reflection, reasoning, or communication.

**QUANTITATIVE REASONING:** Students will accurately use numbers, symbols, measurements, properties, and the relationships of quantities to make sound decisions, judgments, and/or predictions.

#### Assessment

General Education outcomes are measured in several ways:

- Each year faculty members in designated courses submit selected student work to the Office of Research, Planning & Effectiveness. Faculty teams assess the level of achievement represented by the student work.
- Graduates are surveyed annually and are asked to provide their perceptions of achieving the outcomes.

The Curriculum Committee is charged with using the results of assessment to make curricular improvements.



# **Degrees & Certificates**

NMC students may select from several educational options. Associate degrees and certificates are awarded to those students who complete a prescribed set of courses in specific areas of study. Many programs, especially in occupational areas, also lead to additional career licenses or certifications. Maritime programs require four years of full-time study, including summer sessions and result in a bachelor's degree at NMC. Associate degree programs generally take two years of full-time study to complete. Certificate programs range from 16 to 48 credits.

NMC offers the following degree and certificate options:

- Certificate of Achievement Programs
- Associate in Applied Science (AAS)
- Associate Degree in Nursing (ADN)
- Associate in General Studies (AGS)
- Associate in Science and Arts (ASA)
- Bachelor of Science in Maritime Technology (BS)

#### **Earning a Second Associate Degree**

Students may earn additional degrees at NMC. A minimum of 15 earned hours (credits) shall be earned from NMC in addition to the required credits for the previous degree.

Students seeking an additional associate degree shall be governed by the following stipulations:

- Students may earn only one Associate in Science and Arts degree
- Students may earn the Associate in General Studies degree only as their first associate degree
- Program requirements for the additional degree will be based on the catalog that is in effect when the student officially switches to the new program
- Previous credits will be evaluated by the Records Office for transfer to the additional degree as applicable
- This policy does not apply to certificates

#### **Reverse Transfer**

A transfer student may complete an associate's degree concurrent with his or her pursuit of a bachelor's degree. This process is called reverse transfer. It enables NMC students who transfer to a four-year institution before completing an associate's degree to use coursework and credits earned at the transfer school to fulfill degree requirements at NMC.

Students enrolled at one of NMC's Reverse Transfer partners should submit the appropriate Reverse Transfer Release form to the partner school's Office of the Registrar. Students enrolled at non-partner schools may also reverse transfer credits. To begin the process, submit a transcript from the four-year institution to NMC. After review, NMC will inform students of their successful degree completion, or whether they have unsatisfied degree requirements remaining.

For more information, go to **www.nmc.edu/student-ser**vices/advising-center/reverse-transfer.html

#### **Cultural Perspective/Diversity**

Students will evaluate substantial connections between the world views, power structures, and experiences of multiple global cultures historically or in contemporary contexts.

In order for NMC graduates to engage as educated and informed citizens of a diverse society, students pursuing the ASA and AGS degrees are required to take on Cultural Perspective/Diversity course. Courses are listed on page 53-54.

#### **Certificate Requirements**

Certificate Programs typically include specialty courses and may include some core education requirements. In most cases, they are designed for concentrated proficiency in specialized areas. In some cases, certificates are designed for students who are seeking to complete their core general education requirements for their AAS or ASA degrees. Certificates may range from 16 to 59 credit hours as established by individual program areas and/or the Curriculum Committee. Many certificate courses may apply toward an associate degree.

Certificate Program requirements include:

- **1.** A specified group of credit hours in an area of specialization, as determined by the appropriate NMC academic area. These three levels are possible:
  - Level I: A minimum of 16 credits in a specialty area;
  - Level II: A minimum of 32 credits in a specialty area;
  - Level III: A minimum of 48 credits in a specialty area.
- **2.** A minimum cumulative grade point average of 2.0. Higher GPA standards may be required for specific courses within individual academic areas.
- **3.** Level I and II certificate programs require that a minimum of 8 credit hours be completed at NMC (this may be waived in extenuating circumstances; contact the registrar). Level III certificate programs require that a minimum of 12 credit hours be completed at NMC (this may be waived in extenuating circumstances; contact the registrar).
- **4.** Competency testing by the responsible academic area if the course work was not completed at NMC.

\*Competency credit: Students with competency in a specific area should consult with their program coordinator for possible testing and/or credit.

Certificate programs are listed in the Occupational Specialty Programs section of this catalog.



# Group 1 & 2 Courses

Group 1 General Education courses are designed to enhance skills and knowledge for students to succeed in academic, career and life goals. Students pursuing a two-year degree will need to fulfill specific general education requirements by selecting courses from Group 1 based on the degree requirements listed on the following pages. The Group 1 courses are listed on pages 53-54 of this catalog.

Group 2 courses are all remaining 100-level courses or above which may fulfill occupational specialty program requirements, major area requirements, and elective requirements for degree and certificate programs.



Program Information

# **Degree Requirements**

# Associate in Science & Arts Degree (ASA)

The Associate in Science and Arts degree is generally pursued by students who are planning to transfer to a four-year college or university to complete a baccalaureate degree. Students who want to explore the curriculum also frequently pursue the ASA degree.

#### **General Education Requirements** Minimum 30 Group 1 credits with at least a 2.0 grade for each course Communications 6 credits minimum ENG 111 and ENG 112 English Composition **Electives:** A combination of credits from Humanities 6 credits minimum Group 1 or Group 2 to equal the minimum earned Two Group 1 classes from different departments: art, history, credits for the degree. humanities, literature, music, philosophy, second-year foreign language A list of courses in 3 credits minimum **Mathematics** Group 1 and 2 begins on page 53. One Group 1 mathematics class, MTH 121 or higher 6 credits minimum Science Two Group 1 classes from different departments: astronomy, biology, chemistry, environmental science, physics. One class must include a lecture/lab **Social Science** 6 credits minimum Two Group 1 classes from different departments: anthropology, economics, geography, political science, psychology, sociology Total Degree Credits: Minimum of 60 earned semester credits

Completing the General Education Requirements of 30 credits will qualify for the Michigan Transfer Agreement (MTA). See page 55 for further information.

#### OTHER REQUIREMENTS

- Complete a minimum of 60 credit hours with a 2.0 or higher cumulative grade point average.
- Complete one course designated as Cultural Perspective/Diversity. Courses are listed on page 54.
- Complete a minimum 15 of the 60 credits through NMC classes.

- A maximum of two physical education credits, two professional development seminar credits, and four Academic Service Learning Internship credits may be used toward a degree.
- Courses with numbers below 100 level do not count toward graduation but the grades do count toward your cumulative GPA. They may be pre requisites for other courses needed to complete degree or certificate requirements and may add to the total number of credits taken. Review course prerequisites carefully.
- To count toward graduation, a course must be completed with a grade of 1.0 or higher, unless otherwise stated. See page 37 for Applying for Graduation.

# Associate in General Studies Degree (AGS)

The Associate in General Studies Degree is designed for students interested in obtaining a degree that can be customized based on varying areas of interest.

**Note:** This degree is not designed to meet the needs of the transfer student. Consult an advisor to discuss your educational goals and determine if this degree is right for you.



#### MATH COMPETENCY

\*Math Competency may be fulfilled in one of two ways:

- COMPASS placement into MTH 111 or higher, or
- Successful completion of MTH 23 with a grade of 2.0 or higher.

#### **OTHER REQUIREMENTS**

- Complete at least 60 credit hours with a 2.0 or higher cumulative grade point average.
- Complete one course designated as Cultural Perspective/Diversity. Courses are listed on page 54.
- Complete a minimum of 15 of the 60 credits through NMC classes.

- A maximum of two physical education credits, two professional development seminar credits, and four Academic Service Learning Internship credits may be used toward a degree.
- Courses with numbers below 100 level do not count toward graduation but the grades do count toward your cumulative GPA. They may be prerequisites for other courses needed to complete degree or certificate requirements and may add to the total number of credits taken. Review course prerequisites carefully.
- To count toward graduation, a course must be completed with a grade of 1.0 or higher, unless otherwise stated. See page 37 for Applying for Graduation.

# **Associate in Applied Science Degree (AAS)**

The Associate in Applied Science degree is generally pursued by those students who plan to enter the workforce following graduation from NMC. A career specialty emphasis is the dominant characteristic of the Applied Science Degree. View the list of specialty programs on pages 61-93. Although some students pursuing the AAS degree may transfer to a four-year college or university to pursue a baccalaureate degree, many AAS courses are not granted transfer equivalency credit at Michigan universities. Students considering the AAS degree who may wish to transfer should see an advisor.

#### 6-8 credits Communications ENG 111 English Composition and either ENG 220, BUS 231, or ENG 112. (Program of Study may specify.) Major Area Requirements **Humanities** 3 credits 27 or more earned occupational specialty semester credits. See specific Programs of 3 credits of a Group 1 Humanities course. Study beginning on page 61. (Program of Study may specify.) Math Competency required.\* A list of courses in Group 1 Science 3-4 credits and 2 begins on page 53. 3-4 credits of a Group 1 Science lecture/lab course. (Program of Study may specify.) **Social Science** 3 credits 3 credits of a Group 1 Social Science course. (Program of Study may specify.) **Total Degree Credits: Minimum of 60**

#### MATH COMPETENCY

\*Math Competency may be fulfilled in one of two ways:

- COMPASS placement into MTH 111 or higher, or
- Successful completion of MTH 23 with a grade of 2.0 or higher.

#### **OTHER REQUIREMENTS**

- Complete at least 60 credit hours with a 2.0 or higher cumulative grade point average.
- Complete a minimum of 15 of the 60 credits through NMC classes.

- A maximum of two physical education credits, two professional development seminar credits, and four Academic Service Learning Internship credits may be used toward a degree.
- Courses with numbers below 100 level do not count toward graduation but the grades do count toward your cumulative GPA. They may be prereq uisites for other courses needed to complete degree or certificate requirements and may add to the total number of credits taken. Review course prerequisites carefully.
- To count toward graduation, a course must be completed with a grade of 1.0 or higher, unless otherwise stated. See page 37 for Applying for Graduation.

# Associate Degree in Nursing (ADN)

The Associate Degree in Nursing program is generally pursued by those students who plan to enter the nursing workforce following graduation. After successful completion of this program, graduates take the National Council Licensure Examination (NCLEX-RN). With passing scores, graduates are awarded licensure as a Registered Nurse.

Some students pursuing the ADN degree may decide to transfer to a four-year college or university to pursue a baccalaureate degree. Students considering the ADN degree who may wish to transfer should see an advisor.



#### **Total Degree Credits: Minimum of 68-70**

#### MATH COMPETENCY

\*Math Competency may be fulfilled in one of two ways:

- COMPASS placement into MTH 121 or higher, or
- Successful completion of MTH 111 with a grade of 2.0 or higher.

#### OTHER REQUIREMENTS

- Complete a minimum of 68-70 credit hours with a cumulative grade point average of 2.0. Complete each nursing course at 2.0 or higher.
- Complete a minimum of 16 degree credits through NMC classes.

- A maximum of two physical education credits, two professional development seminar credits, and four Academic Service Learning Internship credits may be used toward a degree.
- Courses with numbers below 100 level do not count toward graduation but the grades do count toward your cumulative GPA. They may be prerequisites for other courses needed to complete degree or certificate requirements and may add to the total number of credits taken. Review course prerequisites carefully.
- To count toward graduation, a course must be completed with a grade of 1.0 or higher. Grades of 2.0 or higher are required for courses with the HNR prefix, CHM 101, ENG 111 and PSY 101. Grade point average of 2.5 or higher required for each of the courses in Anatomy and Physiology sequence (BIO 227, BIO 228). See page 37 for Applying for Graduation.

# **Bachelor of Science in Maritime Technology (BS)**

The Bachelor of Science in Maritime Technology (BS) is for students whose goal is to pursue a select professional field of study at the baccalaureate level. See page 84 for the Maritime Deck Officer and Maritime Engineering Officer program requirements.



#### MATH COMPETENCY

\*Math Competency may be fulfilled in one of two ways:

- COMPASS placement into MTH 121, or
- Completion of MTH 111 with a grade of 2.0 or higher.

#### OTHER REQUIREMENTS

- Complete a minimum of 120 credit hours with a minimum grade of 2.0 or higher in all required courses.
- Complete one course designated as Cultural Perspective/Diversity, see program of study requirements.
- Complete a minimum 30 of the 120 credits through NMC courses.

#### NOTES

• See page 37 for Applying for Graduation

# **Group 1 Courses**

Excess credits may be applied toward Group 2 requirements.

#### **Communications**

ENGLISH DEPT.		Credits
ENG 111	<b>English</b> Composition	
ENG 112	English Composition	4

#### **Humanities**

#### ART DEPT.

ART 100	Art Appreciation	3
ART 111*	History of Western Art I	4
ART 112*	History of Western Art II	4
ART 213	Modern Art History	

#### **HISTORY DEPT.**

HST 101*	Western Civilization to 1500	4
HST 102*	Western Civilization from 1500	4
HST 111*	US History to 1865	4
HST 112*	US History Since 1865	4
HST 211*	Native American History	3
HST 212*	African-American History	3
HST 213*	American Women's History	3
HST 225	American Civil War	3
HST 228	The Vietnam War	3
HST 230	A History of Michigan	3
HST 235	20th Century Europe	3
	• •	

#### HUMANITIES DEPT.

HUM 101*	Introduction to Humanities	.3
HUM 102*	Introduction to Humanities	.3
HUM 116*	World Cultures	.4
HUM 221*	Russian Language and Culture	.4

#### WORLD LANGUAGE (INTERMEDIATE LEVEL) DEPT.

FRN	201*	Intermediate French I	4
FRN	202*	Intermediate French II	4
SPN	201*	Intermediate Spanish I	4
SPN	202*	Intermediate Spanish II	4
SPN	227A*	Spanish for Environmental Mgmt	3

Note: Not all four-year schools will accept second year Foreign Language courses as Humanities Distribution credits.

#### LITERATURE DEPT.

ENG 210*	Children's Literature	3
ENG 240	Introduction to Literature	3
ENG 241*	Mythology	3
ENG 242*	Women in Literature	3
ENG 245*	Native American Literature	3
ENG 254	Shakespeare	3
ENG 256	Environmental Literature	3
ENG 261	British Literature	3
ENG 262	American Literature	3
ENG 263*	World Literature	3
ENG 264	Detective Fiction	3
ENG 265	Science Fiction and Fantasy	3
ENG 266	Popular Culture	3

ENG 267	Film as Literature	3
ENG 271*	Adolescence and Cultural Diversity	3

#### MUSIC DEPT.

MUS 110	Music Appreciation Standard Literature	3
MUS 111	Music Appreciation Jazz	3
MUS 129	History of Rock & Roll	3
MUS 201	Theory of Music	3
MUS 202	Theory of Music	3
	,	

#### PHILOSOPHY/RELIGION DEPT.

PHL 101*	Introduction to Philosophy	3
PHL 105*	Critical Thinking	3
PHL 121*	Western Religions	4
PHL 122*	Eastern Religions	4
PHL 201*	Ethics	3
PHL 202*	Contemporary Ethical Dilemmas	3

#### **Mathematics**

#### MATHEMATICS DEPT.

MTH 116	Intro to Computer Science	
(does not	meet MTA)	4
MTH 121	College Algebra	4
MTH 122	Trigonometry	3
MTH 131	Intro to Probability and Statistics	3
MTH 140	College Algebra and Trigonometry	5
MTH 141	Calculus I	5
MTH 142	Calculus II	5
MTH 205	Math for Elementary Teachers I	4
MTH 206	Math for Elem. Teachers II	4
MTH 241	Calculus III	4
MTH 251	Differential Equations	4
	-	

#### **Natural Science**

#### 

Planetary Astronomy4
Astronomy4
Human Biology4
Plant Biology4
Essential Biology4
Cell, Plant and Ecosystem Biology 4
Genetic, Evolution and Animal Bio4
Microbiology4
o lab)3
Human Anatomy and Physiology I 4
Human Anatomy and Physiology II4
Natural History of Vertebrates4
ology (no lab)4
General Ecology
ry (no lab)3

#### CHEMISTRY DEPT.

CHM 101 - CHM 101L Introductory Chemistry4
CHM 150 - CHM 150L - 150R General Chemistry I5
CHM 151 - CHM 151L - 151R General Chemistry II5
CHM 250 - CHM 250L Organic Chemistry I5
CHM 251 - CHM 251L Organic Chemistry II

#### Natural Science (continued)

#### ENVIRONMENTAL SCIENCE DEPT.

ENV 103 - ENV 103L Earth Science	4
ENV 104 - ENV 104L Life of the Past	4
ENV 111 - ENV 111L Physical Geology	4
ENV 112 - ENV 112L Historical Geology	4
ENV 117 - ENV 117L Meteorology and Climatology	4
ENV 131 - ENV 131L Oceanography	4
ENV 140 - ENV 140L Watershed Science	4
ENV 210 - ENV 210L Fundamentals of Soil Science	4
ENV 231 - ENV 231L Environmental Science	4
ENV 270A Michigan Basin Geology (lab only)	2
ENV 270B Field Mapping Techniques (lab only)	2
ENV 270C Precambrian Geology of MI (lab only)	2

#### PHYSICS DEPT.

PHY 105 - PHY	105L Physic	s of the World Ar	ound Us4
PHY 121 - PHY	121L Genera	al Physics I	
PHY 122 - PHY	122L Genera	al Physics II	4
PHY 221 - PHY 2	221L - 221R	Prob & Prin of I	Physics I 5
PHY 222 - PHY 2	222L - 222R	Prob & Prin of I	Physics II 5

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#### **Social Science**

#### ANTHROPOLOGY DEPT.

#### ECONOMICS DEPT.

ECO 201	Principles of Macroeconomics
ECO 202	Principles of Microeconomics

#### GEOGRAPHY DEPT.

GEO 101*	Introduction to Geography	3
GEO 105 -	GEO 105L Physical Geography	4
GEO 108	Geography of U.S. and Canada	
GEO 109*	World Regional Geography	
GEO 115	Introduction to GIS	

#### POLITICAL SCIENCE DEPT.

PLS 101*	Intro to American Politics	
PLS 132*	Comparative Politics	
PLS 211*	International Relations	
PLS 222	Intro to Political Theory	
PLS 233*	U.S. Foreign Policy	

#### PSYCHOLOGY DEPT.

PSY 101	Introduction to Psychology	
PSY 211	Developmental Psychology	3
PSY 212	Psychology/Exceptional Child	3
PSY 221	Psychology of Personality	
PSY 223	Intro to Social Psychology	3
PSY 225	Human Sexuality	
PSY 231	Psychology of Adjustment	
PSY 250	Abnormal Psychology	
-	7 87	-

#### SOCIOLOGY DEPT.

SOC 101*	Introduction to Sociology	3
SOC 201	Modern Social Problems	3
SOC 211	Marriage and the Family	3
SOC 220*	Gender and Society	3
SOC 221*	Russian Language and Culture	4
SOC 231*	Deviance and Criminal Behavior	3

#### \*Cultural Perspective/Diversity

One Cultural Perspective/Diversity course is required for the ASA and AGS degrees. To meet this requirement, choose any course marked with an asterisk (\*) or a 100 level French or Spanish course.

# **Group 2 Courses**

All 100-level or higher courses not listed in the Group 1 section are Group 2 courses.

# Course Learning Options

# **Linked Courses**

This approach offers students an opportunity to "link" the content of a course such as the reading and writing of composition to the content of classes in areas such as business and science. Sections are generally small to allow for individual attention, and when the same students take the same sections of a composition and business class, for example, they become a "learning community" and can write composition papers about business topics, enhancing the learning in both classes. For more information, contact the Business, Communications or Humanities academic areas.

# **Work-Based Learning**

NMC provides various work-based learning options.

#### Internships

Internship opportunities are offered for students who wish to integrate academics with professional work experience. Students can earn college credit while working in positions related to their academic and career goals. Contact the Office Manager in the academic area where you would like to pursue your internship.

**Service Learning** (For credit or non-credit) Service Learning is a nationwide initiative to instill a sense of civic responsibility in students. It's volunteerism with a learning twist, centered on the benefits students receive while providing services to their community and/or college. It is an opportunity for students to explore career or interest areas, apply classroom theory to a real situation, and gain practical experience for resume building.

Up to four internship elective credits can be applied to graduation. Students may also do non-credit volunteering using the same process. For more information, call (231) 995-1290.



# Michigan Transfer Agreement (MTA)

In an effort to improve the transferability of college courses between Michigan public community colleges and universities, MTA will take effect beginning the fall of 2014. Students who began prior to fall of 2014 will be able to complete the existing MACRAO agreement until the end of summer 2019. If a student already has the MACRAO agreement stamp on their transcript it is expected that the receiving institution will still honor it.

To fulfill the Michigan Transfer Agreement (MTA) students must successfully complete at least 30 Group 1 semester credit hours. Students must earn at least a grade of 2.0 in each MTA course in order for it to count towards the minimum MTA requirements. Credits should be distributed as follows:

- English Composition: Two courses 6 credits.
- Humanities: Two Group 1 courses 6 credits taken from two different departments excluding studio and performance classes.
- Mathematics: One Group 1 course 3 credits MTH 121 or higher.
- Natural Sciences: Two Group 1 courses 6 credits from two different departments with one course that includes a lecture/laboratory.
- Social Sciences: Two Group 1 courses 6 credits from two different departments.

Students are required to complete at least one for-credit course at NMC before requesting the MTA Satisfied endorsement. It must be a college level course but need not be from the areas represented in the MTA. When students have completed the MTA requirements, they should notify the NMC Records Office so their transcripts will be noted "MTA SATISFIED." Students are not required to complete an associate degree in order to satisfy the MTA.

Some students select a course of study that requires a fouryear degree of which two years may be completed at NMC through completion of the Associate in Science and Arts degree (ASA). Students completing the ASA will also complete the MTA. See page 48 for ASA degree requirements. Visit **www.nmc.edu/advising** for additional information.



# Be Prepared to Transfer

About half of NMC students enroll with the intention of transferring to a four-year school to complete their degree. This checklist will help you transfer smoothly. If you want to complete your degree in Traverse City, you can choose from more than 50 programs offered through NMC's University Center partners. More information is on page 22-23.

#### Meet with an NMC Counselor or Academic Advisor

Discuss your transfer plan including associate degree requirements, general education, and transferability of courses.

#### **Evaluate Colleges and Decide Early!**

- □ Investigate entrance and degree requirements for four-year institutions.
- Consider the options available for colleges including setting and character, cost, size of school, teacher/student ratio, educational opportunities, program options and accreditation status.
- Visit the Advising Center to review four-year institution transfer guides and resource materials, or visit www.nmc.edu/advising Ask about the Michigan Transfer Agreement.
- □ Visit with representatives of four-year transfer institutions visiting NMC.
- □ Investigate the web page of your transfer institution.

#### Seek Advising

- Contact the transfer school admissions office and speak with an advisor specializing in transfer.
- Note the name of the advisor you spoke with remember to keep accurate records of your discussions (who, what, when) and make copies of everything you send.
- **D** Review application procedures and time lines for admission and financial aid.

#### **Visit Transfer School**

- □ Call the Admissions Office and schedule a visit. Request a meeting with a student and/or advisor in your major area and a campus tour.
- Do this as early in your academic career at NMC as possible.

#### **Apply Early!**

- □ Complete your applications for admission and financial aid.
- Determine deadlines for financial aid, including scholarships and transfer funding, as well as major and housing applications.
- Send necessary documents including transcripts from NMC and all other colleges attended, high school transcripts, ACT scores and other scores as required. (Keep copies for your file.)
- Send a final copy of your transcripts from NMC to the school after completion of your courses at NMC.
- □ Verify that your transfer school received a complete file.

# **Transfer Options**

#### Accounting

NMC Code 733

The Accounting Program contains a blend of specialized classes and liberal arts studies to prepare students for today's competitive, complex, and changing business world. Students who plan to pursue a bachelor's degree should refer to NMC's degree requirements for the Associate in Science and Arts (ASA) degree. Also, transfer students should familiarize themselves with the requirements of the school where they plan to complete their bachelor's degree. Students interested in a bachelor's degree may also elect to stay in Traverse City and transfer to the University Center.

#### Anthropology

Anthropology is the study of humanity. Archaeology is the study of the material humans leave behind. Students planning to pursue degrees in anthropology or archaeology at four-year colleges or universities should take these courses. Introduction to cultural anthropology is a required course for many areas of study.

NMC offers specialty courses in Nautical and Underwater archaeology that may not be found at larger institutions. The Nautical Archaeology Society courses that are taught at NMC offer and internationally recognized certificate in nautical archaeology. This area of study can include fieldwork and research activities in northwestern Michigan, as well as, application of advanced technologies. Students planning careers in the following field may find these courses useful: offshore oil and gas industry, underwater search and recovery (such as police divers), maritime and naval, university research, homeland security, commercial surveying, remote sensing (applied water-related technologies), cultural heritage development and management. Contact Mark Holley for more information at mholley@nmc.edu. See page 97 for course listings.

#### **Art/Fine Arts**

NMC Code 711

The Fine Arts and Visual Communications courses are designed for students who plan to transfer to a four-year college or university for a Bachelor's or Master's degree in Fine Arts (BFA or MFA). Careers for students specializing in Fine Arts include education, museum/gallery management, commercial illustration, animation and character development, film and graphic arts.

Students specializing in Fine Arts while completing an associates of Science and Arts degree at NMC will pursue a program of study which includes Drawing, 2-D Design and 3-D Design while offering tracks in Fine Studio Arts and Ceramics, Illustration, Photo, Animation/Character Design, Photography, Visual Communications, Painting and Art History. Students are urged to discuss course selection early with transfer schools since portfolio requirements for admission vary. See page 47 for Associates in Science and Art degree requirements.

#### Astronomy

NMC Code 717 NMC offers courses that focus on Observational, Planetary, and Stellar Astronomy. Students planning on transferring to pursue a bachelor's degree in this area should also take course work in Mathematics and Physics. See page 100.

#### Biology

NMC Code 702 Individuals planning to pursue a four-year degree in Biology should select from courses beginning on page 105. In addition, students should select courses in Mathematics, Chemistry and Physics.

#### **Business Administration**

Students planning to pursue a four-year degree in Business Administration should follow NMC's degree requirements for the ASA or AAS degree (depending on the transfer institution) AND familiarize themselves with the requirements of the school of choice for their bachelor's degree.

#### Chemistry

Students planning on transferring to pursue a bachelor's degree in Chemistry will pursue course work which includes credits selected from those beginning on page 109. In addition to taking Chemistry courses, students with an emphasis in Chemistry gain a solid background in Math and Physics.

#### **Child Development**

Child Development courses, such as Early Childhood Education and Guiding Young Children are designed to prepare students to work with children and their families in early care and education settings. Students may be seeking a career as the director of a child care program, a paraprofessional/teacher's aide in the school system, a lead teacher in a daycare/ preschool setting, a daycare teacher's aide, or preparing for a Bachelor's degree in Child Development. Classes offered to complete a Child Development Concentration include: CD 101, CD 202, CD 203, CD 204, CD 206, CD 220, CD 230, and PSY 212. If you are pursuing elementary education, please consult the transfer guide from the transferring school or see an advisor.

#### Communications

Communications as a separate field of study may include a variety of careers and specialties, ranging from media and public relations to technical writing. It is also an important component of other programs of study or careers, including computer science, human services, health occupations and art therapy.

NMC. Find it here.

NMC Code 734

NMC Code 727

NMC Code 722

NMC Code 704

#### **Criminal Justice**

NMC Code 706 NMC and Ferris State University have partnered to offer Bachelor of Science degree in Criminal Justice where students complete 85 credits at NMC and 35 credits at FSU, which can be completed at the University Center in Traverse City. NMC also offers a Criminal Justice program in collaboration with other colleges through the Michigan Community College Virtual Learning Collaborative. This program involves agreements that lead to a four-year degree from another college/university. Visit www.nmc.edu/online for current information on the status of this program, the courses, program requirements, or articulation agreements.

#### **Economics**

NMC Code 732

The most basic and enduring strength of economics is that it provides a logical and orderly way of analyzing contemporary economic issues. It draws upon geography, history, philosophy, and mathematics to address topics ranging from how an individual, household or firm, can make rational decisions regarding spending, saving, investment and profits to how a society can make optimal decisions regarding economic growth, inflation, unemployment, trade, and environment. As a result, economics is widely recognized as a solid background for many jobs and professions in the private and public sectors. Students interested in this field of study will select courses from among those on page 118.

#### Education

NMC Code 708

NMC offers an introductory course to teaching as a career and prepares student for further study in education at transfer institutions. Transfer requirements vary greatly. Go to www.nmc.edu/advising to view NMC transfer guides.

#### Engineering

NMC Code 709

The NMC engineering curriculum parallels engineering programs offered during the first two years at other colleges and universities. Traditionally, these first two years emphasize the tools and theories that provide background for all engineering fields. Completion of the following program requirements will prepare students for transfer to four-year engineering programs.

Northwestern Michigan College has joined with Michigan Technological University, Kettering University, and Lake Superior State University to offer a two plus two program whereby a student attends NMC for the first two years and then completes the final two years of an engineering degree at one of the participating four-year institutions. A student admitted into the two plus two program at NMC has the added advantage of a guaranteed place in the major of their choice at one of the four year institutions.

ENGINEERING REQUIREMENTS	Credits: 69-7	76
General Education Credits as required for	ASA 18-2	20
Chemistry*: CHM 150		5
Mathematics**: MTH 141, 142, 241, and 2	251 1	18
Physics: PHY 221 and 222	1	10
Engineering: EGR 101, 113, 201, 202, 203	1	14
Additional Requirements: EGR 131 and/o	r MTH 116	
based on program choice	4-	-9

Note: Use this list of courses as a guide only. It is not applicable for all engineering specialties or all schools of engineering. It is important to follow specific requirements for each engineering program available in transfer guides at www.nmc.edu/advising or in the Advising Center. Students who plan to earn an associate degree at NMC before transferring should consult an advisor for assistance in modifying this schedule.

Engineering Certificate	NMC C	ode 079
ENGINEERING REQUIREMENTS	Credits:	51-56
Chemistry: CHM 150		5
Mathematics: MTH 141, 142, 241, and 251		18
Physics: PHY 221 and 222		10
Engineering: EGR 101, 113, 201, 202, 203		14
EGR 131 and/or MTH 116 ba	sed on	
program choice		4-9

#### English

NMC Code 710 Students wishing to concentrate their studies in the field of English may be preparing for careers in writing or teaching. English is also crucial to many other careers since writing and reading are high-demand skills in most professions. Students planning to transfer to complete a bachelor's degree in English should pursue an Associate in Science and Arts degree program that includes credits selected from among the courses beginning on page 122.

#### **Environmental Science**

NMC Code 717 The study of Environmental Science includes courses in Geology, Biology, Meteorology, Chemistry, Soils, Oceanography and Watershed Science. Students planning on transferring to pursue a bachelor's degree in any of these areas will choose a program of study which includes courses selected from those beginning on page 125. Students are encouraged to contact a faculty member in the Environmental Science department to learn more about employment opportunities and for assistance with class scheduling.

#### **Freshwater Studies**

Economy and Society NMC Code 592 Global Freshwater Policy and Sustainability NMC Code 591 Science and Technology NMC Code 593 Students planning to pursue a four-year degree in Freshwater Studies should follow NMC's degree requirements for the ASA degree on page 48. Students are strongly encouraged to consult a Freshwater Studies advisor for scheduling guidelines and degree selection.

**General Liberal Arts/Science** NMC Code 712 Students interested in transferring to pursue a bachelor's degree should enroll in the General Liberal Arts/Science area of study if they are undecided. Students planning on pursuing this avenue will select liberal arts and science courses from the course descriptions beginning on page 91.

#### Geography

NMC Code 726 NMC offers course work in Physical Geography and Introduction to Geography. Regional courses are also offered that focus on the United States and Canada and the World. In addition, a tools course concentrating on Geographic Information Systems (GIS) is offered. Students planning on pursuing a rewarding career in Geography are encouraged to meet with the Geography Department Head for help in course selection. See page 127 for course listings in Geography.

#### Geology

NMC Code 717

Students interested in pursuing a career as a Geologist will take Environmental Studies courses, including Physical and Historical Geology. In addition, students will complete course work in Chemistry, Physics, and Mathematics.

#### History

NMC Code 730

As a separate field of study within the humanities, history will prepare students to enter secondary education, journalism, the archival and museum professions, and a variety of public history positions upon completion of at least a bachelor's degree. It will also prepare students for entering professional and graduate schools in law and in fields that will enable graduates to teach and do research in institutions of higher learning.

#### **Mathematics**

NMC Code 715

Students planning on transferring to complete a bachelor's degree in Mathematics will pursue course work that includes MTH 141, MTH 142, MTH 241, and MTH 251. Other suggested courses include PHY 221, PHY 222 & MTH 116.

#### Music

NMC Code 716

Professional opportunities for a skilled musician are endless in that music, in some way, touches our lives every day in many ways. The study of music offers a vast variety of career options including: music education, instrumental music, vocal performance, conducting, composing, music for worship, music business, instrument making and repair, music publishing, music communications, recording industry, and in the TV and radio industry.

NMC offers students the opportunity to complete the first two years of music-major coursework in a creative and supportive environment. Students receive individualized instruction from our dynamic faculty in classes designed for students' success. Standard music-major coursework includes: Music Theory, Sight Singing and Ear Training, Group Piano Instruction, Applied Instruction (private lessons), and participation in NMC Music Ensembles. Upon successful completion of the two-year program, students will have earned an Associate in Science and the Arts degree that is transferable to most four-year institutions of higher learning.

NMC also offers many opportunities for those students pursuing non-music degree paths, but interested in continuing their participation in a music program. Any NMC student (music-major or not) may enroll for Applied Instruction and may participate in any of our NMC Music Ensembles: NMC Chamber Singers, NMC Grand Traverse Chorale, NMC Concert Band, NMC Jazz Ensemble, and the NMC Vocal Jazz Ensemble. Other opportunities (chamber groups, percussion ensembles, jazz combos, etc.) are also available for interested NMC students.

# **Performing Arts**

#### DANCE

Students wishing to pursue an interest in the field of dance should take the courses in dance on page 118 and consult with an advisor and the dance faculty member before their first semester at NMC.

#### THEATER

NMC Code 707

NMC Code 707

Students interested in the field of theater at NMC will study acting and play production. Course work in this area will also include credits chosen from the public speaking, communications, and literature areas. Students planning to transfer to complete a bachelor's degree in theater should pursue an Associate in Science and Arts degree program that includes credits from the courses on page 159.

#### Philosophy and Religion

NMC Code 729 Careers in the fields of philosophy and religion include college teaching and research, secondary education, as well as positions as ministers, priests, or rabbis. Other potential careers for those who specialize in religion are pastoral administration, religious education, church office management, and church mission work. The fields of clinical medicine and medical research as well as commercial business fields like accounting are employing ethicists, a specialized branch of philosophy.

Students seeking to transfer to a four-year college or university to major in philosophy or religion may complete basic course work while at NMC. That course work will include credits selected from those courses on pages 154.

# Physical Education

Physical Education activity courses are offered to students wishing to expand personal interests, health and fitness, recreation, and sports skills. Most Physical Education courses provide a starting point for students transferring to fouryear institutions and who seek a Physical Education major or minor.

### **Physics**

NMC Code 717 Students planning on transferring to complete a bachelor's degree in Physics will pursue course work which includes credits selected from those courses on page 155. These students should also include Calculus I, II, & III, Differential Equations, and General Chemistry I & II.

**Program Information** 

#### **Plant Science, Applied** FRUIT PRODUCTION LANDSCAPE & NURSERY VITICULTURE

NMC Code 581 NMC Code 582 NMC Code 580

Students interested in pursuing a four-year degree in Plant Science should follow a general education curriculum with courses in science, including Chemistry and Biology. In addition, students may take technical courses in soils, plants and plant diseases from Michigan State University at the NMC University Center. See page 90 for course requirements.

#### **Political Science**

NMC Code 725

Political science as a field includes the study of American politics, comparative politics, international relations, political theory, and political economy. Undergraduate courses in political science are an important component of any liberal arts education as students gain important knowledge concerning the political structures that shape our world. Courses in political science are especially useful for students pursing careers or advanced degrees in public policy, law, business, economics, social work, education, history, and, of course, politics. Bachelor's and graduate degrees in political science and public policy offer career opportunities in a variety of areas such as education, policy research, law, and international business. Students interested in political science courses, see page 155.

#### Pre-Law

NMC Code 718 Pre-law is a major often selected by students interested in

Pre-Med, Pre-Dental, Pre-Vet NMC Code 713 The medical sciences major is designed for pre-professional students interested in graduate training in the medical field.

pursuing careers in government or law.

#### Psychology

NMC Code 724

Students interested in the following fields of psychology, such as counseling, social work, research or teaching, may select from courses such as Introduction to Psychology, Introduction to Social Psychology, Developmental Psychology, Exceptional Child, Human Sexuality, Abnormal Psychology, Psychology of Personality and Psychology of Adjustment.

#### **Social Work**

NMC Code 723

The social work courses are designed to transfer to other fouryear schools with certified social work programs. It is specifically designed to fit into the Ferris State University Social Work Program at the University Center in Traverse City and on the Ferris main campus in Big Rapids. When choosing this program of study, it is highly recommended to meet with the social work coordinator; call (231) 995-1294. This will assist you in building a program that will transfer smoothly. Social work is a rapidly growing field that employs people in many different areas of work and requires very specific training and course work. Students interested in this field of study will select courses from among those beginning on page 159.

#### Sociology

Sociology is the study of the social context of human behavior. It includes the study of social change; socialization of group attributes such as social class, race, gender and age; and the workings of our social institutions. Courses in sociology are an important component of any liberal arts education, especially involving critical thinking and an understanding of diversity. It is also a major study for those interested in a wide variety of careers including teaching, social work, public policy, criminal justice, law, non-profit organizations, and social research. See page 159 for course listings.

#### World Languages

World Languages as a field of study at NMC includes specialization in American Sign Language, French, and Spanish. In a world of international telecommunications and interdependent economies, language specialization is an important component for those planning careers in business, communication, or teaching.

# NMC. Find it here.



NMC Code 720

NMC Code 731

# Occupational Programs

Occupational degrees and certificate programs prepare students to enter the workforce through development of technical specialties and related skills appropriate to the chosen occupational area. See the following program listings for specific program requirements.

Each Occupational program has specific learning outcomes that are assessed each year. Assessment methods vary from program to program. Specific outcomes are available from the academic chair. Students who would like to know how a specific academic area meets these outcomes should contact the academic chair of that area.

# Accounting

#### Associate in Applied Science Degree NMC Code 103

This program will prepare students to begin a career in accounting. Graduates will be prepared to work as bookkeepers and entry-level accountants in accounts receivable, accounts payable, payroll, and other entry-level areas of accounting. Students considering transfer should see an advisor.

Gener	ral Edu	cation Requirements Credits: 17-18	
Communications: ENG 111 and either BUS 231			
or El	NG 112	2*7-8	
Huma	nities: ]	PHL 201 <i>or</i> PHL 2023	
Math	compet	ency: Placement into MTH 121 <i>or</i> higher,	
<i>or</i> co	mpleti	on of MTH 111	
Scienc	e: Any	Group 1 course with a lab4	
Social	Science	es: ECO 201	
Occuj	oationa	al Specialty Requirements 39	
ACC	121	Accounting Principles I4	
ACC	122	Accounting Principles II4	
ACC	221	Intermediate Accounting I4	
ACC	222	Intermediate Accounting II4	
ACC	225	Cost/Management Accounting3	
BUS	101	Introduction to Business	
BUS	105	Business Math**	
BUS	155	Interpersonal Communications	
BUS	261	Business Law I	
CIT	100	Computers in Business-An Intro3	
CIT	210	Microsoft Office - Excel	
CIT	216	Computerizing Accounting Systems2	
Direct	ted Ele	ctives (Choose any combination) 8	
ACC	231	Federal Income Tax Problems	
ACC	290	Accounting Internship	
ECO	202	Principles of Microeconomics	
MGT	241	Principles of Management	
MKT	201	Principles of Marketing3	
MTH	111	Intermediate Algebra***	
MTH	131	Intro to Probability and Statistics	
* Stu	udents in	itending to transfer to another college	
or	universi	ty should take ENG 112.	
** It i	s recom	mended that BUS 105 be taken before	
or	concurr	ently with ACC 121.	

\*\*\* Or a higher level math course, excluding MTH 116.

#### **Program Requirements**

64-65

# Administrative Support Specialist

#### Certificate of Achievement (Level II) NMC Code 003

Well-trained office professionals continue to be in demand and play an integral role in the successful operation of an organization. They work as a team with managers, professionals, and other support staff to control and manage administrative operations.

The Administrative Support Specialist Certificate builds on the Computer Studies-Office Applications Specialist Certificate and focuses on specific skills which area employers consider essential.

Level	II Certi	ficate Requirements	Credits: 34	4
Comp	letion o	of all courses required for the		
Office	Applic	ations Specialist Certificate (see pa	ge 70) 1	6
ACC	121	Accounting Principles I		4
BUS	101	Introduction to Business		3
BUS	231	Professional Communications		3
BUS	290	Business Administration Internsh	ip	3
CIT	109B	Keyboarding II*	-	2
PHL	105	Critical Thinking		3

Note: Students selecting this certificate program need beginning keyboarding skills.



# Audio Technology

Associate in Applied Science Degree NMC Code 451

The NMC Audio Tech program will help prepare students for a career in the audio technology field. Careers in the audio technology field include: Sound Engineer, Recording Engineer, Sound Designer, Live and Theater Sound Engineer, Composer, Mixing Engineer, Mastering Engineer, Archivist, Audio and Visual Equipment Technician, Producer, Broadcast Technician, Pro Tools Operator, Audio Editor, and Audio Post Production.

At NMC, we believe our Audio Tech students will be better prepared for the workforce and the ever-changing music industry by combining aspects of a traditional music education, hands-on training on the newest technology, and opportunities to learn in a variety of environments and experiences the studio, the stage, and the classroom. Students will have the opportunity to learn, and work with, industry-standard hardware and software recording platforms including: Pro Logic, Studio One, and Pro Tools. Students will also have practical real-world experience in studio and live recording, sound design, composing, mixing, and mastering. The NMC Audio Tech Program is designed to be completed in four semesters. While completing coursework in the Audio Tech program, students will have the opportunity to earn platform-specific certification, professional credentials of value, and an Associate in Applied Science degree.

Gener	al Edu	cation Requirements Credits: 17-18
Comn	nunicat	ions: ENG 111 <i>and either</i>
BUS	231 or	ENG 1127-8
Huma	nities: l	MUS 110 or MUS 111 3
Mathe high	matics er, <i>or</i> co	competency: Placement into MTH 111 <i>or</i> ompletion of MTH 23
Scienc	e: Any	Group 1 course with lab 4
Social	Science	s: Any Group 1 course 3
Occup	oationa	Il Specialty Requirements 44
AUD	100	Intro to Audio Tech2
AUD	101	Theory for Studio Engineers 2
AUD	110	Sound Recording I 2
AUD	111	Sound Recording II 2
AUD	120	Digital Audio I 2
AUD	121	Digital Audio II 2
AUD	130	Live Sound I 2
AUD	131	Live Sound II 2
AUD	210	Sound Recording III 2
AUD	220	Digital Audio III 2
AUD	230	Live Sound III 2
AUD	250	Audio Tech Practicum 2
AUD	260	Audio Tech Internship 3
AUD	270	Audio Tech Final Project 3
MUS	101	Theory of Music <i>or</i>
MUS	100a	Intro to Music Theory I** 3
MUS	102	Theory of Music <i>or</i>
MUS	100b	Intro to Music Theory II** 3
MUS	103	Sight Singing and Ear Training <i>or</i>
MUS	105a	Intro to Ear Training I** 1

MUS	104	Sight Singing and Ear Training <i>or</i>	
MUS	105b	Intro to Ear Training II** 1	
MUS	106	Class Piano I 2	,
MUS	107	Class Piano II 2	,
MUS	112	Class Guitar I 2	,

\*\*Students will take a Music Theory Placement Test at the start of the semester.

Program Requirements 61-62

# **Audio Technology**

Certificate of Achievement (Level I) NMC Code 045

The Audio Technology field is a dynamic industry offering a variety of career opportunities. Upon successful completion of the core Audio Technology coursework, students may earn the Audio Technology Level I Certificate of Achievement.

Certif	icate F	Requirements	Credits:	16
AUD	100	Intro to Audio Tech		2
AUD	101	Theory for Studio Engineers		2
AUD	110	Sound Recording I		2
AUD	111	Sound Recording II		2
AUD	120	Digital Audio I		2
AUD	121	Digital Audio II		2
AUD	130	Live Sound I		2
AUD	131	Live Sound II		2

# **Audio Technology**

Certificate of Achievement (Level II) NMC Code 046

The Audio Technology field is a dynamic industry with new technologies being introduced at a rapid pace. To stay abreast of the latest tools and trends, students may enroll in advanced Audio Technology coursework and earn the Audio Technology Level II Certificate of Achievement.

The Audio Technology Level II Certificate of Achievement builds upon the skills learned in the Level I Certificate of Achievement.

Level II Certificate Requirements	32
Prerequisites: Completion of Audio Technology Level I	
Certificate (16 credits)	
Level I Certificate RequirementsCredits:	16

AUD	210	Sound Recording III	2
AUD	220	Digital Audio III	2
AUD	230	Live Sound III	2
AUD	250	Audio Tech Practicum	2
AUD	260	Audio Tech Internship	3
AUD	270	Audio Tech Final Project	3
MUS	106	Class Piano I or	
MUS	112	Class Guitar I	2

# Automotive - Automotive Service Technology

#### Associate in Applied Science Degree NMC Code 560

This program is designed for either the person with little or no prior experience or the skilled technician who needs to keep pace with current technology. Students may take the classes they need to update skills, pursue an Associate in Applied Science degree which combines automotive technician classes with courses in the liberal arts and sciences, or work toward a Master Technician Certificate which qualifies graduates to enter the workplace as entry-level state-certified technicians. Students may also choose from three specialized certificates: Hybrid Technology, Under Car Specialist or Electrical and Drivability Specialist. The certificates are explained in more detail in the proceeding pages. All eight state or ASE certifications must be passed to be awarded the AAS degree or Master Technician Certificate.

Day and evening classes allow technicians at every level to develop new skills at convenient times. The program is a series of modules, each designed to teach an individual system. This flexibility allows the more experienced technician to learn a specific system while the beginning technician can combine the modules for a complete course in automotive technology.

#### **Foundation Requirements**

For successful completion of the AT courses, placement into ENG 111 and completion of MTH 08 or placement into MTH 23 is recommended.

Gener	al Edu	cation Requirements Credits: 17-18	
Comm	unicati	ions: ENG 111 and either BUS 231 or	
ENG	112 <b>0</b>	r = 1 ENG 220/-8	
Huma	nities: A	Any Group I course	
Math o	compet	ency: Placement into MTH 111 <i>or</i> higher,	
Science	e: Anv	Group 1 course with lab	
Social	Science	es: Any Group 1 course	
Occup	oationa	Il Specialty Requirements 59	
AT	100**	Automotive Service Basics2	
AT	110	Automotive Brake Systems5	
AT	120**	Automotive Electrical I5	
AT	130	Engine Performance I5	
AT	140	Suspensions and Steering4	
AT	150	Automatic Transmissions	
AT	160	Engine Repair6	
AT	170	Heating and Air Conditioning4	
AT	180	Manual Drivetrain and Axles	
AT	200	Service Department Management2	
AT	210	Hybrid Technology5	
AT	220	Automotive Electrical II5	
AT	230	Engine Performance II4	
All eig	ht state	or ASE certifications must be passed to be	
awarde	ed the A	AS degree or Master Technician Certificate.	

\*\*May be waived with appropriate work experience or education.

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# Automotive - Electrical & Drivability Specialist

#### Certificate of Achievement (Level II) NMC Code 031

This certificate is designed to train students in the automotive systems related to the operation of the engine and its control systems. Emphasis is placed on the automotive electrical and electronic control systems. For students to be awarded this Electrical and Drivability Specialist certificate, they must pass the related State of Michigan exams or ASE test for all five of the required automotive courses.

#### **Foundation Requirements**

For successful completion of the AT courses, placement into ENG 111 and completion of MTH 08 or placement into MTH 23 is recommended.

Certificate Requirements			Credits: 32
AT	100*	Automotive Service Basics	2
AT	120	Automotive Electrical I	5
AT	130	Engine Performance I	5
AT	160	Engine Repair	6
AT	220	Automotive Electrical II	5
AT	230	Engine Performance II	
Elect	ive cour	se	5
*Ma	y be wai	ived with appropriate work experien	ice or education.

#### **Program Completion Requirements**

A minimum of 32 AT credit hours are required to receive this certificate. Students must choose elective courses from the Automotive Program course list to reach the required credit level.

Must pass the related State of Michigan or ASE test for all of the required automotive courses.



# **Automotive - Hybrid Technology Specialist**

**Certificate of Achievement (Level II)** NMC Code 034

#### **Foundation Requirements**

For successful completion of the AT courses, placement into ENG 111 and completion of MTH 08 or placement into MTH 23 is recommended.

#### **Certificate Requirements**

Credits: 32-34

AT	100	Automotive Service Basics*	2
AT	120	Automotive Electrical I	5
AT	130	Engine Performance I	5
AT	150	Automatic Transmissions or	
AT	230	Engine Performance II	4-6
AT	160	Engine Repair	6
AT	210	Hybrid Technology	5
AT	220	Automotive Electrical II	5
*May	ı be wai	ved with appropriate work experience or ed	ucation.

#### **Program Completion Requirements**

A minimum of 32 AT credit hours are required to receive this certificate. Students must choose elective courses from the Automotive Program course list to reach the required credit level.

Must pass the related State of Michigan or ASE test for all of the required automotive courses.

# Automotive - Master Automotive Technician

**Certificate of Achievement (Level III)** NMC Code 001

State and federal levels of certification are offered.

#### **Foundation Requirements**

For successful completion of the AT courses, placement into ENG 111 and completion of MTH 08 or placement into MTH 23 is recommended.

#### Cer

tificate R	lequirements	Credits: 59
100**	Automotive Service Basics	2
110	Automotive Brake Systems	5
120**	Automotive Electrical I	5
130	Engine Performance I	5
140	Suspensions and Steering	4
150	Automatic Transmissions	6
160	Engine Repair	6
170	Heating and Air Conditioning	4
180	Manual Drivetrain and Axles	6
200	Service Department Management	2
210	Hybrid Technology	5
220	Automotive Electrical II	5
230	Engine Performance II	4
st pass all	eight (8) State or ASE certification	tests to be
rded this o	certificate.	

\*May be waived with appropriate work experience or education.

# Automotive -**Under Car Specialist**

#### **Certificate of Achievement (Level II)**

NMC Code 032

This certificate is designed to train students in the systems underneath the automobile, including brakes, suspension, and drive train. For students to be awarded this Under Car Specialist certificate, they must pass the related State of Michigan or ASE test for all five of the required automotive courses.

#### **Foundation Requirements**

For successful completion of the AT courses, placement into ENG 111 and completion of MTH 08 or placement into MTH 23 is recommended.

Certif	ficate I	Requirements	Credits: 32
AT	$100^{*}$	Automotive Service Basics	2
AT	110	Automotive Brake Systems	5
AT	120	Automotive Electrical I	5
AT	140	Suspension and Steering	4
AT	150	Automatic Transmissions	6
AT	180	Manual Drivetrain and Axles	6
Electi	ve cour	se	4

\*May be waived with appropriate work experience or education.

#### **Program Completion Requirements**

A minimum of 32 AT credit hours are required to receive this certificate. Students must choose elective courses from the Automotive Program course list to reach the required credit level.

Students must pass the related State of Michigan or ASE test for all of the required automotive courses.

# NMC. Find it here.



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# Aviation

#### Associate in Applied Science Degree NMC Code 562

#### **Admission Required**

A special application for Aviation is required. Contact program advisor for details.

#### General Education Requirements Credits: 17-18

•	
Communications: ENG 111 <i>and either</i> ENG 112	
or ENG 220 or BUS 231	7-8
Humanities: Any Group 1 Course	3
Math competency: Placement into MTH 111 or higher,	
or completion of MTH 23	
Science: Any Group 1 Course with lab	4
Social Sciences: Any Group 1 course	3
*MTH 23 credits do not count toward degree requirements.	

#### **Occupational Specialty Requirements** 23 AVF 111 AVF 118 Instrument Flight I.....1 AVF 130 Instrument Flight II ......2 AVG 101 Private Ground School ......5 AVG 161 AVG 202 AVG 252

# Choose at least 24 credits from the following list

01 001	ui 303.		
AVF	141	Introduction to UAS	.3
AVF	230	Commercial Flight I	.2
AVF	232	Commercial Flight II	.3
AVF	234	Commercial Flight III	.2
AVF	241	UAS II	.3
AVF	271	Multi-Engine Flight	.1
AVF	274	Tailwheel Flight	.1
AVF	275	Seaplane Flight	.2
AVF	281	Advanced Cross Country Flight	.2
AVF	283	Upset Maneuver Training	.1
AVF	284	Instrument Flight Instructor	.2
AVF	285	Crew Resource Management Flight	.2
AVF	382	Flight Instructor Rating	.4
AVG	190	Aviation Weather	.3
AVG	204	Airline Aircraft Ground School	.3
AVG	210	UAS I	.4
AVG	231	Aviation Law	.3
AVG	240	Corporate Aviation Ground	.3
AVG	251	Commercial Ground School	.4
AVG	285	Crew Resource Dynamics	.3
AVG	381	Instructor Ground School	.5

Students seeking an AAS Degree in Aviation from NMC shall earn the required aviation credits listed for their degree or a combination of three methods:

- 1. Aviation courses listed in the NMC catalog;
- **2.** Approved transfer credit;
- **3.** NMC competency testing maximum of 17 aviation credits may be obtained through competency testing, not to include AVF 271, AVF 284, AVF 382 and AVG 381. Testing allowed only with director's approval.

To obtain the Associate in Applied Science Degree, students must complete a minimum of three flight courses listed in this catalog through the normal process for obtaining credit. All AVF and AVG courses must be completed with a 2.0 grade or higher. Please consult an aviation advisor for scheduling guidelines.

Independent study and specialty courses are also available. Examples: Airline Transport Pilot (ATP), Unmanned Systems, and Advanced Aviation topics.

Before beginning flight training, students must obtain a medical certificate from an FAA-approved doctor. Visit **www.flightphysical.com** or **www.faa.gov** for a list of FAA - approved doctors. Students must be cleared to fly by the TSA before receiving flight instruction.

#### Program Requirements

64-65



# Bridge Learning Community

Academic and Workforce Training

The NMC Bridge Learning Community is designed to transition the nontraditional adult learner into higher education or to upgrade workforce skills. This academic program offers skill set development through intensive, hands-on curricula in career exploration, student success strategies, technology and a math bootcamp refresher in a learning community environment. Learners can opt for industry-recognized Microsoft certifications while they prepare to become online and lifelong learners. Students work through a career development process emphasizing employability activities that help determine career pathways.

Found	dationa	al Bridge Classes	Credits:	10		
ENG	107	Academic Study Methods		2		
CIT	109A	Keyboarding I		2		
CIT	119	Microsoft Office - Word		3		
CIT	122A	Computer and Internet Basics I		2		
PSY	100	Career Explorations and Planning		1		
Math	Math Bootcamp0					
		+				

# **Business Administration**

#### Associate in Applied Science Degree NMC Code 105

This program prepares students for the challenges of the ever-changing world of business. Specialized courses and liberal arts studies provide students with a foundation needed to pursue careers characterized by technology, constant change, and increasing competition.

The order in which courses are taken is not critical except where prerequisites are involved. Course substitutions may be made only with the approval of the program coordinator or the academic area chair.

Students planning to pursue a four-year degree in Business Administration should follow NMC's degree requirements for the ASA degree and familiarize themselves with the requirements of the school of choice for their bachelor's degree.

Students intending to transfer to another college should take ENG 112.

Students planning to enter the business world upon completion of a two-year degree should pursue an AAS degree in Business Administration.

Gener	ral Edu	cation Requirements Credits:	17
Comn	nunicat	ions: ENG 111 <i>and</i> BUS 231	7
Huma	nities: 1	PHL 202 or PHL 201	3
Math	compet	ency: Placement into MTH 111 <i>or</i> higher,	
<i>or</i> co	mpleti	on of MTH 23	
Scienc	e: Scier	nce Group 1 course with a lab	4
Social	Science	es: ECO 201	3
Occu	oationa	al Specialty Requirements	38
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	101	Introduction to Business	3
BUS	105	Business Math	3
BUS	155	Interpersonal Communications	3
BUS	261	Business Law I	3
BUS	290	Business Administration Internship	3
CIT	100	Computers in Business-An Intro	3
CIT	210	Microsoft Office - Excel	3
MGT	241	Principles of Management	3
MGT	251	Human Resources Management	3
MKT	201	Principles of Marketing	3

**Directed Electives** (Choose any combination) Any 5 credits from the following:

CIT	124	Microsoft Office - PowerPoint	.2
CIT	170	Microsoft Office - Access	.3
CIT	213	Networking Technologies	.4
CIT	216	Computerized Accounting Systems	.2
CIT	233	Project Management.	.3
ECO	202	Principles of Microeconomics	.3
ENG	112	English Composition	.4
MGT	245	Principles of Entrepreneurship	.3
MGT	246	Entrepreneur Marketing/Finance	.4
MKT	241	Principles of Advertising	.3
MTH	111*	Intermediate Algebra	.4

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Program Requirements

# Business Administration -Online

Associate in Applied Science Degree NMC Code 105

Online Option for the General Business Concentration:

NMC offers an online alternative for students pursuing an Associate in Applied Science degree with a Business Administration - General concentration. It includes a handson internship and computer lab experiences in addition to online classes. Students are strongly encouraged to meet with an academic advisor because not all classes are offered online every semester.

Gene	ral Edu	cation Requirements Credits:	17
Comn	nunicat	tions: ENG 111 <i>and</i> BUS 231	7
Huma	nities:	PHL 202 or PHL 201	3
Math	compe	tency: Placement into MTH 111 <i>or</i> higher,	
<i>or</i> co	ompleti	on of MTH 23	
Scienc	e: Scier	nce Group 1 course with a lab	4
Social	Science	es: ECO 201	3
Occu	pation	al Specialty Requirements	38
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	101	Introduction to Business	3
BUS	105	Business Math	3
BUS	155	Interpersonal Communications	3
BUS	261	Business Law I	3
BUS	290	Business Administration Internship	3
CIT	100	Computers in Business-An Intro	3
CIT	210	Microsoft Office - Excel	3
MGT	241	Principles of Management	3
MGT	251	Human Resources Management	3
MKT	201	Principles of Marketing	3
_			

**Directed Electives** (Choose any combination) Any 5 credits from the following:

CIT	124	Microsoft Office - PowerPoint	2
CIT	170	Microsoft Office - Access	3
CIT	216	Computerized Accounting Systems	2
ECO	202	Principles of Microeconomics	3
ENG	112	English Composition	4
MTH	111*	Intermediate Algebra	4
MTH	131	Intro to Probability and Statistics	3

\*Or a higher level math course, excluding MTH 116

#### Program Requirements

If you are seeking online courses for your specific program that are not currently offered online, check out the Michigan Community College Virtual Learning Consortium at **www.mccvlc.org** for online course options.

# **Child Development**

**Certificate of Achievement (Level II)** NMC Code 002

This program is designed to be a building block program. By adding certain classes, a student may complete the requirements for an associate's degree and students may transfer to a college or university to complete a bachelor's degree. Students may also elect to stay in Traverse City and transfer to the University Center.

Receiving NMC's Certificate of Achievement (Level II) in Child Development qualifies individuals to meet the Early Childhood Lead Teacher requirements for the State of Michigan Licensing Rules for Child Care Centers. In addition, the following classes are approved by the National Child Development Associates (CDA) Program. Students completing NMC's Child Developmental certificate program and the CDA credentialing process will meet qualifications for Michigan's Licensing Rules for Early Childhood and/or School Age Care Program Director.

Students are encouraged to work closely with the Child Development coordinator to complete this certificate. A 2.0 GPA must be maintained to receive the certificate.

#### **Child Development Certificate** of Achievement Outcomes

Students completing the Child Development Certificate will be able to reliably demonstrate a working knowledge of child development from conception to twelve years of age; possess observation skills and tools to assess, evaluate, and build individualized plans for children; apply curriculum development knowledge to provide age appropriate/ multicultural activities and materials; apply environment design knowledge; demonstrate a working understanding of special need children/families in inclusion/self-contained classrooms; possess working knowledge and skills in discipline management, development of self-esteem and prosocial behaviors; apply knowledge of program management and philosophy building; apply knowledge in working with families, including diverse/multi-cultural systems.

# **Certificate Requirements**

Credits: 35-36

CD	101	Early Childhood Education3
CD	202	Human Growth and Development5
CD	203	Guiding Young Children3
CD	204	Early Childhood Curriculum3
CD	206	Infant/Toddler Development3
CD	220	Childhood Program Management3
CD	230	Early Language and Literacy3
CD	290	Service Learning Internship*2-3
ENG	111	English Composition4
PSY	101	Intro to Psychology
PSY	212	Psychology/Exceptional Child
MTH	23 or p	placement into MTH 111 <i>or</i> higher

\* This internship can be split over more than one semester.

# **Computer Studies - Computer** Information Technology - General

Associate in Applied Science Degree NMC Code 106

This program gives students comprehensive computer instruction in addition to a background in business and liberal arts. Successful associate degree graduates are qualified for entrylevel positions as computer technicians, programmers, and other information technology positions.

Students enrolled in this program will be exposed to many facets of the Computer Information Technology industry which includes programming, web development, databases, hardware, networking, and operating systems. Students will develop software using the latest programming languages and web development tools, create and develop databases using Microsoft Access and SQL, acquire skills needed to assemble/ disassemble PCs and troubleshoot hardware and software issues, configure and set up local area networks and work with the latest client and server operating systems.

#### General Education Requirements Credits: 17-18

Communications: ENG 111 and either BUS 231	
or ENG 112	7-8
Humanities: PHL 202 <i>or</i> PHL 105	3
Math competency: Placement into MTH 121 <i>or</i> higher	r,
or completion of MTH 111	
Science: Any Group 1 course with a lab	4
Social Sciences: Any Group 1 course	
(ECO 201 recommended)	3
Occupational Specialty Poquirements	62 FA

#### Occupational Specialty Requirements

Program Requirements 70-7				
CIT	290	CIT Internship*	3	
CIT	280	Systems Analysis and Design		
CIT	256	Linux Administration	3	
CIT	255	.NET Object-Oriented Programming	3	
CIT	248	SQL Server Databases	3	
CIT	215	Windows Server Environment	3	
CIT	213	Networking Technologies	4	
CIT	233	Project Management	3	
CIT	210	Microsoft Office - Excel or		
CIT	195	.NET Application Programming	3	
CIT	190	JavaScript Programming	3	
CIT	180	HTML and CSS Programming		
CIT	170	Microsoft Office - Access	3	
CIT	157	CompTIA A+® Certification II	3	
CIT	156	CompTIA A+® Certification I	3	
CIT	110	Programming Logic & Design	3	
BUS	101	Introduction to Business	3-4	
ACC	122	Accounting Principles II or		
ACC	121	Accounting Principles I	4	

\* Two competencies are required for the Internship course: a 3.0 GPA in CIT classes (with 20 credits and an overall average of 2.5 and department approval) and a keyboarding competency.

While a 3.0 GPA in CIT classes is required for this internship, an alternative, campus-based internship opportunity is available for those students who do not meet this requirement.

# Computer Studies -Computer Information Technology - Developer

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#### Associate in Applied Science Degree NMC Code 108

As everyone and everything becomes networked, the demand for software applications continues to expand. The CIT Developer program targets this need by producing graduates who are effective programmers and solution architects. The Microsoft .NET framework is utilized to deliver practical knowledge of data access and application development, with the goal of getting you as deep as possible into the patterns and practices of modern programming. A solid understanding of good design enables students to easily transition into other development platforms such as Java. Students considering transfer should see an advisor.

Gene	ral Edu	ucation Requirements Credits: 1	7-18
Com	nunica	tions: ENG 111 <i>and either</i> ENG 112	
or E	NG 22	20	7-8
Huma	anities:	PHL 105 or PHL 202	3
Math	compe	tency: Placement into MTH 121 <i>or</i> higher,	
<b>or</b> C	ompleti	ion of MTH 111	
Scien	ce: Any	Group 1 with a lab	4
(PH	Y 105	recommended)	
Social	Scienc	es: Any Group 1 course	3
(EC	O 201	recommended)	
Occu	pation	al Specialty Courses	52
BUS	101	Introduction to Business	3
BUS	155	Interpersonal Communications	3
CIT	110	Programming Logic and Design	3
CIT	170	Microsoft Office - Access	3
CIT	180	HTML and CSS Programming	3
CIT	190	JavaScript Programming	3
CIT	195	.NET Application Programming	3
CIT	208	Mobile Apps-Responsive Design	3
CIT	213	Networking Technologies	4
CIT	215	Windows Server Environment	3
CIT	218	Web App Programming ASP .NET	3
CIT	233	Project Management	3
CIT	248	SQL Server Databases	3

NMC. Find it here. 69-70

## Computer Studies -Computer Information Technology-Infrastructure

#### Associate in Applied Science Degree NMC Code 125

Students receive a comprehensive background in computer hardware, operating systems, local area networking, and internetwork routing and switching. This degree prepares students for the following internationally recognized certifications:

- CompTIA A+® IT Certification
- CompTIA Network+® Certification
- CompTIA Security+
  Certification
- Cisco CCNA (Cisco Certified Network Associate)
- MCTS Microsoft Certified Technology Specialist
- MTA Microsoft Technology Associate
- MCSA Microsoft Certified Solutions Associate

Successful associate degree graduates are qualified for entry-level positions as hardware technicians, network administrators, and infrastructure support specialists. Students considering transfer should see an advisor.

#### General Education Requirements Credits: 17-18

Communications: ENG 111 and either ENG 112	
or ENG 220	7-8
Humanities: PHL 105 or PHL 202	3
Math competency: Placement into MTH 121 or higher,	
or completion of MTH 111	
Science: Any Group 1 course with a lab	4
Social Sciences: Any Group 1 course	3
(ECO 201 recommended)	

#### **Occupational Specialty Courses**

BUS	155	Interpersonal Communications
CIT	156	CompTIA A+® Certification I
CIT	157	CompTIA A+® Certification II
CIT	160	Cisco Internetworking I4
CIT	161	Cisco Internetworking II4
CIT	213	Networking Technologies4
CIT	215	Windows Server Environment
CIT	233	Project Management
CIT	240	Network Security Management
CIT	242	Windows Client Administration2
CIT	246	Windows Server Infrastructure
CIT	247	Windows Server Administration
CIT	256	Linux Administration
CIT	260	Cisco Internetworking III4
CIT	261	Cisco Internetworking IV4
CIT	290	CIT Internship*
* Two GPA	compete in CIT	encies are required for the Internship course: a 3.0 [ classes (with 20 credits and an overall average of
2.0 i	and dep	artment approval), and a keyboarding competency.
Whi	le a 3.0	GPA in CIT classes is required for this internship,
an a	lternatio	ve, campus-based internship opportunity is avail-
able	for those	e students who do not meet this requirement.
		*

**Program Requirements** 

69-70

52

CIT

CIT

CIT

CIT

255

275

280

290

**Program Requirements** 

#### 68 www.nmc.edu

# Computer Studies -Infrastructure Specialist I

#### Certificate of Achievement (Level I) NMC Code 033

The Infrastructure Specialist I Certificate of Achievement prepares computer professionals to assemble, upgrade, maintain and repair personal computers and work with local area networks. The program is designed to prepare students for the following internationally recognized certifications:

- CompTIA A+® Certification
- CompTIA Network+® Certification
- Microsoft MCTS Certification
- Microsoft MTA Certification

#### Certificate Requirements

BUS	155	Interpersonal Communications	3
CIT	242	Windows Client Administration	2

Credits: 18

#### For CompTIA A+® Certification:

CIT	156	CompTIA A+® Certification I
CIT	157	CompTIA A+® Certification II

#### For CompTIA Network+® Certification:

CIT	213	Networking Technologies4	É
	210	rectioning rectinologies	۰.

#### For Microsoft MCTS Certification:

CIT	215	Windows Server Environment	3
	21)		5

## Computer Studies -Infrastructure Specialist II

Certificate of Achievement (Level II) NMC Code 030

Students completing the Infrastructure Specialist I Certificate may elect to continue their education and obtain a level II Certificate. The Cisco CCNA certification is an industry recognized certification in internetwork routing and switching.

Certif	icate	Requirements	Credits:	34
Comp	oletion	of Infrastructure Specialist I certific	ate	.18
CIT	160	Cisco Internetworking I		4
CIT	161	Cisco Internetworking II		4
CIT	260	Cisco Internetworking III		4
CIT	261	Cisco Internetworking IV		4

# NMC. Find it here.

# Computer Studies -Infrastructure Specialist III

Certificate of Achievement (Level III) NMC Code 024

After completing the Infrastructure Specialist II Certificate students may elect to obtain a level III certificate. The Microsoft MCTS and MCSA certifications are industry-recognized focusing in server and infrastructure environments.

#### Certificate Requirements Credits: 52

#### For Microsoft MCTS and MCSA Certification

CIT	246	Windows Server Infrastructure
CIT	247	Windows Server Administration

#### For CompTIA Security+® Certification:

#### **Occupational Requirements**

CIT	233	Project Management	3
CIT	256	Linux Administration	3
CIT	290	CIT Internship	3



# **Computer Studies -Office Applications Specialist**

#### **Certificate of Achievement (Level I)**

NMC Code 035

The Office Applications Specialist Certificate helps meet the demand for qualified and knowledgeable people in today's workplace. It helps students to acquire the desktop applications expertise and basic computer skills needed to work more productively and efficiently with Microsoft Office.

This NMC credential also serves to train candidates for the globally recognized Microsoft Specialist series of certifications. NMC is a Microsoft Office approved testing center, and the certification exams are administered at the Aero Park campus. For more information, please call (231) 995-2247.

Certificate Requirements			Credits:	16
BUS	155	Interpersonal Communications		3
CIT	119	Microsoft Office - Word		3
CIT	122A	Computer and Internet Basics I		1
CIT	122B	Computer and Internet Basics II.		1
CIT	124	Microsoft Office - PowerPoint		2
CIT	170	Microsoft Office - Access		3
CIT	210	Microsoft Office - Excel		3

Note: Students selecting this certificate program need beginning keyboarding skills.

# Computer Studies -Computer Support Specialist

#### Certificate of Achievement (Level III) NMC Code 006

Students complete course work in business and computer operations leading to a certificate. This program is designed to provide students with the necessary skills to work as support specialist or computer technician. Students will have an opportunity to acquire skills using current operating system and application software and gain experience using Local Area Networks. Students will also learn troubleshooting methodologies and develop project management skills.

Certificate RequirementsCredits: 49Completion of Office Applications Specialist Certificate ... 16

BUS	105	Business Math	3
BUS	231	Professional Communications	3
CIT	156	CompTIA A+ Certification I	3
CIT	157	CompTIA A+ Certification II	3
CIT	213	Networking Technologies	4
CIT	215	Windows Server Environment	3
CIT	233	Project Management	3
CIT	242	Windows Client Administration	2
CIT	292	Support Specialist Internship	3
ENG	220	Technical Writing	3
PHL	105	Critical Thinking	3

Note: Students selecting this certificate program need beginning keyboarding skills.



NMC. Find it here.

# **Computer Studies -Industry Certifications**

#### **Industry Certifications**

For additional information on testing and/or training for any of the certification opportunities listed below, please call (231) 995-1169 or email **CIT@nmc.edu**. NMC is an authorized Certiport, Pearson-Vue, and Prometric testing center.



**Cisco CCNA Certification** - The CCNA certification (Cisco Certified Network Associate) indicates a foundation in, and apprentice knowledge of networking. CCNA certified professionals can install, configure, operate LAN, WAN and dial access services for small networks (100 nodes or fewer), including but not limited to use of these protocols: IP, EIGRP, OSPF, Frame Relay, IP RIP, VLANs Rip, Ethernet, Access Lists.

Cisco Internetworking I through Cisco Internetworking IV are courses offered by the NMC Cisco Networking Academy and provide training for the CCNA Exam. and cryptography. Network Security Management is an NMC course that provides the necessary preparation to pass the Security+ Certification exam.

**CompTIA Strata IT Fundamentals Certification** - The CompTIA Strata IT Fundamentals certification ensures a knowledge of PC components, functionality, compatibility and related technology topics. The Strata IT Fundamentals certification is ideal for individuals and students preparing to enter the IT workforce and professionals changing careers to IT or technology-related fields. The certificate can be a stepping stone to higher certifications. Personal Computer Maintenance is an NMC course that provides the necessary preparation to pass the Strata IT Fundamentals certification exam.

# Microsoft® IT Academy Program Member

Microsoft Certified Technology Specialist (MCTS) and Microsoft Certified Solutions Associate (MCSA) are internationally recognized certifications focusing on Microsoft Windows server and infrastructure environments. Windows Server Environment, Windows Server Infrastructure, and Windows Server Administration are NMC courses that provide the necessary preparation to pass the Microsoft 70-410, 70-411, and the 70-412 certification exams.



**CompTIA A+® Certification** - The CompTIA A+® certification is the industry standard for validating vendor-neutral skills expected of an entry-level IT technician. CompTIA A+® Certification I and CompTIA A+® Certification II are NMC courses and provide the necessary preparation to pass the A+ Essentials and A+ IT Technician Certification exams.

**CompTIA Network+ Certification** - The CompTIA Network+® certification validates technical competency in network infrastructure and support. Those holding Network+ certification demonstrate critical knowledge of network concepts, network installation and configuration, network media and topologies, network management and network security. Network Technologies is an NMC course that provides the necessary preparation to pass the Network+ Certification exam.

**CompTIA Security+ Certification** - The CompTIA Security+® certification tests for security knowledge of an individual with experience in networking. The CompTIA Security+® certification validates technical competency in security and covers industry-wide topics, including networking security, compliance and operational security, threats and vulnerabilities, application, data and host security, access control and identity management,



**Microsoft Office Specialist** - Microsoft Office Specialist certification proves expertise in Microsoft applications. Holders of these credentials stand out as truly knowledgeable people. NMC'S approved Microsoft testing center offers online training classes in Microsoft Word, Excel, Access and PowerPoint.



**Microsoft Technology Associate** - Microsoft Technology Associate (MTA) certification is an entry-level credential from Microsoft that validates essential technology knowledge, enabling students to explore academic and career options, and take the first step toward building a successful career in technology. MTA certifications are embedded into the CIT Developer, CIT General, and CIT Infrastructure degree programs and certificates.
NMC Code 039

# Computer Studies -Web Developer I

### **Certificate of Achievement (Level I)**

This series of Web Developer certificates provides an introduction to both website design and website development. Visual Communication courses enable students to create visually effective sites using graphic design principles and tools. Information Technology courses provide the technical ability to develop interactive, data-driven sites and applications. Students interested in this profession are usually detail and result oriented, self-directed and enjoy working with both people and technology. The certificates may be completed as stand-alone certificates, taken in order, or applied to electives or major area requirements for an Associate in General Studies or an Associate in Applied Science.

Level	I Certi	ificate Requirements	Credits:	21
ART	131	2-D Design		3
CIT	110	Programming Logic and Design.		3
CIT	180	HTML and CSS Programming		3
CIT	190	JavaScript Programming		3
VCA	127	Digital Imaging		3
VCA	147	Web Design I		3
VCA	150	Digital Graphic Design I		3
		0 1 0		

# Computer Studies -Web Developer II

### Certificate of Achievement (Level II) NMC Code 040

Prerequisites: Completion of all Web Developer Certificate Level I courses (19 credits)

redits: 21
39
3
3
3
3
3
3

# Computer Studies -Web Developer III

Certificate of Achievement (Level III) NMC Code 041

*Prerequisites: Completion of all Web Developer Certificate Level I (19 credits) and Level II (18 credits) courses.* 

Level	Level I Certificate Requirements Credits:				
Level II Certificate Requirements					
Level	III Ce	rtificate Requirements		54	
CIT	218	Web APP Programming ASP .NET.		3	
CIT	248	SQL Server Databases		3	
CIT	255	.NET Object-Oriented Programmin	ıg	3	
CIT	291	Web Master Internship*	-	3	
VCA	246	Interactive Animation II or			
VCA	247	Web Design II	•••••	3	

\*Two competencies are required for the Internship course: a 3.0 GPA in CIT classes (with 20 credits and an overall average of 2.0 and department approval), and a keyboarding competency.

While a 3.0 GPA in CIT classes is required for this internship, an alternative, campus-based internship opportunity is available for those students who do not meet this requirement.



NMC. Find it here.

# **Construction Technology -Carpentry Technology**

### **Certificate of Achievement (Level I)**

NMC Code 061

Skilled carpenters must knowledgeably use specialized tools; read blueprints; frame structures; install doors, windows, cabinets, insulation, and finish trim; and construct roofs, decks, and stairways. Being versatile opens a wide range of employment opportunities. The curriculum is designed by the industry and aligned with national competency standards. Students receive hands on training in our state-of-the-art facilities. Information: (231) 995-2777.

Certif	icate F	Requirements	Credits:	19
CAR	101	Introduction to Carpentry	•••••	3
CAR	103	Construction Blueprint Reading		3
CAR	105	Foundations and Framing		3
CAR	121	Exterior Construction		3
CAR	125	Interior Construction		3
CMT	107	Construction Supervision		4

# **Construction Technology** -Electrical Technology

**Certificate of Achievement (Level I)** 

NMC Code 062

Qualified electricians install, troubleshoot, and repair electrical systems in residential and commercial settings. There is high demand for well-trained electricians nationwide. The curriculum is designed by the industry and aligned with national competency standards. Students receive hands-on training in our state-of-the-art facilities. This certificate program is approved by the State of Michigan to meet the electrical apprenticeship requirements. Information: (231) 995-2777.

Certi	Credits: 24		
ELE	101	Introduction to Electrical	
ELE	105	Beg. Residential Electrical	
ELE	121	Adv. Residential Electrical	
ELE	125	Pre-Commercial Electrical	
ELE	131	Commercial Electrical	
ELE	135	Adv. Commercial Electrical	
ELE	142	Industrial Electrical	
ELE	146	Adv. Industrial Electrical	



# **Construction Technology -Facilities Maintenance**

### Certificate of Achievement (Level II) NMC Code 063

Performing facilities maintenance requires knowledge in several areas. This level II certificate covers reading blueprints, general carpentry, tools of the trade, electrical wiring and schematics, and thermodynamics of refrigeration. Also required will be 14 technical elective credits that can range from drafting to alternative energy integration into a facility. The curriculum is designed by the industry and aligned with national competency standards. Students receive hands on training in our state-of-the-art facilities. Information: (231) 995-2777.

Certif	Credits:	32		
CAR	101	Introduction to Carpentry		3
CAR	105	Foundations and Framing		3
ELE	101	Introduction to Electrical		3
ELE	105	Beg. Residential Electrical		3
HVA	101	Introduction to HVAC/R		3
HVA	106	Fundamentals of Heating		3
PLU	101	Introduction to Plumbing		3
PLU	105	Plumbing Components		3
Techn	ical El	ectives (See Elective list on page 75	)	8

# Construction Technology -HVAC/R Technology

### **Certificate of Achievement (Level I)**

el I) NMC Code 064

Credits: 18

There is high demand for qualified technicians in the heating and cooling industry. HVAC/R technicians install, maintain, and repair heating, ventilating, air-conditioning, and refrigeration systems. Because of continuing demand, HVACR technicians can usually find employment with good begin-ning salaries. The curriculum is designed by the industry and aligned with national competency standards. Students receive hands on training in our state-of-the-art facilities. Information: (231) 995-2777.

### Certificate Requirements

HVA	101	Introduction to HVAC/R	3
HVA	106	Fundamentals of Heating	3
HVA	122	Basic Refrigeration Fundamentals	3
HVA	126	Residential and Commercial A/C	3
HVA	132	Commercial A/C and Refrigeration	3
HVA	136	EPA Certification.	3

# **Construction Technology -Renewable Energy Technology- Electrical**

### **Certificate of Achievement (Level II)**

NMC Code	065
Cradita	24

Certif	icate I	Requirements	Credits: 34			
EGY	101	Principles of Renewable Energy	3			
EGY	105	Sustainable Building Design	3			
EGY	115	Residential Energy Efficiency	3			
EGY	141	Solar Photovoltaic Technology I	3			
EGY	161	Wind Power Technology	3			
ELE	101	Introduction to Electrical	3			
ELE	105	Beg. Residential Electrical	3			
ELE	121	Adv. Residential Electrical	3			
ELE	125	Pre-Commercial Electrical	3			
MTH	111	Intermediate Algebra	4			
Techn	Technical Elective (See Elective list on page 75)					

# Construction Technology -Renewable Energy Technology- Electrical

Associate in Applied Science Degree NMC Code 655

Renewable energy is one of the most vital resources of the 21st century. NMC offers professional certificates and an Associate of Applied Science degree in this exciting, growing field. This degree focuses on how to harness wind and solar-generated electricity and its use by residential consumers and utilities. Among the NMC resources you'll use in the program are: mobile solar lab, four wind turbines (located at the University Center and Aero Park campuses), and 8 kw, grid-interconnected solar array. Information: (231) 995-2777.

**Program Information** 

Gener	al Edu	cation Requirements Credits: 21-2	22	
Comn	nunicati	ions: ENG 111 and either BUS 231 or		
ENC	G 112 o	<i>r</i> ENG 2207-	-8	
Huma	nities: l	PHL 202	3	
Math 6	compet	ency: Placement into MTH 140 <i>or</i> higher,		
<i>or</i> co	mpletio	on of MTH 121	4	
Scienc	e: ENV	7 103 or ENV 117 or PHY 121	4	
Social	Science	es: Any Group 1 course	3	
Techn	ical Co	ore Bequirements	٩	
FCV	101	Principles of Renewable Energy	3	
FGY	101	Sustainable Building Design	3	
FGY	115	Residential Energy Efficiency	3	
LUI	11)	Testeential Energy Enletency	5	
Electr	ical Tra	ack Requirements 1	8	
EGY	141	Solar Photovoltaic Technology I	3	
EGY	161	Wind Power Technology	.3	
ELE	101	Introduction to Electrical	.3	
ELE	105	Beg. Residential Electrical	.3	
ELE	121	Adv. Residential Electrical	.3	
ELE	125	Pre-Commercial Electrical	.3	
Any 12	2 credit	s from the approved Construction		
Techno	ology E	lective list on page 75.		
Program Requirements 60				

# Construction Technology -Renewable Energy Technology- HVAC

### Associate in Applied Science Degree NMC Code 656

Renewable Energy Technology - HVAC/R (heating, ventilation, air conditioning and refrigeration) emphasizes the use of solar and geo-thermal energy production in heating and cooling in residential applications. Among the NMC resources you'll use in the program are: mobile solar lab, geothermal heat pump lab, solar thermal system and 8 kw, grid-interconnected solar array. Information: (231) 995-2777.

Gener	al Edu	cation Requirements Credits:	21-22
Comn	nunicati	ions: ENG 111 and either BUS 231 or	
ENC	G 112 o	<i>r</i> ENG 220	7-8
Huma	nities: I	PHL 202	3
Math o	compet	ency: Placement into MTH 140 <i>or</i> higher	r, 4
Scienc	e: ENV	117 or PHY 121 or ENV 103	4
Social	Science	s: Any Group 1 course	3
Techn	ical Co	pre Requirements	9
EGY	101	Principles of Renewable Energy	3
EGY	105	Sustainable Building Design	3
EGY	115	Residential Energy Efficiency	3
HVAC	Track	Requirements	18
EGY	143	Solar Thermal Technology I	3
EGY	145	Geothermal Technology	3
HVA	101	Introduction to HVAC/R	3
HVA	106	Fundamentals of Heating	3
HVA	122	Basic Refrigeration Fundamentals	3
HVA	126	Residential and Commercial A/C	3
Any 12	2 credit	s from the approved Construction	
Techn	ology E	lective list on page 75.	
	0.		

### Program Requirements

60

# **Construction Technology -Renewable Energy Technology- HVAC**

Certif	NMC Code 060		
Certifi	icate	Requirements	Credits: 34
EGY	101	Principles of Renewable Energy.	3
EGY	105	Sustainable Building Design	3
EGY	115	Residential Energy Efficiency	3
EGY	143	Solar Thermal Technology I	3
EGY	145	Geothermal Technology	3
HVA	101	Introduction to HVAC/R	3
HVA	106	Fundamentals of Heating	3
HVA	122	Basic Refrigeration Fundamental	s3
HVA	126	Residential and Commercial A/C	23
MTH	111	Intermediate Algebra	4
Techni	ical El	lective (See Elective list on page 75.	)3

Credits

### Construction Technology Approved Electives

CAR	101	Introduction to Carpentry
CAR	102	Intro to Woodworking
CAR	103	Construction Blueprint Reading
CAR	105	Foundations and Framing
CAR	121	Exterior Construction
CAR	125	Interior Construction
CMT	107	Construction Supervision
CMT	207	Construction Cost Estimating
EET	103	Electrical Studies I
EET	$104^{*}$	Electrical Studies II
EET	221*	Industrial Controls
EET	232*	Programmable Logic Controllers
EET	233*	PLC Applications I
EET	234*	PLC Applications II
EGY	101	Principles of Renewable Energy
EGY	105	Sustainable Building Design
EGY	115	Residential Energy Efficiency
EGY	141*	Solar Photovoltaic Technology I
EGY	143	Solar Thermal Technology I
EGY	145	Geothermal Technology
EGY	151	Solar Photovoltaic Technology II
EGY	161	Wind Power Technology
ELE	101	Intro to Electrical
ELE	105	Beg. Residential Electrical
ELE	110*	Electrical Code Studies I
ELE	111*	Electrical Code Studies II
ELE	121	Adv. Residential Electrical
ELE	125	Pre-Commercial Electrical
ELE	131	Commercial Electrical
ELE	135	Adv. Commercial Electrical
ELE	142	Industrial Electrical
ELE	146	Adv. Industrial Electrical
HVA	101	Introduction to HVAC/R
HVA	106*	Fundamentals of Heating
HVA	122*	Basic Refrigeration Fundamentals
HVA	126*	Residential and Commercial A/C
HVA	132*	Commercial A/C and Refrigeration
HVA	136	EPA Certification
PLU	101	Introduction to Plumbing
PLU	105*	Plumbing Components
PLU	121*	Commercial Plumbing
PLU	125*	Plumbing Installation
WPT	110	Oxy-Fuel Process
*Deno	tes cour	ses with required prerequisites

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# Culinary Arts Great Lakes Culinary Institute

### Associate in Applied Science Degree NMC Code 109

The Great Lakes Culinary Institute believes in the principle of learning by doing. Extensive hands-on training will give you the competitive advantage in this highly competitive field.

This program is designed to provide rigorous and concentrated study for those students who plan careers in the rapidlygrowing food service industry. The program's main emphasis is to prepare students for entry-level chef and kitchen management positions. Consideration is given to the science and techniques associated with the selection, preparation, and serving of foods to large and small groups.

The Great Lakes Culinary Institute's facility is located on NMC's Great Lakes Campus. It is comprised of five culinary labs including a bakery, introductory and food skills kitchen, an advanced cooking kitchen, a garde manger kitchen, an á la carte kitchen and Lobdell's, a 90-seat training restaurant. Upon graduation, students will have an unbeatable combination of knowledge, skills and work experience.

The Great Lakes Culinary Institute is accredited by the American Culinary Federation. The Institute has been awarded *Exemplary Program* designation by the American Culinary Federation.

**Note:** Admission to the Culinary Arts program requires COMPASS test scores of Writing 70, Reading 82 or co-requisite of ENG 111 + 11, and Pre-Algebra 21. All culinary students are required to take CUL 100. A waiver may be obtained by documenting attendance at a career technical center with a minimum GPA of 2.5 and/or relevant industry experience. Students must submit appropriate documentation to department chair at least two weeks prior to the start of the semester they plan to attend.

General Education Requirements	Credits:	17-18
Communications: ENG 111 and either B	US 231	
or ENG 112		7-8
Humanities: Any Group 1 course		3
Math competency: Placement into MTH	111 <i>or</i> high	er,
or completion of MTH 23		
Science: Any Group 1 course with a lab		4
Social Sciences: Any Group 1 course		3

57

### Occupational Specialty Requirements

CIT	100	Computers in Business-An Intro	.3
CUL	100	Intro to Professional Cookery	.1
CUL	101	Today's Hospitality Industry	.3
CUL	110	Safety and Sanitation	.2
CUL	111	Professional Cookery	.6
CUL	118	Introduction to Baking	.4
CUL	121	Purchasing and Receiving	.2
CUL	190	Culinary Internship	.2
CUL	210	Nutrition for Culinary Arts	.2
CUL	211	Menu Planning	.3
CUL	213	World Cuisine	.6

95 Contemporary Service 8	& Cuisine12
18 Advanced Baking	
17 Kitchen and Dining Ro	om Mgmt3
15 Garde Manger	4
	<ol> <li>Garde Manger</li> <li>Kitchen and Dining Ro</li> <li>Advanced Baking</li> <li>Contemporary Service &amp;</li> </ol>

# **Culinary Arts** *Great Lakes Culinary Institute*

**Certificate of Achievement (Level III)** NMC Code 029 Credits: 54 **Certificate Requirements** CUL 100 Intro to Professional Cookery.....1 CUL 101 CUL 110 Safety and Sanitation.....2 CUL 111 CUL 118 Introduction to Baking......4 CUL 121 Purchasing and Receiving......2 CUL 190 Culinary Internship......2 CUL 210 Nutrition for Culinary Arts ......2 CUL 211 CUL 213 CUL 215 CUL 217 Kitchen and Dining Room Mgmt......3 CUL 218 Advanced Baking......4 CUL 295 Contemporary Service and Cuisine ......12



American Culinary Tederation Accrediting Commission



# **Dental Assistant**

### Associate in Applied Science Degree NMC Code 300

Dental Assistants are members of a highly qualified health team whose varied duties require knowledge of the basic dental sciences, proficiency in laboratory and clinical skills, and practical experience in meeting patient needs. Both the associate and the certificate programs are accredited by the Commission on Dental Accreditation (CODA) and approved by the Michigan Board of Dentistry. Completion of the program qualifies students for the state board exam and after passing the exam, they may practice as Registered Dental Assistants. In addition, program completers are eligible for the National Certification exam which is recognized nationwide.

Few jobs offer the diversity and flexibility found in dental assisting. While most dental assistants work as chairside or business assistants in general or specialty dental practices such as orthodontics or oral surgery, other career paths include the following: lab technicians; sales representatives in dental supply companies; and as teachers in vocational or college dental auxiliary programs.

Enrollment in any Dental Assistant (HDA) course requires admission to the dental assistant program OR approval from the dental assistant program director.

The following are required for admission:

- 1. High school of college transcript 2.0 minimum GPA, *or* successful GED completion
- 2. Mathematics: MTH 23\* or placement into MTH 111 *or* higher
- 3. Communications: Placement into ENG 111 *or* higher. \**MTH 23 credits do not count toward degree requirements.*

General Education Requirements	Credits: 18
Communications: ENG 111 and ENG 112	8
Humanities: Any Group 1 course	
Math competency: Placement into MTH 111 a	<b>r</b> higher, <b>or</b>
completion of MTH 23	
Science: BIO 106	4
Social Science: PSY 101	3



### Occupational Specialty Requirements

BUS 155	Interpersonal Communications or	
COM 111	Public Speaking	-4
HAH 120	Infection Control	.2
HDA 101	Introduction to Dentistry	.2
HDA 112	Dental Materials	.2
HDA 113	Dental Materials Lab	.1
HDA 120	Dental Anatomy	.3
HDA 140	Oral Pathology/Pharmacology	.2
HDA 150	Dental Office Management	.2
HDA 160	Dental Emergencies	.1
HDA 170	Preventive Dentistry	.2
HDA 240	Chairside Procedures	.5
HDA 241	Chairside Procedures Lab	.2
HDA 242	Dental Radiography	.2
HDA 243	Dental Radiography Lab 1	.5
HDA 251	Dental Assistant Internship I	.4
HDA 252	Dental Assistant Internship II	.4
HDA 282	CDA/RDA Written Exam Prep	.2
HDA 286	RDA Clinical Exam Prep	.1
HPD 110	Basic Life Support for Health Care Providers	.5
Note: A 2.0 g	grade or higher is required in HDA & HAH cour	rse

Program Requirements

42-43



# **Dental Assistant**

### Certificate of Achievement (Level II) NMC Code 070

The following coursework must be taken in order to qualify for the Certificate of Achievement in Dental Assisting. Completion of the program qualifies students for the state board exam and after passing the exam, they may practice as Registered Dental Assistants. In addition, program completers are eligible for the National Certification exam which is recognized nationwide. While the associate degree is not required for either of these exams, students can complete the associate degree after completion of the certificate.

### **Admission Requirements**

Enrollment in any Dental Assistant (HDA) course requires admission to the dental assistant program OR approval from the dental assistant program director.

The following are required for admission:

- 1. High school of college transcript 2.0 minimum GPA, *or* successful GED completion
- 2. Mathematics: MTH 23\* or placement into MTH 111 *or* higher

3. Communications: Placement into ENG 111 or higher. \*MTH 23 and ENG 99 credits do not count toward degree

### requirements.

### Placement Requirements (to complete certificate)

Math competency: Placement into MTH 111 *or* higher, *or* completion of MTH 23

Communications: Placement into ENG 111 or higher ... (4)

Certificate o	f Achievement 0	Credits: 42-43
BUS 155	Interpersonal Communications	or
COM 111	Public Speaking	3-4
HAH 120	Infection Control	2
HDA 101	Introduction to Dentistry	2
HDA 112	Dental Materials	2
HDA 113	Dental Materials Lab	1
HDA 120	Dental Anatomy	
HDA 140	Oral Pathology/Pharmacology	2
HDA 150	Dental Office Management	2
HDA 160	Dental Emergencies	1
HDA 170	Preventive Dentistry	2
HDA 240	Chairside Procedures	5
HDA 241	Chairside Procedures Lab	2
HDA 242	Dental Radiography	2
HDA 243	Dental Radiography Lab	1.5
HDA 251	Dental Assistant Internship I	
HDA 252	Dental Assistant Internship II	
HDA 282	CDA/RDA Written Exam Prep.	2
HDA 286	RDA Clinical Exam Prep	1
HPD 110	Basic Life Support for Health Ca	re Providers .5
Note: 2.0 grad	de or higher is required in HDA, H	IAH courses.

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# **Engineering Technology**

### Associate in Applied Science Degree

Computer Technology	NMC Code 545
Electronics Technology	NMC Code 557
General Technology	NMC Code 556
Marine Technology	NMC Code 541
Photonics Technology	NMC Code 559
Robotics & Automation Technology	NMC Code 544
Unmanned Aerial Systems Technology	NMC Code 542
Unmanned Ground Vehicles Technology	NMC Code 543

Engineering technology education focuses primarily on the applied aspects of science and engineering aimed at preparing graduates for practice in that portion of the technological spectrum closest to product improvement, manufacturing, construction, and engineering operational functions.

The NMC Engineering Technology degree offers students a broad based curriculum across all areas of technical education, preparing the graduates for emerging job markets and highly technical fields. The program is designed to allow students to focus on areas of interest or specialize in seven specializations; General Technology, Computer Technology, Electronics Technology, Photonics Technology, Robotics & Automation Technology, Unmanned Aerial Systems (UAS) Technology, Marine (ROV) Technology, Unmanned Ground Vehicles (UGV) Technology.

### Industry standards also require that students have First Aid/CPR certification and HAZWOPER certification.

Gener	al Edu	cation Requirements Credits: 21-22	2
Comn	nunicati	ons: ENG 111 <i>and</i> ENG 112 <i>or</i>	
ENC	G 220 o	<i>r</i> BUS 2317-8	3
Huma	nities:	PHL105	3
Math	compet	ency: Placement into MTH 140 <i>or</i> higher,	
<i>or</i> co	mpletio	on of MTH 1214	í
Scienc	e: PHY	7 105 or PHY 121 or ENV 117	í
Social	Science	: GEO 115	3
Techn	ical Sp	ecialty Requirements Credits: 19	)
Techn CIT	ical Sp 110	ecialty Requirements Credits: 19 Programming Logic & Design	<b>)</b> 3
<b>Techn</b> CIT DD	<b>ical Sp</b> 110 170	ecialty RequirementsCredits: 19Programming Logic & Design2CADD/Computer Modeling	9 3 1
<b>Techn</b> CIT DD EET	<b>ical Sp</b> 110 170 102	ecialty Requirements       Credits:       19         Programming Logic & Design	9 3 4 2
<b>Techn</b> CIT DD EET EET	ical Sp 110 170 102 103	ecialty RequirementsCredits: 19Programming Logic & Design	9 3 4 2 3
<b>Techn</b> CIT DD EET EET MFG	<b>ical Sp</b> 110 170 102 103 103	Decialty RequirementsCredits: 19Programming Logic & Design	<b>9</b> 3 4 2 3 3
Techn CIT DD EET EET MFG MFG	ical Sp 110 170 102 103 103 104	ecialty RequirementsCredits: 19Programming Logic & Design.2CADD/Computer Modeling.2Intro to Engineering Technology2Electrical Studies I2Manufacturing Processes2Fluid Power2	) 3 4 2 3 3 4

### **General Technology**

Select 20 credits from any of the 7 Specializations:

Comp	outer	Technology	Credits:	21
CIT	170	Microsoft Office – Access		3
CIT	180	HTML & CSS Programming		3
CIT	190	JavaScript Programming		3
CIT	195	.NET Application Programming		3
CIT	248	SQL Server Databases		3
CIT	255	.NET Object Oriented Programm		3
RAM	120	Robotics & Automation I		3

20

	s rechnology	Credits:	19
EET 104	Electrical Studies II		3
EET 161	Fund. of Lights & Lasers		4
EET 221	Industrial Controls		3
EET 232	Programmable Logic Controllers		3
EET 233	PLC Applications I		3
RAM 120	Robotics & Automation I		3
Marine Teo	hnology (ROV)	Credits:	20
ENV 131	Oceanography		4
RAM 120	Robotics & Automation I		3
WSI 200	GL Research Technologies		3
WSI 210	Underwater Acoustics and Sonar		3
WSI 215	Marine GIS & Data Processing		3
*ROV Syste	ems & Operations		4
Photonics	Technology	Credits:	20
EET 104	Electrical Studies II		3
EET 161	Fund. of Lights & Lasers		4
EET 212	Elements of Photonics		4
EET 221	Industrial Controls		3
DD 110	Basic Metallurgy		3
RAM 120	Robotics & Automation I		3
<b>Robotics 8</b>	Automation Technology	Credits:	18
	0.		
EET 104	Electrical Studies II		3
EET 104 EET 221	Electrical Studies II Industrial Controls		3
EET 104 EET 221 EET 232	Electrical Studies II Industrial Controls Programmable Logic Controllers		3 3 3
EET         104           EET         221           EET         232           EET         233	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I		3 3 3
EET         104           EET         221           EET         232           EET         233           RAM         120	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I		3 3 3 3 3
EET         104           EET         221           EET         232           EET         233           RAM         120           RAM         150	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II		3 3 3 3 3 3
EET         104           EET         221           EET         232           EET         233           RAM         120           RAM         150           Unmanned	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II		3 3 3 3 3
EET 104 EET 221 EET 232 EET 233 RAM 120 RAM 150 Unmanned (UAS) Tech	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems	Credits:	3 3 3 3 3 3
EET         104           EET         221           EET         232           EET         233           RAM         120           RAM         150           Unmanned         (UAS) Tech           AVF         141	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems inology Introduction to UAS	Credits:	3 3 3 3 3 <b>19</b> 3
EET         104           EET         221           EET         232           EET         233           RAM         120           RAM         150           Unmanned         (UAS)           AVF         141           AVF         241	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems mology Introduction to UAS UAS II	Credits:	3 3 3 3 3 <b>19</b> 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       150         Unmanned         (UAS)       Tech         AVF       141         AVF       241         AVG       210	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Inclogy Introduction to UAS UAS II UAS I	Credits:	3 3 3 3 3 3 <b>19</b> 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Inclogy Introduction to UAS UAS II Electrical Studies II	Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II I Aerial Systems Introduction to UAS UAS II Electrical Studies II Robotics and Automation I	Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Infology Introduction to UAS UAS II UAS I Electrical Studies II Robotics and Automation I GL Research Technologies	Credits:	3 3 3 3 3 3 3 3 3 3
EET 104 EET 221 EET 232 EET 233 RAM 120 RAM 150 Unmanned (UAS) Tech AVF 141 AVF 241 AVG 210 EET 104 RAM 120 WSI 200 Unmanned	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Incology Introduction to UAS UAS II UAS II Electrical Studies II Robotics and Automation I GL Research Technologies	Credits:	3 3 3 3 3 3 <b>19</b> 3 3 3 3 3
EET 104 EET 221 EET 232 EET 233 RAM 120 RAM 150 Unmanned (UAS) Tech AVF 141 AVF 241 AVG 210 EET 104 RAM 120 WSI 200 Unmanned (UGV) Tech	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation II Robotics & Automation II Aerial Systems Incology Introduction to UAS UAS II UAS II Electrical Studies II Robotics and Automation I GL Research Technologies	Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200         Unmanned       (UGV) Tech         AT       130	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Infology Introduction to UAS UAS II Electrical Studies II Robotics and Automation I GL Research Technologies I Ground Vehicles Infology Engine Performance I	Credits: Credits:	3 3 3 3 3 3 3 <b>19</b> 3 3 3 3 3 3 3 3 3 
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200         Unmanned       (UGV) Tech         AT       130         AT       220	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Inology Introduction to UAS UAS II Electrical Studies II Electrical Studies II GL Research Technologies Ground Vehicles Inology Engine Performance I Automotive Electrical II	Credits: Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200         Unmanned       (UGV) Tech         AT       130         AT       240	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems mology Introduction to UAS UAS II UAS II Electrical Studies II Robotics and Automation I GL Research Technologies I Ground Vehicles mology Engine Performance I Automotive Electrical II Unmanned Ground Vehicles	Credits: Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200         Unmanned       (UGV) Tech         AT       130         AT       240         RAM       120	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Inclogy Introduction to UAS UAS II UAS II Electrical Studies II Robotics and Automation I GL Research Technologies I Ground Vehicles Inclogy Engine Performance I Automotive Electrical II Unmanned Ground Vehicles Robotics & Automation I	Credits: Credits:	3 3 3 3 3 3 3 3 3 3
EET       104         EET       221         EET       232         EET       233         RAM       120         RAM       120         RAM       150         Unmanned       (UAS) Tech         AVF       141         AVF       241         AVG       210         EET       104         RAM       120         WSI       200         Unmanned       (UGV) Tech         AT       130         AT       240         RAM       120         *Remote Op       *Remote Op	Electrical Studies II Industrial Controls Programmable Logic Controllers PLC Applications I Robotics & Automation I Robotics & Automation II Aerial Systems Incology Introduction to UAS UAS II UAS II Electrical Studies II Robotics and Automation I GL Research Technologies I Ground Vehicles Incology Engine Performance I Automotive Electrical II Unmanned Ground Vehicles Robotics & Automation I perated Vehicles	Credits: Credits:	3 3 3 3 3 3 3 3 3 3

Please consult an NMC Engineering Technology program advisor for scheduling guidelines.

**Note:** Internship opportunities will be available for additional credits.

### Program Requirements Minimum credit hours: 60

# **Entrepreneurship Certificate**

Certificate of Achievement (Level I)

NMC Code 051

The Entrepreneurship certificates help students manage and market a business and take an entrepreneurial perspective of business management. They offer an entrepreneur tool set of business knowledge and practices needed for competing in today's global marketplace. These certificate courses apply to the course requirements for the Entrepreneurship Concentration of the Business Administration AAS degree.

Certifi	icate R	lequirements	Credits: 16
ACC	121	Accounting Principles I	4
BUS	101	Introduction to Business	3
BUS	105	Business Math	3
MGT	245	Principles of Entrepreneurship	3
MKT	201	Principles of Marketing	3

# **Entrepreneurship Certificate**

Certificate	of Achievement (Level II)	NMC Code 052
Level I Certi	ficate Requirements	Credits: 16
Certificate	Requirements	15
BUS 155	Interpersonal Communications.	3
BUS 261	Business Law I	3
CIT 216	Computerized Accounting Syste	ms2
MGT 246	Entrepreneur Marketing/Finance	e4
MKT 241	Principles of Advertising	3
Required El	ective Any one of the following:	
CIT 233	Project Management	3
MGT 241	Principles of Management	3
MGT 251	Human Resource Management.	3
Total Credit	s for Level II	34

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# Freshwater Studies

### Associate in Applied Science Degree

Economy and Society	NMC Code 492
Global Freshwater Policy and Sustainabil	ity NMC Code 491
Science and Technology	NMC Code 493

The Freshwater Studies program is offered by NMC's Great Lakes Water Studies Institute. The program is designed to prepare students for both current and emerging career pathways in water related fields. Students have a choice of three general streams or emphasis areas: Global Freshwater Policy and Sustainability, Economy and Society or Science and Technology. The Freshwater Studies degree program combines unique courses and opportunities for field experiences available through Northwestern Michigan College and our University partners. In addition to the partners in the Great Lakes region, our program has collaborators in selected sites overseas. This freshwater focused program has an interdisciplinary approach designed to offer students the ability to gain unique competencies and credentials of value. The core program of study includes Introduction to Freshwater Studies, Watershed Science, Geographic Information Systems (GIS), Oceanography, Meteorology and Climatology, and an Internship experience either locally or overseas. The degree is intended both for students who plan to enter professional fields as well as those who wish to further their studies and complete a bachelors degree with University partners located in Traverse City and offsite.

### General Education Requirements Credits: 17-18

Communications: ENG 111 and either BUS 231 or
ENG 112 or ENG 2207-8
Humanities: Group 1 course
Math competency: Placement into MTH 111 <i>or</i> higher,
or completion of MTH 23
Science: Science Group 1 course with a lab
Social Sciences: Group 1 course
Core Requirements** 24

	-		
ENV	117	Meteorology and Climatology	4
ENV	131	Oceanography	4
ENV	140	Watershed Science	4
GEO	115	Intro to GIS	3
PHL	105	Critical Thinking <i>or</i>	
PHL	202	Contemporary Ethical Dilemmas	3
WSI	105	Introduction to Freshwater Studies	3
WSI	290	Freshwater Studies Internship	3
		1	

### Areas of Concentration:\*\*

### **Economy and Society**

BIO 110	Essential Biology	4
BUS 101	Introduction to Business	3
ECO 201	Principles of Macroeconomics	3
MGT 241	Principles of Management	3
MGT 245	Principles of Entrepreneurship	3
MTH 131	Intro to Probability and Statistics	3
	•	

### **Global Freshwater Policy and Sustainability**

BIO	110	Essential Biology4
GEO	109	World Regional Geography
MTH	131	Intro to Probability and Statistics
SPN	202	Intermediate Spanish II or
SPN	227A	Spanish for Environmental Mgmt3-4
Sciend	ce and	Technology
BIO	115	Cell, Plant & Ecosystem Biology <i>or</i>
CHM	150	General Chemistry I or
PHY	121	General Physics I4-5
MTH	141	Calculus I
** Core	and Co	oncentration credits can also be applied

to General Education requirements.

Please consult an NMC Freshwater Studies program advisor for scheduling guidelines.

Program Requirements Minimum credit hours: 60

# NMC. Find it here.



# Law Enforcement

### Associate in Applied Science Degree NMC Code 352

Graduates of this program are eligible to take the state law enforcement officer examination. Students who anticipate transfering to a four-year college or university need to see an NMC advisor during their first semester, as some courses may be acceptable for transfer credit. Students may enroll in the Law Enforcement Preservice Police Academy upon completing first year requirements or with a college degree. Completion of the Police Academy (LWE courses) must occur within two semesters, beginning fall semester and completed the following spring semester. A minimum grade of 2.0 must be achieved in each LWE course, satisfying prerequisites for licensing and qualifying the student to take the state examination to be hired by a law enforcement agency, which activates the license. The Police Academy is approved and regulated by the Michigan Commission on Law Enforcement Standards (MCOLES).

It is mandatory that students meet with the Law Enforcement Coordinator prior to beginning LWE courses to register with MCOLES. Students must pass MCOLES reading/writing and physical agility tests prior to starting the LWE courses. Visit **www.michigan.gov/mcoles** for online registration or call (231) 995-1283 with questions.

Gener	ral Edu	cation Requirements	Credits:	18
Comn	nunicat	ions: ENG 111 <i>and</i> ENG 112		8
Huma	nities: ]	PHL 201 <i>or</i> PHL 202		3
Math	compet	ency: Placement into MTH 111 or	• higher,	
<i>or</i> cc	mpleti	on of MTH 23	C .	
Scienc	e: Any	Group 1 course with lab		4
Social	Science	es: PLS 101 or PLS 132		3
Core	Requir	ements		13
CI	101	Introduction to Criminal Justice		4
PŠY	101	Introduction to Psychology		3
PSY	250	Abnormal Psychology or		
SOC	231	Deviance and Criminal Behavior		3
SOC	101	Introduction to Sociology		3
Occuj	pationa	al Specialty Requirements		39
HAH	200	Emergency Assessment and Interve	ention	3
LWE	102	Police Operations		4
LWE	210	Cultural Awareness/Diversity		2
LWE	212	Criminal Investigation		3
LWE	214	Firearms		4
LWE	215	Defensive Driving		3
LWE	216	Traffic Enforcement and Investigat	tion	3
LWE	218	Physical Training/Wellness		4
LWE	225	Defensive Tactics		4
LWE	226	Michigan Criminal Law		3
LWE	227	Criminal Procedures		3
LWE	228	Speed Measurement/PBT		3
Recor	nmenc	led Courses:		
LWE	195*	Police Practicum		4

\* Recommended for students with no police field experience.

70

### Program Requirements

82

# **Manufacturing Technology**

### Associate in Applied Science Degree NMC Code 584

The Manufacturing Technology program is designed to provide a multi-disciplined technical background in fields for which NMC does not offer a specific program. For instance, students interested in pursuing careers in Advanced Manufacturing or Welding may enroll in the Manufacturing Technology program and design a model schedule that emphasizes their major area of interest. The program has the flexibility to match the student's interest with the skills necessary for job entry.

Students, with assistance from an advisor, will select a major area of technical emphasis. These technical courses plus supporting courses from other disciplines comprise the Manufacturing Technology degree requirements.

Each student's proposed Manufacturing Technology program must be approved by a committee consisting of the appropriate Department Head, the Academic Chair, and the Registrar.

General Education Requirements Credits:	17-18
Communications: ENG 111 and either BUS 231 or	
ENG 112* <i>or</i> ENG 220	7-8
Humanities: Any Group 1 course	3
Science: Any Group 1 course with a lab	4
Social Sciences: Any Group 1 course	3
Math competency: Placement into MTH 111 or highe or completion of MTH 23	er,
* Students intending to transfer to another college or universe should take ENG 112.	ersity
Occupational Specialty Requirements	39

Flectives	4-0
Choose any courses from Group 1 and/or Group 2.	4-5
Program Requirements	60-65



# Maritime Great Lakes Maritime Academy

### **Bachelor of Science - Maritime Technology**

NMC Code 850 / 851

The Great Lakes Maritime Academy is more than just a college experience. As Michigan's State Maritime Academy, our college educates and trains the finest Deck and Engineering Officers available to the commercial shipping industry.

As you learn more about us, you will discover a professional environment based on pride and tradition. The Academy prepares future merchant marine officers/business professionals for the challenge of operating ships of unlimited tonnage. Our training ship, *State of Michigan*, is utilized daily as a floating classroom and hands on learning environment. We set sail with our ship at various times throughout the academic year to reinforce the skills taught shoreside. As cadets progress through the Academy, they learn our industry first hand by completing essential sea time aboard the training ship and commercial vessels of the Great Lakes and oceans.

Cadets earn their maritime credentials and a Bachelor's degree. We offer a condensed core maritime curriculum for those who enter with a Bachelor's degree. Cadets are prepared to write the U.S. Coast Guard examination for licensing as Third Mate Great Lakes and Oceans Unlimited Tonnage and First Class Great Lakes Pilot (Deck Officer), or Third Assistant Engineer, Steam and Motor Vessels of any Horsepower (Engineering Officer). Graduates are fully compliant with Standards of Training, Certification and Watchkeeping (STCW).

Great Lakes Maritime Academy is proud of the quality education and training we have provided since 1969. Curricula range from seamanship, navigation and piloting to steam and diesel engineering together with up to 300 days of sea time. Our alumni sail with the fleets of the Great Lakes and oceans with many having reached the pinnacle of their professions as a Captain or Chief Engineer. With exceptional employment and salaries upon graduation, the time is now to consider a career as a professional mariner. The Admissions Office is open weekdays from 8:00 am to 5:00 pm. Please visit **www.nmc.edu/maritime** for additional information.

This program is approved by the U.S. Maritime Administration, the U.S. Coast Guard, and the Michigan Department of Education. A new class begins each year in mid August (Pre-Fall semester).

### ADMISSION REQUIREMENTS

Admission to the Great Lakes Maritime Academy **requires** candidates meet the following:

- 1. Minimum age 17, with high school diploma or GED.
- 2. United States Citizen
- **3.** Academic placement at Freshman English and Intermediate Algebra level determined by minimum composite ACT score of 20, SAT score of 1440, transferrable college credits or COMPASS placement testing.
- 4. No misdemeanors, felonies or legal expungements.

Acceptance to the Great Lakes Maritime Academy is competitive, with the incoming class of 60 cadets beginning in the fall of each year. Admissions decisions are made without regard to age, sex, martial status, national origin, or ethical/racial background. Applicants may apply at **www.nmc.edu/maritime** to submit online application. An application checklist is provided. If you have questions, please call the Maritime Admissions Office at (231) 995-1213 or (231) 995-1209.

### GENERAL PROGRAM REQUIREMENTS

In addition to NMC rules and regulations, Maritime cadets must comply with the rules and regulations specified under the "Maritime Cadet Rules and Regulations."

### DEPARTMENT OF NAVAL SCIENCE

The Department of Naval Science is staffed by an active duty Naval officer. The Department offers training designed to acquaint the cadet with the mutual dependence of the Navy and the Merchant Marine in accomplishing their common objectives through the MNS 100 course. Additionally, Strategic Sealift Officer Program (SSOP) Midshipmen will receive Navy professional development training through the MNS 200 and MNS 250 courses. Upon completion of the SSOP, graduates will be commissioned as an Ensign in the United States Navy Reserve.

### **GRADUATION REQUIREMENTS**

In addition to NMC graduation requirements, Maritime Academy cadets must:

- **1.** Successfully complete all components of the program.
- 2. Pass the U.S. Coast Guard license exam.
- **3.** Achieve a 2.0 (76%) grade or higher in all courses.

### CURRICULUM

The Great Lakes Maritime Academy and NMC offer two bachelor degree programs of study:

- Bachelor of Science Maritime Technology: Deck Officer
- Bachelor of Science Maritime Technology: Engineering Officer

Each program provides the cadet with a background in mathematics, physical science, humanities, and social studies in addition to the maritime curriculum.

Federal regulations require that each cadet obtain up to 300 sailing days of practical training as a cadet observer aboard ship. Sea time is arranged by the Academy and spread over the program. In addition to shipboard duties, the cadets are required to complete written assignments, sea projects, for evaluation and grading. Great Lakes Maritime reserves the right to revise the program in accord with industry needs and government agency requirements.

The following program requirements are for a high school graduate or a person without transfer credits from another institution. A condensed maritime curriculum for students with a bachelor's degree is available.

# Maritime - Deck Officer Great Lakes Maritime Academy

### **Bachelor of Science Maritime Technology**

NMC Code 850

General Edu	cation Requirements Credits: 35-38	
Communications: ENG 111 and ENG 1128		
Humanities: PHL 202 <i>and</i> one additional		
Math compet	ency: Placement into MTH 141 <b>or</b> higher	
ar completi	on of MTH 121 and MTH 122 7	
Science: ENV	V 117 and PHV 105	
Social Science	:: ECO 201 <i>and</i> ECO 202	
Occupationa	al Specialty Requirements 85	
MDK 100	Survival at Sea1	
MDK 104	Rigging and Ship Maintenance Lab1	
MDK 106	Watchstanding I1	
MDK 112	Rules of the Nautical Road2	
MDK 121	Navigation I	
MDK 122	Navigation I Lab1	
MDK 149	Damage Control & Safety2	
MDK 200	Ship Business & Labor Relations	
MDK 206	Watchstanding II1	
MDK 210	Sea Project Deck	
MDK 221	Lakes Piloting	
MDK 222	River Piloting	
MDK 242	Ship Stability	
MDK 311	Sea Project Deck	
MDK 312	Sea Project Deck	
MDK 324	Navigation III	
MDK 330	STCW Elementary First Aid2	
MDK 331	Electronic Navigation	
MDK 332	Electronic Navigation Lab1	
MDK 333	Automatic Radar Plotting Aids1	
MDK 341	Ship Construction	
MDK 345	Dry Cargo Stowage	
MDK 404	Marine Supervisory Lab	
MDK 411	Marine Communications	
MDK 431	ECDIS	
MDK 444	Cargo Systems	
MDK 445	Liquid Cargo Stowage	
MDK 446	Bridge Team Management	
MDK 448	Pilot/Mate License Prep	
MDK 454	GMDSS	
MGT 241	Principles of Management	
MNG 100	Intro to Marine Engineering	
MNG 105	Shipboard Systems	
MNS 100	Naval Science	
Program Requirements Minimum credit hours: 120		



# Maritime - Engineering Officer Great Lakes Maritime Academy

### **Bachelor of Science Maritime Technology**

NMC Code 851

General Edu Communicat	cation RequirementsCredits:cions: ENG 111 and either ENG 112	24-25
<i>or</i> ENG 22	0	7-8
Humanities:	PHL 202	3
Math compet	tency: Placement into MTH 141 <i>or</i> highe	r, –
or completi	on of M1H 121 <i>and</i> M1H 122	7
Science: CHI	M 101	4
Social Science	e: PLS 101	
Occupationa	al Specialty Requirements	95-96
MDK 100	Survival at Sea	1
MDK 149	Damage Control & Safety	2
MDK 250	Stability for the Engineer	1
MDK 330	STCW Elementary First Aid	2
MDK 341	Ship Construction	2
MNG 100	Intro to Marine Engineering	1
MNG 104	Engine Systems Graphics	3
MNG 105	Shipboard Systems	3
MNG 110	Engineering Mechanics	3
MNG 234	Electronic Fundamentals	4
MNG 250	Unloading Systems	3
MNG 260	Maritime Machining	2
MNG 271	Maritime Welding	2
MNG 275	Refrigeration	3
MNG 314	Diesel Engineering	7
MNG 317	Engineering Sea Project I	3
MNG 318	Engineering Sea Project II	6
MNG 319	Engineering Sea Project III	6
MNG 321	Marine Boilers	3.5
MNG 322	Marine Turbines	2.5
MNG 323	Steam Lab	1
MNG 335	Electric Machines and Controls	4
MNG 336	Electric Machines & Controls Lab	2
MNG 455	Watchstanding	2
MNG 466	Engine Room Business	2
MNG 496	License Preparation Engine	2
MNS 100	Naval Science	2
GLMA	Program Electives	21-22
Program Re	quirements Minimum credit hour	s <sup>.</sup> 120



**Program Information** 

# Maritime - Power Plant Facilities Operator Great Lakes Maritime Academy

### Associate in Applied Science Degree NMC Code 554

The Power Plant Facilities Operator Program is designed to prepare individuals for the maintenance and power production industries such as power plants, hospitals, industrial plants, and manufacturing plants. Operators in such industries read, interpret and adjust meters and gauges to make sure plant equipment and processes are working properly. Some operate chemical-feeding devices, take samples of the water or liquid waster, perform chemical and biological laboratory analysis and adjust the amount of chemicals such as chlorine in the water. Some use a variety of instruments to sample and measure water quality and common hand and power tools to make repairs. Operators also make repairs to valves, pumps and other equipment. As facilities become more sophisticated and industry demands more from those individuals who maintain and operate these physical plants, there is a need for intense technical training for these positions. Students at the Great Lakes Maritime Academy obtain these goals through classes in mathematics, science and occupational courses. Cadets also have hands-on experience through labs and internships for practical training.

General Education Requirements	Credits:	24-25
Communications: ENG 111 and either E	NG 112	
or ENG 220		7-8
Humanities: Any Group 1 Course		3
Math competency: Placement into MTH 1	41 <i>or</i> high	er,
or completion of MTH 121 and MTH 1	22	7
Science: CHM 101 or PHY 105		4
Social Science: Any Group 1 Course		3

Occupation	al Specialty Requirements	54
MGT 241	Principles of Management	3
MNG 100	Intro to Marine Engineering	1
MNG 104	Engine Systems Graphics	3
MNG 105	Shipboard Information Systems	3
MNG 110	Engineering Mechanics	3
MNG 234	Electronic Fundamentals	4
MNG 250	Unloading Systems	3
MNG 270	Issues in Power Production	3
MNG 275	Refrigeration	3
MNG 290	Power Systems Internship	5
MNG 314	Diesel Engineering	7
MNG 321	Marine Boilers	
MNG 322	Marine Turbines	2.5
MNG 323	Marine Steam Lab	1
MNG 335	Electric Machines and Controls	4
MNG 336	Electric Machines and Controls Lab	2
Elective Cred	lits	3
Recommended Elective		
MGT 251	Human Resource Management	3
Program Requirements		76-79





# Nursing - Associate Degree Program Requirements

Associate Degree in Nursing

NMC Code 302

Nursing Students admitted to the nursing program prior to fall 2009 must follow the catalog requirements in effect the year they began unless they are returning as re-admitted students.

The NMC Associate Degree in Nursing (ADN) offers students the advantage of college-level academic and professional instruction in the classroom and clinical areas, and the preparation needed for employment after graduation. The associate degree program is a two-year course of study that begins each fall and spring semesters. All nursing courses in the ADN program must be completed within five years. Student clinical experiences may include assignments at Munson Medical Center and a variety of other agencies.

The program is approved by the Michigan Board of Nursing. Graduates are eligible to apply for the National Council Licensure Examination (NCLEX-RN) for licensing as a registered nurse.

### ADMISSION REQUIREMENTS

Enrollment in any Nursing (HNR) course requires admission to the nursing program OR approval of the nursing department director. HNR 100 and HNR 108 may be taken ahead of program admission if course prerequisites are met. Consideration for admission is on a "competitive" basis and requires satisfactory completion of program prerequisites. Space in the nursing program is limited. Completion of prerequisites does not guarantee admission to the nursing program. Submit completed applications to the Admissions Office by February 1 for Fall semester (August) and July 1 for Spring semester (January).

### The following are required for application:

**1.** A 2.5 college GPA.

- **2.** A 2.0 grade or above in each of the following prerequisite courses and/or demonstrated competency or equivalent college course transfer:
  - English Composition (ENG 111)
  - Introduction to Psychology (PSY 101)
  - Introductory Chemistry (CHM 101) or equivalent college chemistry course with a 2.0 GPA or above within ten years of program entry. Students with a year of high school chemistry (with a combined GPA of 2.5 or above) or college chemistry older than 10 years may waive the CHM 101 requirement by passing the Chemistry competency examination.
- **3.** Human Anatomy and Physiology I (BIO 227), with a 2.5 GPA, within five years of program entry or successfully complete a competency exam.
- 4. COMPASS Test Scores:
  - Math-66 or above in Algebra
  - COMPASS students must place into MTH 121-College Algebra. If not, students must take MTH 111-Intermediate Algebra (or equivalent course work) within five years of program entry.

- 5. ACT Test Scores:
  - ACT of 24 in math within five years of program entry.
  - ACT of 19 in reading and 18 in writing, (or equivalent course work) within five years of program entry.

**Note:** Any math and/or science class may only be repeated once. This includes fails, drops, audits or transferred classes.

# Recommended courses to take prior to Nursing Program Admission

- BIO 228 Human Anatomy and Physiology II with a 2.5 GPA, within five years of program entry.
- BIO 240 Normal and Clinical Nutrition
- PHL 202 Contemporary Ethical Dilemmas
- ENG 112 English Composition
- HPD 110 Basic Life Support for Health Care Workers (CPR) Equivalent classes are: American Red Cross Professional Rescuer or AHA Health Care Provider. Current CPR certification must be documented by the start of the first clinical day, and maintained throughout the program.

### **GENERAL INFORMATION**

- A physical examination and completion of the Certificate of Health documenting good mental and physical health is required prior to clinical course work.
- Criminal Background Checks are now required on all students entering the Associate Degree of Nursing and the Practical Nursing programs at Northwestern Michigan College. This is due to the change in legislation that requires Criminal Background Checks be completed for cer tain health care institutions. The background check will be required by Northwestern Michigan College upon admission to the program and prior to the beginning of the first course. The costs associated with this background check will be the sole responsibility of the nursing student.
- The Board of Nursing may deny a license for a previous felony conviction, previous treatment for drug or alcohol abuse or after finding the existence of one or more grounds for board action listed in 333.16221 of the Public Health Code, Act 368 of 1978.
- The clinical facilities have the right to accept or reject a student. This action could result in a student being delayed or unable to complete the nursing program. This decision may be made just prior to the clinical rotation.
- Nursing program tuition is charged by the contact hour.

General Education Requirements	Credits:	23-25
Communications: ENG 111 and ENG 112		6-8
Humanities: PHL 202		3
Math competency: Placement into MTH 12	1 or highe	er,
or completion of MTH 111		
Science: BIO 227, BIO 228**, BIO 240		11
Social Sciences: PSY 101		3

Nursing Spe	cialty Requirements Credits: 45		
HAH 100C	Informatics Essentials1		
HNR 100	Introduction to Nursing1		
HNR 101	Fundamentals of Nursing-Lecture4		
HNR 102	Fundamentals of Nursing-Clinical4		
HNR 108	Pharmacology		
HNR 125	Nursing Across the Lifespan-Lecture		
HNR 126	Nursing Across the Lifespan-Clinical		
HNR 241	Adv. Maternal Child Nursing-Lecture		
HNR 242	Adv. Maternal Child Nursing-Clinical2		
HNR 247	Nrsg Mgmt of Complex Patients I-Lecture3		
HNR 248	Nrsg Mgmt of Complex Patients I-Clinical4		
HNR 251	Mental Health Nursing-Lecture2		
HNR 252	Mental Health Nursing-Clinical1		
HNR 261	Nrsg Mgmt of Complex Patients II-Lecture 3		
HNR 262	Nrsg Mgmt of Complex Patients II-Clinical4		
HPD 110	Basic Life Support for		
	Health Care Providers*, **		
* Equivalent algence and American Ded Curre Dustanian al			

\* Equivalent classes are: American Red Cross Professional Rescuer or AHA Health Care Provider \*\*These credits do not count toward degree requirements.

**Note:** A 2.0 grade or higher is required in all Nursing (HNR) courses. A minimum of 68 credits are required to receive the Associate Degree in Nursing. Any HNR course failure counts as a program fail and requires readmission. A second course failure is a program dismissal.

**Program Requirements** 

68-70

### **Online Nursing Option**

NMC admits students to an online version of its traditional nursing curriculum each fall. This option is intended for full-time ADN students. It provides all of the nursing theory of academic classes available in an online format. It will still require attendance in person for the lab and clinical courses. The labs and clinical courses are generally scheduled in the Traverse City area and will require 2-3 days per week of attendance.

Once you begin the online option, the college will ensure that the online courses will be available until you complete the program as long as the full-time model schedule is followed.

If you need to change from the full-time plan or your studies become out of sequence for any reason, you will need to move into the traditional program.



### Nursing - ADN Completion Program Completion Program for Licensed NMC (

### Completion Program for Licensed Practical Nurses

NMC Code 302

The ADN-Completion Program for Licensed Practical Nurses is designed to expand upon the previous education of the LPN. Upon completion of all non-nursing required course work, the LPN who has current clinical work experience in acute or extended care or who has graduated within the past three years can complete the nursing course work in two semesters. The technology and patient acuity in the agencies utilized for clinical course work have changed greatly in recent years. Recent experience in these settings is important to the success of students pursuing this course work.

Student clinical experiences may include assignments at Munson Medical Center and a variety of other agencies. The program is approved by the Michigan Board of Nursing. Graduates are eligible to apply for National Council Licensure Examination (NCLEX-RN) for licensing as a registered nurse. NMC utilizes hospital and non-hospital based clinical sites to meet the requirements for completion of the program.

NMC's program is approved by the Michigan Board of Nursing. Graduates are eligible to apply for the National Council Licensure Examination (NCLEX-RN) for licensing as a registered nurse.

### ADMISSION REQUIREMENTS

Enrollment in any Nursing (HNR) course requires admission to the nursing program and/or approval of the nursing department director. Consideration for admission is on a rolling basis and requires satisfactory completion of program prerequisites. Space in the program is limited. Completion of prerequisites does not guarantee admission to the nursing program. Should qualified applicants exceed space available, competitive admission criteria may apply. Completed applications must be submitted to the Admissions Office by February 1 for Fall semester (August) and July 1 for Spring semester (January).

### The following are required for application:

- 1. Current Michigan LPN license.
- **2.** Graduation from an accredited Practical Nursing Program with evidence of an official transcript with an overall GPA of 2.0 or above. Applicants must have work experience in the field of nursing or clinical coursework within the last three (3) years. Applicants who do not meet the work experience criteria will be required to complete the first year nationally normed nursing exam with a minimum competency as identified by the testing service before progressing in the program. If this minimum competency is not achieved, HNR 126 will be required. Additional assessments may be used to determine course placement.
- **3.** CHM 101 or equivalent college chemistry course at 2.0 GPA or higher within ten years of program entry. Students with a year of high school chemistry (with a combined grade of 2.5 or above) or college chemistry older than ten years may waive the CHM 101 requirement by passing the Chemistry competency examination. *(continued)*

### **2014 - 2015 NMC CATALOG** To apply, use the three-digit NMC Code on your admissions application.

- **4.** COMPASS Test scores: Math-66 or above in Algebra (or equivalent course work) within five years of program entry. Students must place into MTH 121-College Algebra. If not, students must take MTH 111-Intermediate Algebra.
- 5. Completion of all General Education Requirements, as identified on the following pages, with an overall GPA of 2.0 or above. In addition to the overall GPA requirement, a minimum of 2.5 or higher in BIO 227 and BIO 228 (BIO 227 and BIO 228 within five years of program entry or successful completion of a competency exam), a minimum grade of 2.0 is required in ENG 111 and PSY 101.

**Note:** Any math and/or science class may only be repeated once. This includes fails, drops, or transferred classes.

### **GENERAL INFORMATION**

- A physical examination and completion of the Certificate of Health documenting good mental and physical health is required prior to clinical course work.
- Criminal Background Checks are now required on all students entering the Associate Degree of Nursing and the Practical Nursing programs at Northwestern Michigan College. This is due to the change in legislation that requires Criminal Background Checks be completed for certain health care institutions. The background check will be required by Northwestern Michigan College upon admission to the program and prior to the beginning of the first course. The costs associated with this background check will be the sole responsibility of the nursing student.
- The Board of Nursing may deny a license for a previous felony conviction, previous treatment for drug or alcohol abuse or after finding the existence of one or more grounds for board action listed in 333.16221 of the Public Health Code, Act 368 of 1978.
- The clinical facilities have the right to accept or reject a student. This action could result in a student being delayed or unable to complete the nursing program. This decision may be made just prior to the clinical rotation.
- Nursing program tuition is charged by the contact hour.

### **General Education Requirements** Credits: 23-25 Communications: ENG 111 (2.0 or higher)

Communications. Erver i i (2.0 or inglier)
and ENG 112
Humanities: PHL 202
Math competency: Placement into MTH 121 <i>or</i> higher,
or completion of MTH 111)
Science: BIO 227, 228**, 24011
Social Sciences: PSY 101

- \* These credits do not count toward degree requirements.
- \*\* For an equivalent transfer of BIO 227 and BIO 228 from another institution, students must have completed a full year of Anatomy and Physiology, and one semester of Microbiology with a 2.5 grade or higher within five years of program entry.

### Nursing Specialty Requirements Credits: 45

**Note:** Credit for the practical nursing level course work (HNR 100-145) must be established prior to admission to the program. At least 23 nursing credits must be established through NMC course completion or transfer equivalencies to meet the program requirements. Additional course work may be required and will be arranged by the Nursing Director if needed.

HAH	100C	Informatics Essentials(1)
HNR	241	Adv. Maternal Child Nursing-Lecture
HNR	242	Adv. Maternal Child Nursing-Clinical2
HNR	247	Nursing Management of Complex
		Patients I-Lecture
HNR	248	Nursing Management of Complex
		Patients I-Clinical
HNR	251	Mental Health Nursing-Lecture2
HNR	252	Mental Health Nursing-Clinical1
HNR	261	Nursing Management of Complex
		Patients II-Lecture
HNR	262	Nursing Management of Complex
		Patients II-Clinical
HPD	110	Basic Life Support for
		Health Care Providers*(0.5)

\* Equivalent classes are: American Red Cross Professional Rescuer or AHA Health Care Provider

**Note:** A 2.0 grade or higher is required in all Nursing (HNR) courses. A minimum of 70-72 credits are required to receive the Associate Degree in Nursing.

Program Requirements 68-70



# **Nursing - Practical**

### Certificate of Achievement (Level II) NMC Code 010

Northwestern Michigan College's Practical Nursing Program is a two-semester certificate program after prerequisites are met. It is designed to give the student basic health care provider skills which will enable them to become eligible to take the National Council Licensure Examination (NCLEX-PN). After successfully completing the NCLEX-PN exam, students are able to enter the work force in various healthcare settings. License Practical Nurses often work in offices, long-term care and home health care facilities. All nursing courses must be completed within five years.

The program is approved by the Michigan Board of Nursing.

Graduates of this program are eligible to apply for the National Council Licensure Examination (NCLEX-PN) for licensing as a Practical Nurse.

### ADMISSION REQUIREMENTS

Enrollment in any Nursing (HNR) course requires admission to the nursing program OR approval of the Nursing Program Director. HNR 100 and HNR 108 may be taken ahead of program admission if course prerequisites are met and space available. Program admission is on a competitive basis and requires satisfactory completion of all program prerequisites. Space in the program is limited. Completion of prerequisites does not guarantee admission to the Nursing Program.

Should qualified applicants exceed space available, competitive admission criteria may apply. Completed applications must be submitted to the College Admission Office by February 1 for Fall semester (August) and July 1 for Spring semester (January).

### The following are required for application:

- **1.** \*2.0 college GPA.
- 2. \*COMPASS test scores: Reading-82 or above, Writing-70 or above, Math-66 on Algebra (or equivalent coursework) within five years of program entry. Students must place into MTH 121-College Algebra. If not, students must take MTH 111-Intermediate Algebra, OR have an ACT score of 19 for reading and writing, and math ACT of 24. (Reading and writing COMPASS scores are required for students who do not transfer equivalent courses)
- **3.** Courses required for admission consideration.
  - \*CHM 101 competency or equivalent college chemistry course at a 2.0 or higher within ten years of program entry. Students with a year of high school chemistry (with a combined grade of 2.5 or above) or with college chemistry older than 10 years, may waive the CHM 101 requirement by passing the Chemistry competency exam.
  - \*BIO 227-Anatomy and Physiology I 2.5 GPA required. Must be taken within five years of program entry. If not, students may retake BIO 227 and BIO 228 or successfully complete a competency exam. BIO 227 has specific prerequisites that may require additional coursework.
  - For an equivalent transfer of BIO 227 and BIO 228

from another institution, students must have completed a full year of Anatomy and Physiology, and one semester of Microbiology with a 2.5 grade or higher within five years of program entry.

- 4. Courses recommended to be completed prior to starting the PN program.
  - BIO 228-Anatomy and Physiology II with a 2.5 GPA required.
  - BIO 240-Normal and Clinical Nutrition
  - HPD 110-BLS for Health Care Providers

### \* Eligible for wait list once these prerequisites are completed.

Note: Any math and/or science class may only be repeated once. This includes fails, drops, or transferred classes.

### **GENERAL INFORMATION**

- A physical examination and completion of the Certificate of Health documenting good mental and physical health is required prior to clinical course work.
- Criminal Background Checks are now required on all students entering the Associate Degree of Nursing and the Practical Nursing programs at Northwestern Michigan College. This is due to the change in legislation that requires Criminal Background Checks be completed for certain health care institutions. The background check will be required by Northwestern Michigan College upon admission to the program and prior to the beginning of the first course. The costs associated with this background check will be the sole responsibility of the nursing student.
- The Board of Nursing may deny a license for a previous felony conviction, previous treatment for drug or alcohol abuse or after finding the existence of one or more grounds for board action listed in 333.16221 of the Public Health Code, Act 368 of 1978.
- The clinical facilities have the right to accept or reject a student. This action could result in a student being delayed or unable to complete the nursing program. This decision may be made just prior to the clinical rotation.
- Nursing program tuition is charged by the contact hour.

### **Certificate Requirements**

- Credits: 35 Human Anatomy & Physiology I with Lab ... 4 BIO 227 228 Human Anatomy & Physiology II with Lab..4 BIO BIO 240 HNR 100 Introduction to Nursing.....1 HNR 101 Fundamentals of Nursing-Lecture ......4 HNR 102 Fundamentals of Nursing-Clinical......4 HNR 108 HNR 125 Nursing Across the Lifespan-Lecture ......5 HNR 126 Nursing Across the Lifespan-Clinical......5 HNR 145 Practical Nursing Role & Issues......1 HAH 100C Informatics Essentials ...... 1 HPD 110 Basic Life Support for Health Care Providers\*.....(0.5)
- \* Equivalent classes are: American Red Cross Professional Rescuer or AHA Health Care Provider

Note: A 2.0 grade or higher is required in all Nursing (HNR) courses.

# Plant Science

### Associate in Applied Science Degree

Fruit Production	NMC Code 581
Landscape & Nursery	NMC Code 582
Viticulture	NMC Code 580

NMC and MSU offer a joint program that can lead to an Associate in Applied Science Degree in the areas of Viticulture, Commercial Horticultural Operations or Landscape and Nursery through NMC. Students dual enroll with NMC and MSU at the University Center. After completing a minimum of 52 hours in the program, a certificate is awarded from the MSU, Institute of Agricultural Technology. Upon meeting the program requirements for the AAS, student may transfer to the MSU East Lansing Campus as a junior to complete a Bachelor of Science degree. AAS Degree is awarded upon completion of MSU certificate and the following additional NMC courses. See your MSU advisor prior to enrolling each semester.

### **College of Agriculture and Natural Resources**

2200 Dendrinos Drive, Suite 203, Traverse City, MI 49684 Phone: (231) 995-1719 Email: matchet4@msu.edu

General Education Requirements Credits: 18-19
Communications: ENG 111 and ENG 1128
Humanities: Any Group 1 course,
(HST 111 or HST 112 are recommended)
Math competency: Placement into MTH 111 <i>or</i> higher,
or completion of MTH 23
Science: BIO 108
Social Science: ECO 201 or ECO 202
Occupational Specialty Requirements 20-22

CHM 101 Introductory Chemistry (CHM 150 General
Chemistry required if students elect to pursue a
Bachelor's degree)
CIT 100 Computer in Business-An Intro (or equivalent)3
Electives (see program coordinator for
appropriate selection)13-15

**Note:** A minimum of 15 of the 60 credits must be completed at NMC.

### MSU Applied Plant Science Requirements

AT	293	Professional Internship in Ag Technology	.3
CSS	210	Fundamentals of Soil Science	.3
ENT	110	Applied Entomology of Economic Plants	.3
ESA	225	Land & Environ. Issues in Law and Policy	.3
HRT	213	Landscape Maintenance	.2
HRT	215	Landscape Industries Seminar	. 1
HRT	218	Landscape Irrigation	.3
PLP	200	Plant Diseases and their Pathogens	.3
Comn	nercial l	Horticulture Operations core & electives <i>or</i>	.9
Landscape and Nursery core and electives9			

30

### **MSU Viticulture Requirements**

ENT	110	Applied Entomology of Economic Plants3
ESA	225	Land & Environ. Issues in Law and Policy 3
HRT	334	Current Issues in Viticulture & Enology1
HRT	432	Principles & Practices of Grape Production I3
PLP	200	Plant Diseases & their Pathogens
AT	293	Professional Internship
VEST	A cours	es16

\* See program coordinator to assure core and elective requirements are met.

### Program Requirements

64

32

**MSU Transfer Students:** Students wishing to transfer to MSU as juniors must meet with an MSU and an NMC academic advisor during their first semester to alter general education courses to meet MSU requirements.

# NMC. Find it here.



# **Respiratory Therapy - RT**

### Associate in Applied Science Degree through Muskegon Community College NMC Code 712

Northwestern Michigan College is a partner with Muskegon Community College and Munson Medical Center to offer a collaborative program leading to an Associate in Applied Science Degree. All liberal arts and science courses can be taken through NMC. All didactic respiratory classes will be offered at Munson Medical Center via live interactive television from Muskegon Community College. Most clinical courses can be completed at Munson Medical Center. This program is fully accredited by the Joint Review Committee for Respiratory Therapy Education.

The respiratory therapy program begins each fall semester. Enrollment in the program is based on the student meeting the following criteria: overall GPA of 2.0 and proficiency testing in Beginning Algebra and successful completion of ENG 111. Depending on placement test results and high school and/or college transcript evaluation, some prerequisite classes may be required. Class sizes generally begin with 8 students in the Munson interactive classroom.

After completing more than two years of instruction, the therapist student receives the Associate in Applied Science Degree (AAS) from Muskegon Community College. The student must pass the advanced practical examination given by the National Board for Respiratory Therapy in order to receive credentials.

### Admission Requirements

Enrollment in any Respiratory Therapy (RT) course requires admission to the Respiratory Therapy program. Considera-tion for admission requires satisfactory completion of program prerequisites and admission to both Muskegon Community College and the Respiratory Therapy program. Space in the Respiratory Therapy program is limited. **Completion of prerequisites does not guarantee admission to the Respiratory Therapy program.** Students interested in pursuing a degree in Traverse City for Respiratory Therapy from Muskegon Community College would follow these guidelines for application to and registration in the program.

- **1.** Submit an application to Northwestern Michigan College. Applications are available at **www.nmc.edu/admissions** or at the Admissions Office (231) 995-1054.
- **2.** Meet with an NMC advisor or Health Occupations Respiratory Therapy Advisor to complete your educational development plan for completing your degree.
- **3.** Complete the basic criteria for admissions to the Respiratory Therapy program including: overall GPA of 2.0 and proficiency testing in Beginning Algebra and successful completion of ENG 111.
- Apply for Admission to Muskegon Community College and the Respiratory Therapy Program at www.muskegoncc.edu/pages/1928.asp or applications are also available by calling (231) 995-1235.

# Technical Management Administration

### Associate in Applied Science Degree NMC Code 573

Adding technical training to a business background has long been recognized as a powerful combination in the job market. Technicians often work with non-technical personnel such as accountants, managers, and data processors.

In order to obtain this successful combination of technical and business skills, students who have earned an Associate in Applied Science degree in a technical program may earn a second AAS degree in Technical Management Administration by completing 32 additional credits with a business emphasis.

**Please note:** This program is available only to students who have already completed an associate degree program in a technical area (Technical, Health, and Visual Communications programs). This program is not available to the student whose first degree is from a Business program.

Previo	us Tec	chnical focused AAS degree Cr	edits: 64
Occup	32		
ACC	121	Accounting Principles I	4
ACC	122	Accounting Principles II	4
BUS	101	Introduction to Business	3
BUS 2	231	Professional Communications	3
BUS	261	Business Law I	3
CIT	100	Computers in Business-An Intro	3
MGT 2	241	Principles of Management	3
MGT 2	251	Human Resource Management	3
MKT 2	201	Principles of Marketing	3
Any Bu	isiness	Course	3



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# **Visual Communications**

### Associate in Applied Science Degree NMC Code 351

This program is oriented to careers in advertising design and graphic design. Employment opportunities include entry-level positions in newspapers, publishing and design studios, retail firms, manufacturers, advertising agencies and local freelance work. Students are encouraged to transfer to four-year colleges or universities to earn a bachelor's degree if they plan to seek higher level positions. Emphasis is placed on learning marketable job skills, process, problem-solving techniques, and portfolio preparation. Students explore a full range of skills: drawing, typography, layout, computer illustration techniques, team-work, new media and graphic design.

General Education Requirements	Credits:	18-19
Communications: ENG 111 and ENG 112		8
Humanities: ART 111 or ART 112 (preferre	d)	
or ART 213		3-4
Math competency: Placement into MTH 11	1 <i>or</i> high	er,
<i>or</i> completion of MTH 23		
Science: Any Group 1 course with a lab		4
Social Sciences: Any Group 1 course		3
. 1		

### Occupational Specialty Requirements

ART	121	Drawing I	3
ART	131	2-D Design	3
VCA	100	Materials and Techniques	3
VCA	125	Typography I	3
VCA	126	Typography II	3
VCA	127	Digital Imaging	3
VCA	146	Interactive Animation	3
VCA	147	Web Design I	3
VCA	150	Digital Graphic Design	4
VCA	200	Visual Communications II	3
VCA	220	Visual Communications III	3
VCA	225	Visual Communications Studio	3
VCA	230	Visual Communications V	3
VCA	235	Visual Communications Portfolio	3
VCA	250	Time Based Media I	3
Progr	am Re	quirements	64-65

# Visual Communications -Creative Management in Art Direction

### Associate in Applied Science Degree NMC Code 251

This Visual Communications program is designed for students who have completed the VCA Associate in Applied Science degree and have the desire to work locally or do not wish to transfer to a four-year BFA or university program. This degree focuses on a tailored set of courses from other disciplines that expose the student to marketing, copywriting, small business management, new media, digital photography and other skills that will aid them in breaking into the work force. A required summer internship with a local marketing/design/advertising firm is a key part of this program.

### Previous Visual Communications AAS degree 64

Gener	al Edu	cation Requirements	Credits:	32
ART	132	3-D Design		3
ART	174	Digital Photography		3
ART	175	Color Photography I		3
ART	181	Printmaking I		3
ART	213	Modern Art History		3
ENG	221	Creative Writing or		
ENG	222	Advanced Creative Writing		3
COM	111	Public Speaking <i>or</i>		
COM	201	Mass Communication and Cultur	e	4
ENG	220	Technical Writing		3
MKT	201	Principles of Marketing or		
MKT	210	Principles of Selling		3
VCA	290	Visual Communications Internshi	p	4



# **Welding Technology**

### Certificate of Achievement (Level I) NMC Code 036

The Welding Technology courses are designed to meet the needs of the beginning welding students as well as the needs of people who are upgrading their welding skills. Students will develop their skills in this area through laboratory experience using equipment representative of the welding industry. Welding classes can prepare students to be a certified welder, provide a certificate in Welding Technology, or an Associate in Applied Science degree through the Manufacturing Technology program. The welding curriculum includes Oxyacetylene, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Gas Tungsten Arc Welding (GTAW), on both ferrous and nonferrous materials.

Certif	icate F	Requirements C	redits:	30
MFG	111	Math for Manufacturing		3
WPT	110	Oxy-Fuel Processes Thermal Cuttin	g	3
WPT	120	GTAW (TIG) Welding I		2
WPT	121	GTAW (TIG) Welding II		2
WPT	130	SMAW (Arc) Welding I		3
WPT	131	SMAW (Arc) Welding II		3
WPT	140	GMAW (MIG) Welding I		2
WPT	141	GMAW (ARC) Welding II		2
WPT	142	Flux Cored Arc Welding		2
WPT	160	Welding Qualification Prep		2
WPT	160A	Welding Qualification Prep (GMAW	V)	2
WPT	160B	Welding Qualification Prep (GTAW	7)	2
WPT	160C	Welding Qualification Prep (FCAW	)	2

\* Level I certificate is set up for students to complete the program requirements in two semesters.



# **Welding Technology**

Certificate of Achievement (Level II) NMC Code 016

Certif	icate F	Requirements	Credits: 42
DD	101	Print Reading and Sketching	
DD	110	Basic Metallurgy	
MFG	111	Math for Manufacturing	
MFG	113	Machining I	
WPT	110	Oxy-Fuel Processes	
WPT	120	GTAW (TIG) Welding I	2
WPT	121	GTAW (TIG) Welding II	2
WPT	130	SMAW (Arc) Welding I	
WPT	131	SMAW (Arc) Welding II	
WPT	140	GMAW (MIG) Welding I	2
WPT	141	GMAW (MIG) Welding II	2
WPT	142	Flux Cored Arc Welding	2
WPT	160	Welding Qualification Prep	2
WPT	160A	Welding Qualification Prep (GMA	AW)2
WPT	160B	Welding Qualification Prep (GTA	W)2
WPT	160C	Welding Qualification Prep (FCA)	W)2
WPT	210	Welding Fabrication and Repair	











# **Course Descriptions**

### **Aviation**

AVF	Aviation Flight
AVG	Aviation Ground

### **Business**

- ACC Accounting
- **BUS** Business Administration
- **CIT** Computer Information Technology
- CUL Culinary Arts
- MGT Management
- MKT Marketing

### Communications

ASL World Language - American Sign Language
COM Communications
ENG English
FRN World Language - French
SPN World Language - Spanish
THR Theater

### **Construction Technology**

- **CAR** Carpentry Technology
- **CMT** Construction Management
- **EET** Electronical/Electronics Technology
- **EGY** Renewable Energy
- **ELE** Electrical Technology
- HVA HVAC/R Technology
- PLU Plumbing Technology

### **Health Occupations**

- HAH Allied Health
- HDA Dental Assistant
- HNR Nursing
- HPD Health Professional Development

### **Humanities**

ART	Art
AUD	Audio Technology
DNC	Dance
HST	History
ним	Humanities
MUS	Music
PHL	Philosophy

VCA Visual Communications

### Maritime

MDK	Maritime-Deck
MNG	Maritime-Engineering

MNS Naval Science

### **Physical Education**

HF	Health	and	Fitness

- **OUT** Outdoor Pursuits
- PE Physical Education

### **Science and Mathematics**

- AST Astronomy
- **BIO** Biology
- CHM Chemistry
- **EGR** Engineering
- **ENV** Environmental Science
- MTH Mathematics
- PHY Physics

### **Social Sciences**

ANT	Anthropology
-----	--------------

- **CD** Child Development
- **CJ** Criminal Justice
- **ECO** Economics
- **EDU** Education
- **GEO** Geography
- **LWE** Law Enforcement
- **PLS** Political Science
- **PSY** Psychology
- **SOC** Sociology
- **SWK** Social Work

### **Technical**

- AT Automotive
- **DD** Drafting and Design
- **MFG** Manufacturing Technology
- **RAM** Robotics and Automation
- WPT Welding Process Technology

### Water Studies

WSI	Water	Stud	lies

# Reading a Course Description

The semester credit hours followed by (contact hours) are listed on the first line of the course description. Student tuition, in most cases, is based on the course contact hour. Exceptions are MDK, MNG, MNS, Applied Music, Ensembles and private lessons. At the end of the description the course is identified by group number. See graduation requirements on page 48.

In addition to the courses listed in this section, each instructional area within Northwestern Michigan College may offer the following three courses:

### 290A-E Academic Internships

An internship is a method of earning college credit in a supervised field experience. It is an opportunity for students who want to explore career or interest areas, apply classroom theory to a real situation, and gain practical experience for resume building. Service Learning Internships specifically provide an opportunity to earn credits while giving some of your talents

# NMC Course Descriptions

# ACC Accounting

### 

This course covers basic principles and procedures in accounting for both a service and merchandising business. It includes the accounting cycle, financial statement preparation, manual accounting systems, petty cash, bank reconciliations, receivables, inventories, and property, plant and equipment.

### Group 2 course.

### 

Second semester accounting continues with payroll, current liabilities, partnerships, corporations, bonds, cash flow statements, and statement analysis. **Group 2 course.** 

### ACC 221 Intermediate Accounting I......4.0 (4)

### Required prerequisite(s): ACC 122

A detailed analysis of the content of financial statements covering problems related to revenue recognition, time value of money, cash, receivables, and inventories including calculation and analysis of financial ratios. US and international reporting standards are compared. This course begins with a brief review of the fundamental accounting process. **Group 2 course.** 

### ACC 222 Intermediate Accounting II......4.0 (4)

### Required prerequisite(s): ACC 122

A detailed analysis of the content of financial statements covering problems related to property, plant and equipment, investments, current liabilities and contingencies, bonds and long-term notes, leases, income taxes, and shareholders' equity. US and international reporting standards are compared.

### Group 2 course.

to the community as a volunteer. All internships can be arranged in all liberal and occupational studies areas for one to four hours of elective credit. A maximum of four credits will count toward associate degree requirements. **Group 2 course.** 

### **291 Special Topics**

Seminars, lectures, etc. on a selected topic within a field are sometimes offered as special courses. Students may enroll in more than one Special Topics offering but not all four-year schools accept special topics credits. **Group 2 course.** 

### 297 Independent Study

This option provides an opportunity for a student with a good scholastic record to pursue independently the study of a subject under the guidance of an instructor. This option may be arranged for one, two or three credits. This option may be repeated for NMC credit but not all four-year schools accept independent study credits. **Group 2 course.** 

### 

*Recommended prerequisite(s): ACC 122, MTH 111* This course introduces the basic concepts and terminology of managerial cost accounting, its nature and tasks. Both job order cost systems and process cost systems are analyzed. The student begins building a knowledge base for managerial cost accounting through the analysis of the theory and practical applications of cost-volume-profit analysis, job costing, budgets and standard costing, and study of internal control systems in a manufacturing setting. **Group 2 course.** 



ACC 290 Accounting Internship ...... 3.0 (3)

Required prerequisite(s): 12 semester credits of accounting in addition to a spreadsheet course. This internship requires the approval of the accounting instructor, a GPA of 3.0 in accounting and a minimum of eight hours per week spent on-site. Recommended prerequisite(s): ACC 122, MTH 111 The accounting work experience is an elective of the two-year Associate in Applied Science degree in Accounting. The purpose of this work experience course is to provide an opportunity for students to acquire accounting work experience, to apply their skills in a real work setting, and to build ties with the business/professional community. Students spend 10 hours per week in this paid or non-paid, supervised on-the-job training experience. In addition to the required 150 hours in an accounting site, students participate in brief, reflective writing assignments. Students must apply one month prior to the semester in which they will complete the internship. Group 2 course.

# ANT Anthropology

This course will provide students with an introduction to theory, method, technologies, and practice in underwater archaeology, with case studies of prehistoric and historical sites worldwide, including the Michigan Great Lakes. This is a lecture-based course that provides a specialization in anthropology and the applied social sciences. This course also qualifies for NAS Part 3 credits. No diving is required. **Group 2 course.** 

### 

This is an entry level course to the Nautical Archaeology Society Training Program and is aimed at introducing nautical archaeology to divers and non divers, and promoting their interest in the subject. It provides the basic training in archaeological survey and project management with the aim of teaching students how to design, plan and run their own field work projects. The curriculum will be presented in the classroom and in an open water setting (or onshore site for non-divers) in the field. **Group 2 course.**  This is a field archaeology course that allows students the opportunity to practice skills they learned in ANT 201. Students will design and execute a maritime archaeology project in the Grand Traverse region or other maritime landscape. Students may also participate in larger projects during special summer field schools hosted at NMC and abroad. Beach projects will be developed for non divers. The course will be offered during the summer semester on a flexible time schedule and is based on individual availability and weather conditions. **Group 2 course.** 

# **ART** Art/Fine Arts

**ART 111 History of Western Art I**......**4.0 (4)** *Recommended prerequisite(s): ENG 111* This course will introduce major trends of Western Art from Pre-History through Greece, Rome and the Middle Ages. Significant works of painting, sculpture and architecture will be presented within the social, political and cultural context of each period. **Group 1 course.** 

### 

This course is designed to introduce major trends in Western Art from the Renaissance through Modernism to the present. Significant works of painting, sculpture and architecture will be presented within the social, political and cultural context of each period. **Group 1 course.** 

**ART 121 Drawing I**......**3.0 (4)** Drawing I introduces the students to basic drawing skills and techniques through the use of line, form, composition, perspective and the use of chiaroscuro. The course emphasis is on using drawing as a vehicle for seeing and communicating. Students will learn to judge proportion, create volume, depict the illusion of space and to analyze their own work as well as others. Black and white dry medium will be used for all assignments. **Group 2 course.** 

### **ART 122 Drawing II**......**3.0 (4)** *Required prerequisite(s): ART 121*

Course will explore advanced methods in drawing including the effects of lighting, multiple panel design and conceptualizing of compositions with an emphasis on the use of new media and developing a personal style. Advanced use of color media and theory will also be explored in this course. Assignments will include still life and object studies designed by both the instructors and students. **Group 2 course.**  **ART 131 2-D Design**.....**3.0 (4)** Course will study the concepts and theory of two-dimensional design, pattern, and color as they apply to visual perception and communication. Students will study visual structure, color and their application. **Group 2 course.** 

# 

*Recommended prerequisite(s): ART 131* An introduction to the elements of construction and production of three-dimensional design. Shape, volume, mass, and interaction of forms and colors will be studied within a variety of conceptual models, e.g. architecture, sculpture, package design, display, etc. **Group 2 course.** 

This is an introductory course consisting of instruction and development of hand-building skills and basic ceramic design. Students prove critical thinking and development of technical skills by completing hand building projects that include: sets, complex shapes (made from multiple shapes), relief, pouring vessels, and a detailed sketchbook that includes research and design focused on each project. Functional pottery, sculpture, and hybrids of these forms will be the focus of this course. **Group 2 course.** 

# 

Required prerequisite(s): ART 151

This course is an advanced studio intensive class that builds on the skills and knowledge developed in Ceramics I. Advanced projects using hand building and wheel throwing techniques will be completed for assessment. Projects will include the concepts of sets, bottle forms, wheel throwing, the human figure, and large stacking forms. Sketchbook/sourcebook documentation of research and design will be required. **Group 2 course.** 

**ART 161 Painting I**.....**3.0 (4)** This course will introduce concepts of painting as well as principles of design, including the development of painting techniques. Students will be given painting projects/problems throughout the semester ending with one self-directed painting which make application of learned concepts. Oils and acrylics will be used. **Group 2 course.** 

### **ART 162 Painting II**......**3.0 (4)** *Required prerequisite(s): ART 161*

This course will continue the concepts of Painting I as well as elements of design, including the development of a personal styled technique. Students will deal with more complex and involved painting concepts with an emphasis upon a particular focus of interest and challenge. The course is designed to give more latitude in an independent/individual approach. Students will work in either oil or acrylic paint. **Group 2 course.**  **ART 165** Watercolor Painting I......**3.0 (4)** An introduction to the techniques and materials of watercolor painting. Includes use of creative effects, additive and subtractive approaches, and mixing of color to create effective paintings in a step-by-step manner. **Group 2 course.** 

Watercolor II deals with advanced problems in watercolor painting with special emphasis on individual development and creativity particularly in the area of compositional conceptualization. **Group 2 course.** 

**ART 174 Digital Photography**.....**3.0 (4)** The learner will gain a strong understanding of light, and how it illuminates the subject, become proficient in the use of the adjustable digital camera and demonstrate, explain and craft both the history and the creative process of photography. Visual learning will allow the development of a b+w and color core of composition. **Group 2 course.** 

**ART 175 Color Photography I......3.0 (4)** *Required prerequisite(s): ART 171 or instructor permission* Color Photography I is an intermediate photography course covering the basics of working with photographs in digital color form. Specific topics will include understanding the digital process and the controls available to maximize image quality, image enhancement using software programs (Adobe Photoshop), color theory as it applies to both image making and image enhancement, color management, and output to digital prints. **Group 2 course.** 

**ART 181 Printmaking I**.....**3.0 (4)** *Recommended prerequisite(s): ART 121* 

Printmaking I is an introductory survey course that introduces the students to a wide variety of print media: relief, intaglio, embossing and monotype. Students will gain knowledge of the history, conception, production and presentation of achromatic prints. **Group 2 course.** 

### 

Printmaking II expands on processes and concepts explored in Printmaking I with the emphasis on more complex techniques, including lithography, dry point, and collagraphs. Students will refine their technical skills and concepts begun in Printmaking I. Students will explore contemporary printing techniques and issues. **Group 2 course.** 

# 

Recommended prerequisite(s): ENG 111

This course examines the history of art from the beginning of the 20th century to the present. Emphasis is placed on the continuing connection between modern art movements and the relationship of art to current social and cultural contexts. **Group 1 course.**  Recommended prerequisite(s): ART 122

Life Drawing I involves comprehensive studies in drawing the human figure with a variety of materials and discusses the solution of the problems of figure drawing used to advance the general qualities of grace, rhythm, and form. Explorations include gesture drawing, contour drawing and drawing the figure in motion. Life Drawing I will work primarily in charcoal and pencil. **Group 2 course.** 

### 

Life Drawing II is an advanced study of problems in drawing the human figure in multiple views and in longer studies with an accent on composition and dealing not only with the model but the environment the model is in. Life Drawing II will include the introduction of color and wet media. **Group 2 course.** 

### 

Required prerequisite(s): ART 175

Color Photography II is an advanced photography course dealing with the use of digital photographic tools and techniques to create artistic work. On the technical side, specific topics will include advanced tools for image control, advanced features in software digital imaging programs (Adobe Photoshop and plug-ins), color management in the digital environment and multiple options for the output of work in a variety of forms. On the artistic side, the work will be to create a coherent visual project that reflects the interests of the student. **Group 2 course.** 



# ASL World Language - American Sign Language

**ASL 102 American Sign Language II**......**4.0 (4)** *Recommended prerequisite(s): ASL 101, or instructor permission* ASL 102 furthers student knowledge and experiences of the language and culture of Deaf people in the U.S. and much of Canada. The introduction of additional vocabulary and grammar structures furthers students' ability to communicate meaningfully with ASL users. Students will develop greater insight into the Deaf culture through the context of ASL literature, and current topics relevant to the Deaf community are explored. "Voice off" policy is used for more extended periods of time. While developing communications skills, students will simultaneously mature in their understanding of the Deaf experience. **Group 2 course.** 

### 

ASL 103 is a continuation of ASL 101 and 102, expanding the emphasis on ASL grammar, vocabulary development, and Deaf culture. Dialogue, short stories narratives, and short conversation, both receptive and expressive, will be featured through the course. Meaningful conversational topic development is emphasized. **Group 2 course.** 

### 

ASL 104 is a continuation of ASL 101, 102, and 103 and students will further develop ASL grammar, vocabulary development, and Deaf culture. Dialogue, short stories, narratives, and short conversation, both receptive and expressive, will be featured through the course. Meaningful conversational topic development is emphasized. **Group 2 course.** 



# AST Astronomy

**AST 100 Observational Astronomy**......**2.0 (2)** This is an introduction to astronomy. The goal of this course is to acquaint the student with the constellations, solar system objects and their motions, the celestial sphere concept and co-ordinate system. Stars, star clusters, nebulae and galaxies are also studied. Students will use naked-eye observations as well as telescopes, spectrograph, photometer and CCD camera to observe and report findings. Each session includes training in the operation of equipment. **Group 2 course.** 

### AST 109 Planetary Astronomy .......4.0 (3) AST 109L Planetary Astronomy Lab......0.0 (2)

Required prerequisite(s): ENG 99

Recommended prerequisite(s): ENG 11/111, may be taken concurrently and MTH 111

Corequisite(s): AST 109 and AST 109L

Characteristics and properties of the solar system and its components are presented to students in the context of the history of discovery. This information is integrated with student observational data to develop a mathematical model in the laboratory. The model is developed by incorporating equations used to compute characteristics and properties of solar system components. The model is utilized by students to encourage understanding of why the solar system has evolved to its current state by evaluating the effects of changes in values of fundamental measured properties and characteristics. **Group 1 lab course.** 

### 

Required prerequisite(s): ENG 99

Recommended prerequisite(s): ENG 11/111, may be taken concurrently and MTH 111

Corequisite(s): AST 119 and AST 119L

History of discovery of the nature of the cosmos and its contents is the format utilized to develop understanding of the nature of stars and the universe, and the physical principles determining this nature. These principles underlie our proficiency for prediction of the nature of the universe and our ability to make observations of our universe. The principles are analyzed by means of a student developed mathematical model incorporating the quantitative relationships derived by physicists and astronomers. Observations provide students with the sky knowledge and data necessary for prediction of stellar characteristics. **Group 1 lab course.** 

Visit **www.nmc.edu/science-math** for detailed information.

# AT Automotive Technology

power assist units and systems. The study and repair of modern A.B.S. systems along with the replacement of associated parts such as wheel bearings will also be covered. Lab work will include procedures such as the use of brake lathes, brake line cutting and flaring procedures and the use of electronic test equipment. **Group 2 course.** 

### AT 130 Engine Performance I......5.0 (8) Required prerequisite(s): AT 220

This course is designed to familiarize students with the theory and operation of the automotive ignition and fuel systems. Topics include: distributors, electronic ignition, distributorless systems, fuel injection systems, turbochargers and superchargers. The lab portion provides the student with actual hands on experience with tune-up, ignition, and fuel system service. Modern test equipment will be provided and proper diagnostic techniques will be stressed. **Group 2 course.** 

**AT 150 Automatic Transmissions**......**6.0 (9)** *Required prerequisite(s): Instructor permission required* This course is designed to familiarize the student with hydraulic theory, internal transmission powerflow, electronic control and torque convertor operation. All aspects of transmission operation will be covered as well as removal, overhaul and installation procedures. Students will remove, overhaul, dynotest and install actual failed units in the lab. The cause of the failure of these units will be explored in detail. Factory and aftermarket updates to prevent future failures will be taught. Group 2 course.

### **AT 170** Heating and Air Conditioning......4.0 (6) Required prerequisite(s): AT 120

This course covers the principles of refrigeration with emphasis on the particular problems of application to automotive air conditioning. The course also covers automotive heating systems which include heater cores, blower motors, vent systems and electronic controls for them. The student will learn how to use refrigerant recovery and charging equipment and will have hands on experience in the lab with that equipment. **Group 2 course.** 

**AT 180 Manual Drivetrain and Axles**.....**6.0 (9)** *Required prerequisite(s): AT 100, may be taken concurrently* This course covers the basic operating principles, construction, power flow and repair of clutches, manual transaxles and drive shafts. Different theory and overhaul will be covered including ring and pinion replacement and set up. Lab work will include hands on repair of late model vehicles including four wheel drive. **Group 2 course.** 

This course provides a comprehensive systems overview of the operating principles, maintenance, and service of hybrid electric vehicles. **Group 2 course.**  This course covers advanced automotive electronics with the emphasis placed on operation, troubleshooting, and repair of lighting, gauges, accessories, and power option circuits. Body hardware is covered including diagnostics of modern systems with body control modules. **Group 2 course.** 

### 

This course covers computerized engine controls including the latest emission control systems. The student will become proficient with the use of scanners, scopes and the latest engine analyzers. The art of diagnostics and troubleshooting will be stressed. The student will have hands on experience in this area including practice using the computer as a source of information. **Group 2 course.** 

AT 240	Unmanned Ground Vehicles4.0	(5)
Required	prerequisite(s): AT 130, AT 220, ENG 111,	

MTH 111, RAM 120

*Recommend prerequisite(s): ENG 112, MTH 121* This course is designed to be a capstone project for students in the Engineering Technology unmanned ground vehicle curriculum specialization. Students enrolled in this project will design and build an unmanned vehicle. The specifics on the type of vehicle will be developed by the instructor and students as part of the course. Students will gain experience in all areas of engineering technology, including design, project management, scheduling, budgeting and fundraising. **Group 2 course.** 

# AUD Audio Technology

### 2014 - 2015 NMC CATALOG

This course is a study of audio signal processing theory, history, and application using current industry standard technology. There is an emphasis on developing skills in the operation of hardware and software to manipulate digital audio recordings. **Group 2 course.** 

**AUD 120 Digital Audio I**.....**2.0 (2)** *Required prerequisite(s): AUD 100, may be taken concurrently* This course includes a brief history of MIDI, the MIDI specification and setting up a MIDI studio. Students will learn techniques of MIDI and audio recording and editing, creating MIDI and audio tracks using MIDI software sequencers and Digital Audio Workstations (DAW). This course will present the content required for taking the Logic Level One User Certification exam. **Group 2 course.** 

### 

Required prerequisite(s): AUD 120

Digital Audio II is the continuation of AUD 120, Digital Audio I. This course explores Pro Tools, MIDI recording and editing, then delves further into advanced MIDI editing techniques. The use and operation of control surfaces and MIDI session strategies are explored. **Group 2 course.** 

# 

Required prerequisite(s): AUD 130

This course concentrates on developing a working understanding of the tools used to influence and manipulate sound. Area of study include how audio signals are created and utilized, microphones and microphone techniques, what a mixer does and how to use it, the manipulation of signal, and how amplification works. Also covered in this course are OSHA basics, types of loudspeakers and what they do, what a monitor does and how to set it up, production communication, the role of performance staging, trussing and rigging and how they all work together. **Group 2 course.** 

### AUD 210 Studio Recording III ...... 2.0 (2)

### Required prerequisite(s): AUD 111

This course builds on the topics covered in AUD 110 and AUD 111, focusing on the refining and addition of skills in digital audio recording. Students develop competencies in working with hardware and software in audio project-based settings. **Group 2 course.** 

### AUD 220 Digital Audio III ...... 2.0 (2)

*Required prerequisite(s): AUD 121* Digital Audio III is the continuation of AUD 121, Digital Audio II. This course further explores MIDI and audio recording and editing in Logic and Pro Tools, and also delves into an exploration of software sound synthesizers and sampler instruments found in Digital Audio Workstations. **Group 2 course.** 

### 

This course will focus on real world application of the tools. The student will be presented with the opportunity to learn advanced mixing concepts for FOH and Monitor systems, the theory of sound system design, performance/show logistics, performance contract basics, local ordinance issues, risk and liability and why "The Show Must Go On." **Group 2 course.** 

**AUD 260** Audio Tech Internship......**3.0 (3)** *Required prerequisite(s): AUD 210, AUD 220, AUD 230; or instructor approval* 

This course is required for the Associate of Applied Science degree in Audio Technology. The purpose of the internship is to provide on-the-job experience for the student who wishes to pursue a career in audio related fields. The internship will be customized to meet the learning needs of the student and the job requirements of the sponsoring firms. Students must apply one month prior to the semester in which they will complete the internship. **Group 2 course.** 

**AUD 270 Audio Tech Final Project**.....**3.0 (3)** *Required prerequisite(s): AUD 210, AUD 220, AUD 230* This course is required for the Associate of Applied Science degree in Audio Technology. The purpose of the Audio Tech Final Project course is to provide in-depth intensive training experience in an area of specialization in audio technology. The student will be paired with staff in their area of expertise. Examples are Audio for Worship, Mastering, Audio for Film, Scoring, etc. **Group 2 course.** 



# AVF Aviation Flight

**AVF 111 Private Flight**.....**5.0 (5)** A flight course structured to provide a minimum of 40 dual and solo flight hours to meet the aeronautical experience requirements for a private pilot. Upon completion of this course the student will have attained the FAA Private Pilot Rating. **Group 2 course.** 

### **AVF 118** Instrument Flight I......**1.0 (1)** *Required prerequisite(s): Private Pilot Rating*

This course is the beginning stage of the Instrument Pilot Rating. The ground work will be laid for students to safely fly by the instruments. Skills and techniques will be gained to effectively move to Instrument Flight II where holding, tracking, and approaches will be learned. Both the aircraft and flight simulator will be used to obtain skills required for this course. Objectives learned will go toward the FAA Instrument Rating. **Group 2 course.** 

### AVF 130 Instrument Flight II......2.0 (2)

Required prerequisite(s): AVF 118

The aircraft and the simulator will be used to teach the required skills. The student will learn tracking, holding, and instrument approaches. At the culmination of this course the student will have gained actual instrument flight time and be a competent instrument pilot and will be signed off for the FAA Instrument check ride. **Group 2 course.** 

### AVF 230 Commercial Flight I..... 2.0 (2)

*Required prerequisite(s): Instrument Flight Rating* The student will advance their skills required by the FAA to obtain a Commercial Pilot Certificate. They will gain experience in different aircraft with the opportunity to gain a Tailwheel Endorsement or Seaplane Rating. Students will increase their instrument proficiency while conducting cross country flights. **Group 2 course.** 

### 

A flight course structured to provide a minimum of 45 dual and solo flight hours to partially fulfill the flight hour requirements for the FAA Commercial Pilot Certificate. This course will provide a review of VFR and IFR cross country navigation procedures and introduce the student to multi-engine flight. **Group 2 course.**  AVF 234 Commercial Flight III......2.0 (2) Required prerequisite(s): AVF 232

This course is the last of three flight courses required to obtain the FAA Commercial Pilot Certificate. This course consists of approximately 18 flight hours with an emphasis on commercial flight maneuvers in preparation for the Commercial Pilot FAA Practical Test. Upon completion of this course, the student will have attained the FAA Commercial Pilot Certificate. **Group 2 course.** 

### 

Students will apply what they have learned in previous courses by working largely in the field conducting simulated and real life flight missions. This course focuses on applying Unmanned Aerial Systems to future civilian applications such as inspections, aerial mapping, and aerial photography. **Group 2 course.** 

### **AVF 271** Multi-Engine Flight......**1.0 (1)** *Required prerequisite(s): Private Pilot Rating*

This flight course involves approximately 10 flight hours in an airplane/simulator and 5 ground hours and is designed to give the student the aeronautical knowledge, proficiency, and experience required to meet the FAA Practical Test Standards for the Private or Commercial Multi-engine rating. Upon completion of this course, the student will have attained the FAA Airplane Multi-Engine Land Rating. **Group 2 course.** 

### AVF 274 Tailwheel Flight......1.0 (1)

Required prerequisite(s): Private Pilot Rating

This course is designed to provide the student with the skills, knowledge, and experience to receive a logbook endorsement to fly tailwheel aircraft. **Group 2 course.** 

### **AVF 275** Seaplane Flight......**2.0 (2)** *Required prerequisite(s): Private Pilot Rating*

In this course, the student will gain the skills, knowledge, and experience to receive endorsement for the FAA Practical Test. Students will learn in a Piper Super Cub on floats as they demonstrate maneuvers and landings. **Group 2 course.** 

### AVF 281 Advanced Cross Country Flight......2.0 (3)

Required prerequisite(s): Multi-Engine Rating Recommended prerequisite(s): Commercial Pilot Rating Students will be exposed to various terrain and weather conditions while accomplishing 50 hours of multi-engine cross country flight. They will be responsible for all aspects of flight planning, ground handling of the aircraft and management of cargo and passengers as necessary. All flight lessons will be conducted with a Multi-Engine Flight instructor. **Group 2 course.** 

### 2014 - 2015 NMC CATALOG

### AVF 284 Instrument Flight Instructor ...... 2.0 (2)

Required prerequisite(s): Flight Instructor Rating

The student perfects both teaching and instrument flying skills while sitting in the right seat of the cockpit. The student develops the knowledge and ability to teach others instrument flying procedures. Training utilizes instrument equipped aircraft and a Frasca simulator. The course consists of 10-20 hours of flying and 10-20 hours of ground time. **Group 2 course.** 

### 

Required prerequisite(s): Multi-Engine Rating Recommended prerequisite(s): Commercial Pilot Rating Students will learn the principles of Crew Resource Management (CRM) with 50 hours of flight in a multi-engine aircraft, including the challenge and response concepts used in corporate, regional, or major airlines. Lessons will explore decision making during normal, adverse, or unplanned conditions during all phases of flight. Students will be in the role of both Captain and First Officer. All flight lessons will be conducted with a Multi-Engine Flight Instructor. **Group 2 course.** 

### AVF 382 Flight Instructor Rating .......4.0 (4)

Required prerequisite(s): Commercial Pilot with Instrument Rating

In this course the student will learn the skills to be a Certified Flight Instructor (CFI). They will master the skills of the Private and Commercial Pilot ratings. In addition they will learn how to be an effective teacher and understand all FAA rules and regulations that accompany being an instructor. The student will learn in this course through the use of the simulator and aircraft. **Group 2 course**.



# **AVG** Aviation Ground

**AVG 101 Private Pilot Ground School**......**5.0 (5)** A course of study that will provide the aeronautical knowledge required of a private pilot and prepare the student to take the FAA Private Pilot written examination. Topics include: aerodynamics, engine and aircraft systems, airport operations, weight and balance, aircraft performance, Federal Aviation Regulations, meteorology, airspace, navigation, and flight physiology. Group 2 course.

**AVG 161 Mechanics for Pilots**.....**3.0 (3)** *Recommended prerequisite(s): Private Pilot Rating* This course will teach the students about the systems, components, safe repair, and regulations involved with maintaining and operating small aircraft. Students will learn in the classroom and in the maintenance hangar. **Group 2 course.** 

### 

This course offers thorough coverage in the application and analysis of meteorological charts and how they pertain to aviation. It emphasizes the need for advanced knowledge on how NWS/NOAA charts are derived and how to understand their use in aviation today. Additional emphasis will be placed on predominant weather patterns, associated weather and planning flights to avoid severe weather. A basic understanding in the theory of meteorology is desired. **Group 2 course.** 

### 

This course is designed to prepare those students seeking to be career pilots to be successful in the intense aircraft systems ground schools offered by the airlines, manufacturers, and private training providers such as Flight Safety. Each major system of large turbine aircraft will be studied, first, in a general overview and then for a specific model, large transport category, jet aircraft. **Group 2 course.** 

### 

This course is designed to prepare those students seeking to be career pilots to be successful in the intense aircraft ground schools provided by the airlines. Canadair Regional Jet systems, limitations, normal and emergency checklist, and flows and flight procedures will be covered. **Group 2 course.** 

### **AVG 210 UAS I**.....**4.0 (4)** Required prerequisite(s): AVF 141 may be taken concurrently Recommended prerequisitie(s): AVG 101

This course will guide students deeper in to the Unmanned Aerial Systems Industry. Topics will include Federal Regulations for UAS, components of Unmanned Aerial Vehicles, autopilot programming and flight plan development. Students will be working with UAS autopilot simulators and also be introduced to flying professional UAS systems. **Group 2 course.**  **AVG 231** Aviation Law ......**3.0 (3)** A study of fundamental legal and aviation law principles as they apply to the various segments of the aviation industry. There will be special emphasis on contemporary aviation legal issues. The highlight of the course will be a mock court where the students, acting as plaintiff and defense attorneys, will argue an actual aviation civil case before an impartial jury. **Group 2 course.** 

### AVG 240 Corporate Aviation Ground ...... 3.0 (3)

Recommended prerequisite(s): AVG 202

Students taking this course will learn about the aspects of corporate aviation. Aircraft, regulations, business customs, and future outlooks of corporate aviation will be presented. **Group 2 course.** 

**AVG 251 Commercial Ground School** ......**4.0 (4)** *Recommended prerequisite(s): AVF 111 or Private Pilot Rating* An advanced study of aviation topics including GPS, meteorology, radio communications, airspace, and Federal Aviation Regulations. In addition, aircraft systems, career opportunities, aviation safety, aircraft weight and balance, performance charts, and aerodynamics are re-viewed with emphasis on commercial pilot operations. **Group 2 course.** 

AVG 252 Instrument Ground School ......4.0 (4)

*Recommended prerequisite(s): AVF 101 or Private Pilot Rating* A course of study that will provide the aeronautical knowledge required for the instrument rating and prepare the student to take the FAA Instrument Rating-Airplane written examination. Topics include: flight instruments, radio navigation, departure, enroute, and arrival procedures, VOR, NDB, ILS, and GPS approaches, IFR emergencies, aviation weather, and IFR cross-country flight planning. **Group 2 course.** 

**AVG 285 Crew Resource Dynamics**......**3.0 (3)** *Required prerequisite(s): AVG 251, may be taken concurrently* An introduction to the principles of crew resource management (CRM). This course will acquaint students with the concepts and skills required of aircrew members in safely operating multi-place aircraft. Topics will include flight safety concepts, communications skills, effective teamwork principles, personality types, and aircraft accident case studies. Students will practice CRM concepts in the Frasca flight training device. **Group 2 course.** 

# 

Recommended prerequisite(s): AVG 251

A course of study that will provide basic education principles and a review of the aeronautical knowledge required for the flight instructor (airplane single engine) certificate and prepare the student to take the FAA Fundamentals of Instruction (FOI) and the Flight Instructor-Airplane Single Engine written examinations. Through classroom presentations and oneon-one student teaching, students will gain practical teaching experience. **Group 2 course.** 

# **BIO** Biology

### How to select a first course in Biology:

If you are in a transfer program requiring a full year of introductory biology such as pre-med, pre-dental, pre-vet, agriculture, wildlife and fisheries, or environmental programs, you should choose:

- BIO 115 Cell, Plant and Ecosystem Biology
- BIO 116 Genetics, Evolution and Animal Biology

If you need a one semester laboratory science course to fulfill a basic education requirement, you should choose:

• BIO 110 Essential Biology

All of the above include a common core that is basic to the understanding of any branch of biology. The core topics include cell structure and function, genetics, the chemical and physical principles governing life processes, and evolution. Any 100-level Biology course may serve as a prerequisite for 200-level Biology courses.

It has been the experience of the Biology Department that students with COMPASS scores below MTH 23 and ENG 111 levels have difficulty successfully completing introductory-level biology courses. If your COMPASS scores are below these levels, the Biology Department recommends that you complete ENG 99, ENG 108 or ENG 11/111 and MTH 08 before enrolling in any biology course. If your COMPASS scores are below these levels and you decide to enroll in a Biology course, allow yourself additional time for study and preparation. If you are unsure of your ability, consult your advisor, or a biology instructor.

A survey of Human Anatomy and Physiology with a primary focus on health and disease. Topics to be discussed will include the cell structure, simple chemistry of biology, homeostasis, the organ systems, genetics, nutrition, exercise physiology, cancer, heart disease, immunology, AIDS, the effects of drugs and alcohol, and other topics of current interest. This course does not meet the requirements for the Nursing program. Consult an advisor before enrolling. **Group 1 lab course.** 

BIO 108Plant Biology4.0 (3)BIO 108LPlant Biology Lab0.0 (2)Note: There are no prerequisites for this course, but students<br/>scoring below MTH 23 and ENG 111 levels on the COMPASS<br/>placement test should plan on additional study time.<br/>Corequisite(s): BIO 108 and BIO 108L

Since almost all life on earth depends upon photosynthesis, this course places its emphasis on the fascinating world of plants. It includes a study of plant structure, growth, development, propagation and scientific concepts on which horticulture is based. Laboratory exercises will include greenhouse work. **Group 1 lab course.** 

### BIO 110 Essential Biology......4.0 (3)

Essential Biology is geared toward the non-major. The course will cover broad areas of biology and engage the student in how biology relates to their own life, and how science and society interact. Core concepts covered include: evolution, structure and function, information flow, exchange and storage, pathways and transformations of energy and matter and living systems. **Group 1 course.** 

### BIO 115 Cell, Plant & Ecosystem Biology ............4.0 (3) BIO 115L Cell, Plant & Ecosystem Biology Lab.....0.0 (3)

Recommended prerequisite(s): MTH 111

Corequisite(s): BIO 115 and BIO 115L

An introduction to the fundamental concepts of biology, including an investigation of the major kingdoms of life, classification, ecology, botany, cellular anatomy and biochemistry, DNA structure and function, genetic engineering, cloning and stem cell technologies. Laboratory includes field work and investigative exercises which illustrate lecture topics. **Group 1 lab course.** 

### BIO 116 Genetics, Evolution & Animal Bio ....... 4.0 (3) BIO 116L Genetics, Evolution & Animal Bio Lab.. 0.0 (3) Recommended prerequisite(s): BIO 115, MTH 111

Corequisite(s): BIO 116 and BIO 116L

This lecture and lab course concentrates on cell division, classical genetics as well as evolution and speciation. It also covers the biology of invertebrate and vertebrate animals. The treatment of the topics in this course necessarily assume a degree of familiarity with the basic biological concepts covered in BIO 115. Students who have not completed BIO 115 should expect to spend extra time reviewing these concepts throughout the course. **Group 1 lab course.** 

BIO 208	Microbiology	4.0	(3)
BIO 208L	Microbiology Lab	0.0	(3)
Required pr	erequisite(s): Completion of any 100-level	BIO co	urse
Recommend	led prerequisite(s): ENG 111, MTH 111		

### Corequisite(s): BIO 208 and BIO 208L

Introductory microbe physiology emphasizes human response to disease and the importance of microbes in environmental cycles. Laboratory is included. **Group 1 lab course.** 

*Recommended prerequisite(s): ENG 111, MTH 111* Continuation of general biology genetics. Classical genetics will be covered in addition to an in-depth study of molecular genetics, recombinant DNA and human inheritance. A major emphasis will be on the current state of genetic research as it applies to topics such as gene therapy, cloning and stem cell research. Population genetics will also be covered. **Group 1 course.**  This course is an exploration of the fundamentals of nutrition: energy nutrients, vitamins and minerals. Function and sources are each presented, as well as the role each plays in maintaining health. Students complete their own Food Intake Record and use this information throughout the semester so as to better understand human nutrition. Students will study the role nutrition and other lifestyles play in relation to the prevention and protection from disease. Discussion also includes the relationship between nutrition and fitness. **Group 2 course.** 

### 

Required prerequisite(s): MTH 111; ENG 11/111 or ENG 111 may be taken concurrently Corequisite(s): BIO 227 and BIO 227L Recommended prerequisite(s): Any 100-level BIO course, CHM 101 - please note Pre ADN program requirements. This course will include an introduction to cells, histology, biochemistry and homeostasis. In addition, the following systems will be discussed: integumentary, skeletal, muscle, nervous, and special senses. Lecture will be accompanied by lab work and applications, which will stress the anatomy, histology and function of these organ systems.

Group 1 lab course.

### 

Corequisite(s): BIO 228 and BIO 228L

This is the second part of a two-semester course. The second semester will include major systems in the body including: the endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, metabolism, urinary system, fluid balance, reproduction and inheritance. Lecture will be accompanied by lab work, which will stress the anatomy and histology of these organ systems. **Group 1 lab course.** 



### 

**BIO 250L** Natural History of Vertebrates Lab......0.0 (3) Recommended prerequisite(s): ENG 111, MTH 111 and completion of any 100-level BIO course Corequisite(s): BIO 250 and BIO 250L

This course introduces students to the biology and diversity of vertebrate species in Michigan. The life history, anatomy, behavior, systematics, ecology and conservation of each group of vertebrates are examined. Field studies, laboratory investigations, and classroom discussion will help students understand the biology of fishes, amphibians, reptiles, birds and mammals, as well as their relationships to particular habitats. Local vertebrate species and field study techniques are stressed. **Group 1 lab course.** 

**BIO 255 Pathophysiology**......**4.0 (4)** *Required prerequisite(s): BIO 228 with 2.0 or higher* This course covers the etiology, progression, and treatment of disease in the human body. Cellular and tissue structure and function are addressed along with the role of the immune system in the body defenses. Disorders and diseases for each body system are covered. **Group 1 course.** 

# BIO 260General Ecology5.0 (3)BIO 260LGeneral Ecology Lab0.0 (4)

Recommended prerequisite(s): ENG 111, MTH 111 and completion of any 100-level BIO course Corequisite(s): BIO 260 and BIO 260L

The course is an introduction to the study of the complex relationships of organisms with one another and with the physical conditions under which they live. Students will study the conditions necessary for life, population ecology, community and ecosystem dynamics and ecosystem diversity. Field oriented lab exercises involve observations and data collection followed by analysis. **Group 1 lab course.** 

### 

Recommended prerequisite(s): BIO 227, MTH 23 Study of the basic fundamentals of the chemical composition of living matter with application of concepts to normal and abnormal human function. **Group 1 course.** 

Visit **www.nmc.edu/science-math** for detailed information.

# **BUS Business**

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### Recommended prerequisite(s): CIT 100, placement into ENG 111

Communicating professionally is a critical skill in a today's world. This course is designed to help students understand communication theory and its application in their professional lives. Students will develop effective writing skills by analyzing complex issues, organizing thoughts logically, and communicating those ideas concisely--in verbal and written form. Students will also practice effective listening skills, understand the components of a successful job search, and use teamwork skills in solving communication problems. **Group 2 course.** 

### **BUS 261 Business Law I**......**3.0 (3)** *Recommended prerequisite(s): Placement into ENG 111* This course is a study of the U.S. legal system and specific areas of law related to business, with an emphasis on the techniques of legal decision-making. Topics include the judicial system, torts, contracts, and criminal law. **Group 2 course.**
**BUS 290** Business Administration Internship ..... 3.0 (3) *Required prerequisite(s): 20 credits of business courses with 3.0 GPA* This course is required for the Associate of Applied Science degree in Business Administration. The purpose of the internship is to provide on-the-job training for the student who wishes to pursue a career in business. The internship will be customized to meet the learning needs of the student and the job requirements of the sponsoring firm. Students spend 10 hours per week in this paid or non-paid, supervised on-thejob training experience. In addition to the required 150 hours in a business site, students participate in semi-monthly seminars. Students must apply one month prior to the semester in which they will complete the internship. **Group 2 course.** 

## **CAR Carpentry**

Recommended Competencies: COMPASS placement into MTH 23 or higher, or co-enrollment in the recommended developmental math course. COMPASS placement into ENG 11/111 or higher, or co-enrollment in the recommended English course.

This course provides an introduction to residential carpentry. Through structured classroom and hands-on skill building, the student will learn about building materials, fasteners and adhesives, hand and power tools, reading plans and elevations, and floor systems. **Group 2 course.** 

#### 

This course is for the student that has a desire to experience woodworking in the area of basic cabinet and furniture making. Techniques in the usage and maintaining of basic hand and power tools, understanding of how wood movement will affect design of an assembly, application of basic joinery, adhesives, and fasteners in the woodworking completion of this class establishes a foundation in which the student can build simple furniture and cabinets. **Group 2 course.** 

### 

Recommended Competencies: COMPASS placement into MTH 23 or higher, or co-enrollment in the recommended developmental math course. COMPASS placement into ENG 11/111 or higher, or co-enrollment in the recommended English course

Students will learn the skills needed to read and understand construction drawings, as well as an understanding of manufacturer's literature of component parts used in buildings. Both commercial and residential construction materials and drawings are studied.

### 

Recommended Competencies: COMPASS placement into MTH 23 or higher, or co-enrollment in the recommended developmental math course. COMPASS placement into ENG 11/111 or higher, or co-enrollment in the recommended English course Through structured classroom and hands-on skill building, the student will learn foundation design, lay-out, concrete materials, forms and applications, floor, wall, ceiling and roof framing and basic stair layout. **Group 2 course.** 

Through structured classroom and hands-on skill building, the student will learn about drywall products, installation, and finishing, wall panels, tile, suspended ceilings, finish trim, flooring and cabinet and countertop installation. **Group 2 course.** 

## CD Child Development

**CD 101 Early Childhood Education**.....**3.0 (3)** This course familiarizes students with the history and present state of early childhood education, from birth to 10 years of age. An overview of child development theories is presented in the context of the role of the educator/caregiver. Resources and careers, and contemporary issues such as school readiness and exploration of various education philosophies are also included. Early Education environment observations are required as well as a working general education philosophy. The observations are set by students to meet their schedules. Group 2 course.

#### **CD 202** Human Growth and Development ....... 5.0 (5) Recommended prerequisite(s): CD 101 or PSY 101, placement into ENG 111

This course focuses on the issues related to child development. It examines the reasons for child study and its influence on families and education. The interactions between all the developmental domains will be studied from conception up to adolescence. Students will become familiar with the most recent research, and design their own field observation and projects that support and test current theories of development. In addition, students will explore how professional work with children is changing and how they can become advocates for the well-being of children and families in their community, nation and the world. **Group 2 course.** 

This course examines the preparation and implementation of a positive social and emotional learning environment. Students will explore the development and use of effective guidance and discipline techniques for the young child. Special emphasis is placed on the development of strategies for positive personal interactions with children. Current concepts and approaches that directly relate to the mental health of the child and his/ her family are explored. Anger management and conflict resolution skills are especially emphasized through the building of positive environments. Field observations are required and are set by students to meet their schedules. **Group 2 course.** 

#### 

An active learning approach is used to develop student's skills in planning, implementing and evaluating developmentally appropriate learning experiences for children ages two-anda-half to 10. Various curriculum areas are covered: science, pre-math, math, drama and music, creative art, sensory, gross and fine motor, social studies and language arts. Basic skills and concepts, resource materials and teaching methods (developmental) are explored for each curriculum area. There is a strong emphasis on individualizing curriculum using the child's interests, modality of learning and intelligence theories. **Group 2 course.** 

#### 

This class provides an in-depth study of the physical, cognitive, social and emotional development of the infant and toddler. Students will learn how to use best practice methods with infants and toddlers. There will be a focus on attachment and bonding and how that relates to brain development and later social and academic development. Pregnancy and its influence on early relations will be explored. Students will learn how to build foundation relationships that are trust based. They will also develop skills to build a respectful and responsive environment for children and their families. **Group 2 course.** 

### CD 220 Childhood Program Management ....... 3.0 (3)

Recommended prerequisite(s): CD 101

This course is designed to develop skills for analyzing and developing early childhood program management practices, strategies, and models. Course instruction is based on the quality principles/standards identified by Child Development Associate Certification and the National Association of the Education of the Young Child (NAEYC). This course will examine the administrative fundamentals of early childhood programs and will include establishment, funding, licensing, staffing, budgets, equipment, philosophy and program planning. **Group 2 course.** 

#### 

This course is designed to teach students how to recognize and implement appropriate environmental strategies that support early literacy development and appropriate early experiences with books and writing. Emphasis is placed on speaking and listening, as well as reading and writing readiness. This group of skills includes expressive and receptive language, concepts of print and appreciation of literature, emergent writing, letter knowledge, and phonological awareness. Upon completion of the course, students will be able to select, plan, implement, and evaluate appropriate early literacy experiences. **Group 2 course.** 

### CD 290A-E Service Learning Internship 1.0 - 4.0 (1-4)

Recommended prerequisite(s): CD 101

This is a placement in a daycare, nursery school, early elementary or other agency that deals with children, birth through 12 years of age. The student will have the opportunity to interact with children, assist with planning for them and evaluate their progress under direct supervision. These credits can be divided over more than one semester. **Group 2 course.** 

# **CHM** Chemistry

СНМ	101	Introductory Chemistry4.0	(3)
СНМ	101L	Introductory Chemistry Lab0.0	(2)
<b>D</b>	7		

Required prerequisite(s): MTH 111

Corequisite(s): CHM 101 and CHM 101L

Recommended prerequisite(s): ENG 111 is strongly encouraged for online students

A one semester chemistry course for the non-science major exploring the language, concepts and methods of chemistry. Topics include atomic theory, chemical periodicity, chemical bonding, stoichiometry, gases, nuclear energy, equilibrium, and acid/base chemistry. The laboratory will include descriptive and analytical experiments, focusing on measurement, physical and chemical properties of materials, acids and bases, laboratory procedures and calculations. Science, engineering, and premedical students must select CHM 150 and 151 to meet chemistry requirements. This course is offered in multiple formats such as online or traditional. Consult with an advisor before enrolling. **Group 1 lab course.** 

CHM 1	50 Gen	eral Chemis	stry I	4.0	(3)
CHM 1	50L Gen	eral Chemi	stry I Lab	0.0	(2)
CHM 1	50RGen	eral Chemi	stry I, Recitation	1.0	(2)

Required prerequisite(s): MTH 111

Corequisite(s): CHM 150, CHM 150L, CHM 150R Recommended prerequisite(s): MTH 121

First semester of a two semester course covering matter and chemical measurement, basic laws, chemical symbols and formulas, stoichiometry and chemical calculations, gases and the gas laws, thermochemistry, atomic structure, electron configurations and the periodic table, elements, chemical bonding and molecular structure, liquids, solids, and intermolecular forces. The laboratory includes descriptive and quantitative experiments illustrating the above topics. The recitation includes problem solving, quizzes and laboratory preparation to accompany lectures. **Group 1 lab course.** 

CHM 151 General Chemistry II4.	0	(3)
CHM 151L General Chemistry II Lab0.	0	(2)
CHM 151R General Chemistry II Recitation1.	0	(2)
Required prerequisite(s): CHM 150		

Corequisite(s): CHM 151, CHM 151L and CHM 151R

A second semester course covering chemical reactions in aqueous solution including acid-base and oxidation and reduction reactions, properties of solutions, chemical kinetics, gaseous equilibria, acids and bases, acid-base equilibria, pH, common ion effect, buffer systems, solubility product constant, thermodynamics, enthalpy, entropy and free energy, electrochemistry, and nuclear chemistry. The laboratory will cover the above topics using quantitative and qualitative procedures. The recitation includes problem solving, quizzes, and laboratory preparation to accompany lectures. **Group 1 lab course.** 

#### 

Required prerequisite(s): CHM 151

Corequisite(s): CHM 250, CHM 250L

The first semester of a two semester course covering the chemistry of carbon compounds. Designed to meet the requirements for majors in chemistry, chemical engineering, biological science, pre-medicine, etc. Topics include nomenclature, structure, aliphatic compounds, free-radical, nucleophilic substitution and elimination reactions, electrophilic addition reaction and mechanisms, alkyl halides, alkenes and alkynes. The laboratory portion will cover fundamental organic laboratory techniques of synthesis, separation and analysis. Specific assignments parallel lecture topics wherever possible. **Group 1 lab course.** 

#### 

Required prerequisite(s): CHM 250

Corequisite(s): CHM 251 and CHM 251L

A follow up to CHM 250. Topics include alcohols, aromatics, ethers and epoxides, arenes, carbonyls, carboxylic and sulfonic acids and their derivatives, amines, phenols, aryl halides, carbohydrates, amino acids, biochemical processes, polynuclear aromatics, heterocycles, and others together with appropriate mechanistic theories and structural concepts. Instrumental techniques discussed include infrared spectroscopy (IR), nuclear magnetic resonance (NMR), mass spectrometry (MS), and ultraviolet (UV) spectroscopy. The lab exercises will continue the development of organic chemistry laboratory technique on both semi-microscale and microscale. In addition, analytical techniques using infrared spectroscopy and gas chromatography will be developed. **Group 1 lab course.** 

Visit **www.nmc.edu/science-math** for detailed information.

### CIT Computer Information Technology

**CIT 100 Computers in Business-An Intro** .......**3.0 (3)** *Recommended prerequisite(s): Keyboarding skills; CIT 122A or equivalent experience* 

A first exposure to the world of computer applications in business, this course covers the hands-on use of word processing, spreadsheets, databases, and presentation graphics programs, using the latest Microsoft Office Productivity suite. In addition, the Windows operating system, file and folder management, basic concepts, terminology, and security threats will be covered. **Group 2 course.** 

**CIT 109A Keyboarding I**.....**2.0 (2)** *Recommended prerequisite(s): CIT 122A or equivalent experience* Whether for personal or business use, knowledge of keyboarding is a must today! This course introduces you to the computer keyboard. Areas of emphasis include touch keyboarding of letters, numbers, and symbols. Students who already have the above skills may bypass CIT 109A and enroll in CIT 109B. Online format. **Group 2 course.** 

#### **CIT 109B Keyboarding II**.....**2.0 (2)** *Recommended prerequisite(s): CIT 109A, and CIT 118 or CIT 119*

Continuation of keyboarding skills development which has been acquired in either CIT 109A or previous keyboarding experience. Emphasis on computers and Microsoft Office Word used in the application of keyboarding skills for personal and business situations, intensive drill work for speed and accuracy improvement, and use of numeric keypad. Online format. **Group 2 course.** 

#### **CIT 110 Programming Logic and Design**......**3.0 (3)** *Required prerequisite(s): MTH 111, may be taken concurrently*

*Recommended prerequisite(s): CIT 122A* This course will prepare the student for programming courses. Topics covered include flow charting, pseudocode, object orientation, decisions and looping program constructs, collections and arrays, and recursion. Lecture topics will be reinforced with hands-on coding, testing, debugging, and documentation exercises. **Group 2 course.** 

#### CIT 118 Microsoft Office - Word Intro ...... 1.0 (1) Recommended prerequisite(s): CIT 122A

Recommended competency: Basic keyboarding and Windows skills This course is designed to provide students with an introduction to word processing using Microsoft Word. Students learn how to prepare documents, format characters and paragraphs, customize paragraphs, and format pages. **Group 2 course.** 



**Course Descriptions** 

This course teaches students how to use Microsoft Word and prepares them to pass the Microsoft Office Specialist (MOS) Word certification exam. Skills students will learn include navigating in a document, customizing and formatting text, paragraphs and pages, inserting objects, maintaining and proofing documents, performing mail merge operations, document sharing and management, tracking and referencing documents, and managing macros and forms. Students enrolling in this course will take the Microsoft Office Certification exam. **Group 2 course.** 

CIT 122B Computer and Internet Basics II ...... 1.0 (1) Recommended prerequisite(s): CIT 122A

Students will learn additional skills required to use a computer and the Internet effectively. Additional experience with applications, object linking, and embedding is included. Students will investigate administrative and management tools with specific emphasis on security. Students will create and publish basic web pages using HTML. **Group 2 course.** 

CIT 124 Microsoft Office - PowerPoint ...... 2.0 (2)

Recommended Competency: Basic keyboarding, Windows skills. This course teaches students how to use Microsoft PowerPoint and prepares them to pass the Microsoft Office Specialist (MOS) PowerPoint certification exam. Skills students will learn include preparing and modifying a presentation, using help, formatting slides and inserting elements in slides, creating tables, charts and SmartArt graphics, using slide masters and action buttons, applying custom animation and setting up shows, and integrating, reviewing, protecting and saving presentations. Students enrolling in this course will take the Microsoft Office Certification exam. **Group 2 course.** 



**CIT 156 CompTIA A+® Certification I**.....**3.0 (4)** This course, in conjunction with CIT 157, covers the objectives of the CompTIA A+ Certification exams. CIT156 concentrates primarily, but not exclusively, on the Essentials exam requirements, including: personal computer components, laptop and portable devices, operating systems, printers and scanners, networks, security, safety, environmental issues, communication and professionalism. **Group 2 course.** 

#### 

*Recommended prerequisite(s): CIT 156* This course, in conjunction with CIT 156 covers the objectives of the CompTIA A+ Certification exams. CIT157 concentrates primarily, but not exclusively, on the Practical Application exam requirements, including: personal computer components, laptop and portable devices, operating systems, printers and scanners, networks, security, safety, environmental issues, communication and professionalism. **Group 2 course.** 

CIT 160 Cisco Internetworking I......4.0 (4)

Recommended prerequisite(s): CIT 213

This course, in conjunction with CIT 161, CIT 260 and CIT 261 provides the necessary preparation to pass the Cisco CCNA Exam (Cisco Certified Network Associate). The following topics are covered in detail: the OSI Model, LAN topologies and protocols, logical addressing and internetworking devices. This course utilizes the Cisco Networking Academy "Exploration: Network Fundamentals" curriculum and Integrates online curriculum, classroom activities and hands-on lab exercises. **Group 2 course.** 

**CIT 161 Cisco Internetworking II**......**4.0 (4)** *Required prerequisite(s): CIT 160, may be taken concurrently* This course, in conjunction with CIT 160, CIT 260, and CIT 261, provides the necessary preparation to pass the CCNA Exam (Cisco Certified Network Associate). The following topics are covered in detail: VLSM, Cisco CLI, IOS, router configuration, static routing, dynamic routing protocols, including RIPv1, RIPv2, OSPF and EIGRP. This course utilizes the Cisco Networking Academy "Exploration: Routing Protocols and Concepts" curriculum and integrates online curriculum, classroom activities and hands-on lab exercises. **Group 2 course.** 

#### **CIT 180** HTML and CSS Programming......3.0 (3)

Recommended prerequisite(s): CIT 122A or equivalent skills. Recommended competencies: Placement into ENG 11/111 and MTH 111

Students in this course will develop skills in HTML5 web development with a focus on CSS3 styling techniques. An emphasis is placed on developing solid coding practices as well as providing for ADA compliance requirements and W3C HTML and CSS validation. Students will develop three web project during the course. A brief introduction to JavaScript and other web related extended topics is included. A working knowledge of file/folder storage and manipulation is required. Group 2 course.

#### CIT 190 JavaScript Programming......3.0 (3)

Required prerequisite(s): CIT 110 and CIT 180

Recommended competencies: Windows file management skills; HTML and CSS coding skills

Students in this course develop web client scripting skills using JavaScript and jQuery. Students use variables, decisions, loops, functions, objects, and other programming concepts as they add robust and powerful interactivity to web pages. Students create web solutions integrating HTML, CSS, JavaScript, jQuery, JSON, and Ajax technologies. Group 2 course.

#### **CIT 195** Required prerequisite(s): CIT 110

The student is introduced to .NET application development. Students use Visual Studio to develop MS Windows applications. Application features will include basic input and output, variables, collections, menus, and integration with databases. Object-oriented concepts, application design, program structure, and proper documentation are also covered.

Group 2 course.

#### 

Required prerequisite(s): CIT 190

#### Recommended prerequisite(s): CIT 195

This course will provide an in-depth look into responsive web design with HTML5. Students will focus on a semester long development effort to create truly engaging websites for both mobile and desktop clients. Students will garner a better understanding of the inner workings of HTML5 while deriving a sense of what it means to develop for a larger device ecosystem. Group 2 course.

**CIT 210** 

Recommended prerequisite(s): BUS 105, CIT 122A, MTH 23 This course deals with a comprehensive study of the most current electronic Excel spreadsheet software, Microsoft Office Excel and the business applications which can be created and used with the software. The entry of data with different formats, formula creations, file transfer of data, database management, graphing, data tables, solver programs, and an introduction to macros will be covered. Course content is mapped to the current Microsoft Office Specialist (MOS) Excel learning objectives and students enrolled in this course will take the certification exam. Group 2 course.

#### CIT 213 Networking Technologies......4.0 (4)

Recommended prerequisite(s): CIT 156, CIT 157, may be taken concurrently

This course covers terminology, topologies and media necessary for LANs and WANs. The OSI model will be studied and identified to better enhance the understanding of how various parts work together. Included is an indepth study of TCP/IP and the characteristics for maintaining a network, and ensuring its security. This course maps to the CompTIA Network+® certification exam objectives. Group 2 course.

#### CIT 215 Required prerequisite(s): CIT 213

In this course students will learn about the latest Windows Server operating system. Students will learn and install many server roles and features. Concepts studied include Windows Installation Active Directory Domain Services, DNS, DHCP, PowerShell and Group Policy. Students will have an opportunity to work with a Server Core Installation and virtualization using Hyper-V. Account management will be studied and students will set up users and groups, and configure access control lists. The course maps to the Microsoft 70-410 installing and configuring Windows Server 2012 R2 certification exam. Group 2 course.

#### CIT 216 Computerized Acctg. Systems ...... 2.0 (2) Recommended prerequisite(s): ACC 121

This course is designed to give the student experience with setting up an accounting system on the computer. QuickBooks software will be used. Accounts receivable, accounts payable, general ledger, inventory, and payroll will be covered. Group 2 course.

**CIT 218** Web APP Programming ASP .NET...... 3.0 (3) Required prerequisite(s): CIT 208, CIT 248, CIT 255 Students will create dynamic web pages using ASP.NET. Page designs will use server controls to create common user interface elements and user controls to achieve site consistency. Students will develop interactive web pages that access and update databases using ADO.NET. Group 2 course.

CIT 233 Recommended competency: Windows knowledge This course is intended for CIT students and business professionals who need to manage project activities or resources on time, on budget, and according to performance standards. Students use Microsoft Project as a project management tool to schedule tasks, and monitor resources, costs, and project progress. Group 2 course.

#### CIT 240 Required prerequisite(s): CIT 213

This course examines the fundamentals of computer network security and explores current practices for securing network resources. Course content is mapped to the CompTIA Security+ certification exam objectives, which include network security, compliance and operational security, threats and vulnerabilities, application, data and host security, access control and identity management, and cryptography. Group 2 course.

**Course Descriptions** 

#### CIT 242 Windows Client Administration ......2.0 (2)

Recommended competency: Basic Windows skills

In this course students will study the Windows Client operating system. Course topics include: installing Windows; conducting administration of resources; implementing, managing, monitoring, and troubleshooting hardware devices and drivers; configuring and troubleshooting the desktop environment; implementing, managing, and troubleshooting network protocols and services. **Group 2 course.** 

#### 

Required prerequisite(s): CIT 215

SStudents taking this course will learn how to setup, configure, and maintain a Windows Server Infrastructure. Topics covered include administering and troubleshooting DHCP, DNS, Network Access Protection, IPSec, and Virtual Private Networks. System performance and reliability will also be studied. This course maps to the Microsoft 70-411 administering Windows Server 2012 R2 certification exam. **Group 2 course.** 

#### 

Required prerequisite(s): CIT 246

Students taking this course will learn how to manage dayto-day server operations. Server administrators manage the infrastructure, web, and IT application servers. Students will use PowerShell to perform many administrative tasks. Topics covered include high availability, file and storage solutions, business continuity and disaster recovery, certificate services and federation services. This course maps to the Microsoft 70-412 configuring advanced Windows Server 2012 R2 services certification exam. **Group 2 course.** 

#### 

Required prerequisite(s): CIT 170

Microsoft SQL Server is used in this course to introduce students to enterprise database analysis and administration tasks. Students focus on performance, scalability, reliability, and security as they normalize database designs, enforce data integrity, create indexes and stored procedures, optimize queries, and control database access. **Group 2 course.** 

### CIT 255 .NET Object-Oriented Programming.....3.0 (3)

Required prerequisite(s): CIT 170, CIT 195

The student builds on .NET programming fundamentals learned in CIT 195, focusing on object-oriented concepts throughout the course. The definition and use of classes with multiple properties, methods, and constructors is covered early. The student implements encapsulation, inheritance and polymorphism while creating several applications in Visual Studio .NET. **Group 2 course.** 



Required prerequisite(s): CIT 213

In this course students will take an in-depth look at Linux, focusing on proper installation, command line usage, and administration of the operating systems. Students will examine the concepts common to all Linux systems, which have increased its popularity. Exploration will take the form of a practical, hands-on approach, using a mix of hands-on projects as well as web resources. This course will prepare students for the first CompTIA Linux+ certification exam. **Group 2 course.** 

#### 

This course, in conjunction with CIT 160, CIT 161, and CIT 261, provides the necessary preparation to pass the Cisco CCNA Exam (Cisco Certified Network Associate). The following topics are covered in detail: LAN switching, VLANs, VTP, DTP, STP, inter-VLAN routing and basic wireless. This course utilizes the Cisco Networking Academy "Exploration: LAN Switching and Wireless" curriculum and integrates online curriculum, classroom activities and hands-on lab exercises. **Group 2 course.** 

#### CIT 261 Cisco Internetworking IV.......4.0 (4) Required prerequisite(s): CIT 260,

may be taken concurrently

This course, in conjunction with CIT 160, CIT 161, and CIT 260, provides the necessary preparation to pass the Cisco CCNA Exam (Cisco Certified Network Associate). Topics covered in detail: WAN design, HDLC, PPP, Frame Relay, ATM, cable, NAT/PAT, DHCP, network management and CCNA exam review. This course utilizes the Cisco Networking Academy "Exploration: Accessing the WAN" curriculum and integrates online curriculum, classroom activities, and hands-on exercises. **Group 2 course.** 

#### 

Students will create various types of computer application solutions based on the .NET framework, incorporating content from prior programming and database courses. Data access strategies are examined. Standard industry patterns and practices are emphasized. Software projects are used to demonstrate the software development life cycle. **Group 2 course.** 

#### 

This course is the capstone course in the CIT Developer and CIT General associate degree programs. It introduces the student to the phases in the systems development life cycle. Students will gain practical knowledge in systems analysis through participation in a team-based system development project. Students will conduct a feasibility study, perform requirements analysis, and model objects and data. Students will apply their knowledge of database design and programming, and they will create a user interface using elements of both traditional and modern systems analysis methodologies. **Group 2 course.** 

#### 2014 - 2015 NMC CATALOG

**CIT 290 CIT Internship**......**3.0 (3)** *Required prerequisite(s): 20 credits with a minimum of 3.0 GPA in CIT courses and instructor permission* Work experience is an integral part of the CIT student's program. In this course, students are placed in settings that utilize their business and CIT skills. Students will work 150 hours during the semester in a paid or non-paid, supervised on-the-job training experience. Students must meet with their academic advisor and submit a resume for review before they will be allowed to enroll in this course. **Group 2 course.** 

#### CIT 291 Web Master Internship ...... 3.0 (3)

Required prerequisite(s): Instructor permission Work experience is an integral part of the Web Master Certificate program. In this course, students are placed in settings that utilize their web installation and development skills as well as business and CIT skills. Students will work 150 hours during the semester in a paid or non-paid, supervised on-the-job training experience. Students must meet with their academic advisor and submit a resume for review before enrolling. **Group 2 course.** 

## **CJ** Criminal Justice

#### 

This course will present an overview of public administration with the emphasis on the vitality and capacity to pragmatic change within our American police system. This understanding will be brought about by the comprehensive and analytical study of the structures, processes, and behavior of the typical police infrastructure in the United States. **Group 2 course.** 

**CJ 211 Criminal Law**.....**3.0 (3)** *Recommended prerequisite(s): Placement into ENG 111* This offering will study Constitutional law and the Bill of Rights as they directly relate to the powers and the limitations of both federal and state law enforcement officers. Current judicial case histories are studied so as to better understand the changes in enforcement policies. The judicial process is reviewed from time of arrest, arraignment, pre-trial, and trial procedure to the final determination of the case. This course is offered spring semester. **Group 2 course.** 

This course is a study of juvenile delinquency theories of causation and current prevention programs. It will explore the nature and extent of delinquency and examine suspected causes of delinquent behavior. It will also cover critical issues in juvenile delinquency and examine crucial policies and programs in the criminal justice system that address juvenile delinquency. It will also include issues facing juvenile probation officers and it will look at the role of police agencies and their relationship to juvenile courts. **Group 2 course.** 

**CJ 231 Survey of Corrections**.....**3.0 (3)** *Recommended prerequisite(s): Placement into ENG 111* This course will examine the historical and philosophical development of corrections in the United States. Special consideration is given to the theoretical approaches to changing and controlling criminal behavior. Practical limitations and justification to probation, parole, and the operational functions of institutional supervision are also studied. **Group 2 course.** 



### CMT Construction Management

#### **CMT 103 Construction Safety** ......**1.0 (1)** Through structured classroom activity, students will learn the role of OSHA in job site safety, demonstrate hazard recognition and risk assessment techniques, demonstrate an understanding of assured equipment grounding conductor programs and the use of GFCIs, understand proper rigging safety procedures and demonstrate use of hand signals. **Group 2 course.**

**CMT 107 Construction Supervision**......**4.0 (4)** Students will learn the skills needed for construction management including: business management, estimating and job costing, design and building science, contracts, liability and risk management, marketing and sales, project management and scheduling, the Michigan Residential Code, MIOSHA construction safety standards, and effective communication

for construction project management. Group 2 course.

#### 

Required prerequisite(s): CAR 103, CMT 107; MTH 111 or higher Recommended prerequisite(s): ENG 111, may be taken concurrently

In this course students will explore topics pertaining to the processes of construction estimating and bidding techniques. Those topics will include, but are not limited to, the discussion and exploration of the identification and quantification of construction materials, labor, and equipment for the construction bidding process. Some computer estimation programs and/or cost data publications will be used to develop estimates. **Group 2 course.** 



# **COM** Communications

**COM 121 Broadcasting Practicum I......2.0 (2)** Practical experience in underwriting, announcing, script writing, "on-air" studio operations and the management of the non-profit college radio station are all part of this course. Internships with local radio stations may be arranged. **Group 2 course.** 

**COM 122 Broadcasting Practicum II** ......**2.0 (2)** This course continues practical experience in underwriting, announcing, script writing, "on-air" studio operations and management. Internships with local radio stations may be arranged. **Group 2 course.** 

#### **COM 150** Global Information Strategies......**1.0 (1)** Required prerequisite(s): ENG 99, may be taken concurrently or instructor permission

This course explores information, its role in society and the specific types of information resources available to today's learner. Students will identify information resources based on research need and discover the digital tools available to locate these resources. Criteria for critically evaluating resources will be applied. Students will implement advanced research strategies using various online research tools. Current technologies for organizing and sharing information will be examined. **Group 2 course.** 

### **CUL** Culinary Arts

#### 

This course is designed for students seeking a career in Culinary Arts. This course will provide a broad orientation to aspiring chefs so that they will better understand what is required to succeed in the industry. Emphasis will be placed on professionalism, safety and sanitation, use of commercial equipment and small wares, basic knife skills, and identification of food products. This course will discuss culinary math, standardized recipes and food science basics. Students will be required to purchase an initial set of uniforms for the course. Students will be furnished with hand tools for skills development. Students must receive an overall GPA of 2.5 to pass the class, as well as pass the final practical with a minimum of 2.5. Note: Course is required for all culinary students. A waiver for this course may be obtained by documenting attendance at a career technical center with a minimum GPA of 2.5 and/or relevant industry experience. Students must submit appropriate documentation (high school transcript and/or resume) to the department chair at least two weeks prior to the beginning of the semester. Group 2 course.

#### **CUL 101 Today's Hospitality Industry** ......**3.0 (3)** *Recommended competencies: COMPASS scores: Pre-Algebra, 21; Writing, 70; Reading, 82*

This course is designed for students who wish to pursue a career in the hospitality industry. It introduces the student to segments of the industry and the different career tracts within each one. The course will acquaint the student with the rigors of hospitality and the particular nature of this people-oriented industry. A foundation course in the study of resort and resort settings, the course provides the student with an awareness of the unique problems associated with the development, management and marketing of a resort. Also, the seasonal nature of most resorts and the challenges presented by this issue are discussed. The nature and unique characteristics of the hospitality industry as a career choice are discussed. **Group 2 course.** 

**CUL 121 Purchasing and Receiving**......**2.0 (2)** An overview of how food is purchased, received, stored and distributed is discussed in this course. Focus is on product identification, availability, seasonality, price, quality, and freshness. The course also includes the purchasing practices and controls that help to insure a correct product specification. Proper forms for ordering, issuing, inventory, and cost controls are used. **Group 2 course.** 

#### **CUL 190 Culinary Internship**......**2.0 (2)** *Required prerequisite(s): CUL 110, CUL 111, CUL 118, CUL 213 and Culinary staff approval*

A culinary internship integrates academics with professional work experience. Students earn college credit while working in fine dining properties, gaining valuable hands-on experience. Students are encouraged to contact the internship coordinator at least two months prior to the semester they are requesting placement. Culinary internships are 40 hours per week for an eight-week summer session. **Group 2 course.** 

No one will argue that the menu is the soul of a restaurant. This course provides the student with the understanding of the menu as the center of the food outlet, around which is built the facility. Menu theme is the driver for equipment purchases, staffing, location and floor plan. An understanding of this complex item is vital to anyone involved in food service. This course is designed to familiarize the student with all aspects of planning a modern menu - from market research to the physical layout of the document. Various types of menus are covered including A'La Carte, Table d'Hote, Institutional and Special Occasion. Menus will be analyzed for effectiveness and pricing strategies along with the menu planning. **Group 2 course.** 

#### 

This course is designed for the student who wishes to be a professional chef. It comprises the study, preparation and presentation of foods and cooking methods from selected countries. These countries have been selected based on their current popularity in restaurants. In this course, students develop a knowledge and basic understanding of ethnic cooking including the cooking styles of Italy, France, Mexico, China, and various other Asian and American regions. In the process of learning these multi-national cuisines, the student develops additional technical skills in the preparation of the different foods. **Group 2 course.** 

### 

Recommended prerequisite(s): CUL 101

This course is designed for students who wish to pursue a career in the food service industry. Its focus is the control of the dynamics of the kitchen and dining room in a modern restaurant. In the highly competitive restaurant business, it is necessary for prospective food and beverage professionals to have a thorough understanding of this aspect of the industry. Many restaurants fail because of a lack of coordination between the front and back of the house. The course focuses on the basic principles of management as applied to kitchen and dining room situations. Other topics include TQM management techniques, team building, motivational techniques, stress management, production management, and styles of table service. **Group 2 course.** 

This course is designed for students seeking a career in Culinary Arts. In this intensive study of advanced baking techniques, students will become familiar with baking operation and production as well as dessert and pastry finishing and plate presentation. This course covers more advanced pastry and dessert recipes as well as the preparation of yeast dough. Pastries, desserts and dessert sauces will be served to guests at Lobdell's, the Great Lakes Culinary Institute's teaching restaurant. Cake icing and finishing is also included as are tortes, mousses, Bavarians, tarts and other desserts. **Group 2 course.** 

#### 

This course is designed for students who wish to pursue a career in pastry arts. It is designed for students that would like to expand their creative talents in areas of chocolate artistry and cake decorating. In this course students will learn through lecture, demonstrations and lab work the characteristics of chocolate, chocolate tempering and modeling, candies, fillings, centerpieces, molds & decorations. The cake decoration portion of the course will cover buttercream recipes, history of cake decorating and tools, preparation of boards, papers, columns, boxes, etc., the art of icing a cake, basic cake covering using combs and spatulas, basic piping skills and the use of decorating tips, border skills, floral piping skills, art of swag and drapery applications, art of writing and coloring on a cake. Course includes how to create and display wedding cakes, icings, fondant, pastillage, and gum paste. Group 2 course.

#### CUL 295 Contemporary Service & Cuisine ..... 12.0 (24) Required prerequisite(s): CUL 211, CUL 213

Recommended competency: Basic keyboarding and computer skills This course focuses on practical hands-on training. Students rotate through the front-of-the-house and the restaurant kitchen in this intensive semester-long course. Front-of-the-house students learn various styles of table, wine and beverage service. Menu merchandising is stressed throughout the course. Guest relations and timing of service are also emphasized as advanced students serve lunch to guests in Lobdell's, the Great Lakes Culinary Institute's teaching restaurant. Heart-ofthe-house students learn classical food preparation preparing designated menu items. Other areas covered include recipe construction and costing, the use and care of equipment, the pressure of a la carte preparation and service, and the effective handling and use of supplies. **Group 2 course.** 



# DD Drafting & Design

This course presents the making and forming of steel and the classification of steel, cast iron and aluminum. Mechanical and physical properties are presented along with hardness and tensile testing labs. Principles of alloying, crystal structure, and the iron-carbon diagram help students understand how annealing, hardening, and tempering processes alter the mechanical properties of steel. Non-ferrous metallurgy is presented with an emphasis on aluminum. **Group 2 course**.

#### DD 170 CADD/Computer Modeling ......4.0 (5)

Recommend competency: MTH 23

This course is a graphic communication course using 3D parametric modeling techniques. Topics include 3D modeling using SolidWorks software in an engineering design environment. Students will also develop 2D drafting skills including proper organization and layout of component drawing views, dimensioning and tolerancing, sectioning and detailing, detail descriptive geometry and rapid prototyping. **Group 2 course.** 

## **DNC** Dance

**DNC 101 Beginning Dance: An Exploration......2.0 (4)** This course will introduce the major disciplines of dance: ballet, jazz, and modern. Basic dance skills will be acquired through the practice of exercises, steps, and techniques. This course is designed for those with little or no background in dance. Group 2 course.

**DNC 110 Modern Dance I**......**2.0 (4)** *Recommended prerequisite(s): DNC 101 or previous experience* This course is designed to introduce students to the physical training and the creative thought process involved in executing modern dance as an art form. This course will consist of technique, improvisation, and creative problem solving through movement. Modern dance and its relationship to music and the historical development of modern dance will also be explored. **Group 2 course.**  **DNC 111 Modern Dance II**......**2.0 (4)** *Recommended prerequisite(s): DNC 110 or previous experience* This course is designed as an extension of Modern Dance I. This class will consist of increasing proficiency in modern dance through extended studies in technique, improvisation, creative problem solving, and performance. Dance history and motif writing in dance will also be explored. **Group 2 course.** 

### DNC 120 Choreography and Performance ........... 2.0 (2)

*Recommended prerequisite(s): DNC 111* Study choreography by participating in an instructor-led choreographed dance, created through structured improvisation and creative problem-solving techniques. Students will also create and develop their own dances through the exploration of a wide range of approaches to choreography. Performance and its relationship to community and cultural values will also be explored. The culmination of the class work will be a dance performance for the public. **Group 2 course.** 

# **ECO** Economics

This principles level course analyzes macroeconomic theory and concepts; and applies them to contemporary economic issues, problems, and policies. Topics include nature and scope of economics; national income accounting; government revenues, expenditures, and national debt; unemployment and inflation; economic growth; money and banking; and monetary, fiscal, and international trade policies. **Group 1 course.** 

#### 

This principles level course analyzes microeconomic theory and concepts; and applies them to contemporary economic issues, problems, and policies. Topics include supply and demand analysis, productivity and the firm's costs of production, price and output determination under various market structures, government interventions in markets, factor allocation and pricing, and international trade. It is recommended that students take ECO 201 before ECO 202. **Group 1 course.** 



# **EDU** Education

# EET Electronics Technology

Recommended prerequisite(s): Compass placement into MTH 23 and ENG 99

This course is designed to give students an overview of engineering technology and the career options this profession provides. This course highlights the technical specializations within the Engineering Technology degree at NMC. Course topics also include engineering design methods, project management principles and practices, team work skills, engineering ethics, and the role of engineering in global and environmental issues. **Group 2 course.** 

This course examines the fundamentals of electricity, including direct current, resistive circuits, electrical terminology, units and component symbols, electrical safety, circuit conductors, wire sizes, circuit protection devices. Electrical safety will be stressed as well as the use of multi-meters and other test equipment. **Group 2 course.** 

#### 

This course is a continuation of the fundamentals of Electrical Studies, including direct current, alternating current, writing practices, inductors, capacitors, and transformers. The use of oscilloscopes and multi-meters and other test equipment. Group 2 course.

#### 

This course introduces the elements of a laser, operation of a helium-neon gas laser, laser physics, optical-cavities, properties of laser light, and a survey of laser systems. Safety procedures concerning lasers and related equipment are presented in this course. **Group 2 course.** 

EET 212 Elements of Photonics ......4.0 (5)

Required prerequisite(s): EET 161

Elements of Photonics builds upon and applies principles presented in Fundamentals of Light and Lasers. The course includes modules on Operational Characteristics of Lasers; Specific Laser Types; Optical Detectors & Human Vision; Principles of Optical Fiber Communications; Photonics Devices for Imaging, Storage and Display; and Laser Welding and Surface Treatment. **Group 2 course.** 

#### 

*Required prerequisite(s): EET 103 or ELE 105* This course studies control circuits, electrical schematics and line diagrams. Motor circuits utilizing motor starters, contactors, timers and counters are used to demonstrate control circuitry. Industrial control devices are examined, including solid-state control devices, electro-mechanical relays, proximity sensors, photoelectric sensing devices and programmable logic controllers. **Group 2 course.** 

# **EET 232 Programmable Logic Controllers** ....... **3.0 (4)** *Required prerequisite(s): EET 221*

This course studies programmable logic controllers (PLCs). Basic models and complete applications are applied to control inputs and outputs of PLCs. Ladder logic and device wiring techniques are studied, along with advanced program instructions such as counters, timers, sequencers and integer moves. Input/output devices are used to examine PLC program logic during the control process. **Group 2 course.** 

#### 

This course is a study of the integration of program styles and components used in industry. Program structures and instructions will be used in lab projects to simulate how PLCs are used to create a variety of useful functions. A mixture of textbook and component manuals will be used to learn the necessary information to complete these functions. **Group 2 course.** 

#### **EET 234 PLC Applications II** ......**3.0 (4)** *Required prerequisite(s): EET 233*

This course is a continuation of the study of the integration of program styles and components used in industry. Program structure and project development will be studied. Installation of different types of components integrated with PLCs will also be studied. **Group 2 course.** 



# EGR Engineering

This course is designed to satisfy the elementary surveying requirement for a student studying engineering. Students will learn the theory involved in plane and geometric surveying

learn the theory involved in plane and geometric surveying including both linear and angular measurement, traverse computations, stadia, topographical mapping and the design of horizontal and vertical curves as related to construction surveys. Students are expected to perform lab experiments in which they demonstrate their knowledge of concepts learned in lecture, incorporating the basic skill learned in lecture to field settings. Care, adjustment, and use of basic surveying instruments; leveling, taping, horizontal and vertical angle measurements, traverse surveys, horizontal highway curve layout, GPS surveys, electric distance measurement, topographic mapping; fundamental surveying procedures and office computation are all included. Computer spreadsheets and mapping programs are used to facilitate the learning process. **Group 2 course.** 

### 

Required prerequisite(s): MTH 141 Recommended prerequisite(s): ENG 111

This is the first in a three course sequence in Engineering Mechanics. This course covers those topics included in the study of statics, such as forces acting upon a particle and rigid body at rest, analysis of structures, frictional forces, centroids and moments of inertia. Vector algebra and differential calculus are used throughout the course. **Group 2 course.** 

#### 

This is the second in a three course sequence in Engineering Mechanics. This course covers those topics included in the study of mechanics of materials. This includes stress and strain of engineering materials, torsion, Hooke's Law, and shear and moment diagrams, combined stresses, beam deflection, columns, pressure vessels, structural connections, and buckling of structures. Vector algebra and differential calculus are used throughout the course. **Group 2 course.** 

#### 

This is the third in a three course sequence in Engineering Mechanics. This course includes those topics typically covered in dynamics such as kinematics, kinetics, particle and rigid body motion, work-energy principles, impulse-momentum, Newton's Laws of Motion, and harmonic motion. Vector algebra and differential calculus are used throughout this course. **Group 2 course.** 

### Visit www.nmc.edu/science-math

for detailed information.

# EGY Renewable Energy

This course highlights industry and governmental perspectives on geothermal, wind, solar, biomass, fuel cells, and other energy sources. **Group 2 course.** 

#### 

This course provides an introduction to sustainable building practices and is for those students studying for the Environmental Design (LEED) Accredited Professional (AP) Exam. Through structured learning activities, the student will learn about hte structure of matter and the material world, whole system thinking, site and natural energy mapping, water resources, building orientation, materials and resources, indoor air quality, innovation and design. **Group 2 course.** 

#### 

Through structured classroom and hands-on skill building, the student will learn about the principles of energy, building shell construction, air leakage, insulation, windows and doors, heating, lighting, cooling, water heating, health, and safety. **Group 2 course.** 

**EGY 141** Solar Photovoltaic Tech I.......3.0 (3) *Recommended prerequisite(s): ELE 101 or EET 103 Recommended competencies: MTH 111 and MTH 121* Through structured lecture and practical skill building, the student will learn about PV applications, solar radiation, site surveys, system components, system sizing, and reparation of a solar installation proposal. Group 2 course.

Through structured classroom and hands-on skill building, the student will learn the history of solar thermal heating systems, components, drainback systems, glycol systems, start up and maintenance procedures, savings and performance estimates, system control, monitoring and testing and solar space heating design. **Group 2 course.** 

#### 

This course introduces the basic principles of geothermal energy production and technology. Essentials on how to utilize geothermal technology as an energy source will be analyzed and demonstrated. Examples of residental and commercial applications will be shown and reviewed. **Group 2 course.** 

#### 

Through structured classroom and hands-on skill building, the student will learn about inverters, PV system sizing, mechanical integration, electrical integration, utility interconnections, permitting and inspection, commissioning, maintenance, troubleshooting and economic analysis. **Group 2 course.** 

#### 

Through structured classroom discussion, the student will learn about wind applications, measuring the wind, estimating power output of various sizes, economics of wind generation, evaluating technology, towers, interconnection with the utility, siting, installation, operation, performance, maintenance, and safety. **Group 2 course.** 

# **ELE Electrical**

#### 

Through structured classroom and hands-on skill building, the student will learn general information for electrical installations in the residential field to include: electrical symbols and outlets, determining the required number of lighting and receptacle outlets, conductor sizing and connections, switch control, bonding/grounding, ground-fault circuit interrupters and similar devices, and begin calculations for wiring various rooms in a common residential building. **Group 2 course.** 

#### 

*Recommended prerequisite(s): ELE 105, MTH 111* This preparatory course reflects many of the important changes that appear in the current edition of the National Electrical Code. The changes are presented as they pertain to Single Family Dwellings, Multifamily Dwellings, Commercial Locations, Industrial Locations, and Hazardous Locations. It is designed to enable the student to learn electrical printreading and become familiar with applicable sections of the National Electrical Code. **Group 2 course.** 

#### 

Required prerequisite(s): ELE 110

Recommended prerequisite(s): ELE 105

This course will help the student in learning to read and interpret the meaning of the Code, and to find information about how to do wiring installations. Upon completion of this course, the student will be able to find information from the Code needed to do residential, commercial, farm, and industrial wiring and to be successful with electrical examinations. **Group 2 course.** 

#### 

Through structured classroom and hands-on skill building, the student will learn advanced residential wiring techniques including: workshop circuits, special purpose outlets, gas and oil central heating systems, low-voltage wiring, alarms and security systems, service entrance equipment, overcurrent protection, service entrance calculations, swimming pools, home automation systems, and standby power systems. **Group 2 course.** 

#### **ELE 125 Pre-Commercial Electrical**......**3.0 (4)** *Required prerequisite(s): ELE 121*

Through structured classroom and hands-on skill building, the student will learn small sources of electricity, basics of alternating current, AC circuits containing inductance, AC circuits containing capacitors, AC circuits containing resistance-inductance-capacitance, three-phase power, transformers, DC machines, and AC machines. **Group 2 course.** 

### 

Required prerequisite(s): ELE 105

Through structured classroom and hands-on skill building, the student will learn commercial building plans and specifications, reading electrical drawings, calculating the electrical load, branch circuits, wiring methods, motor and appliance circuits, feeders, special systems, and working drawings. **Group 2 course.** 

Through structured classroom and hands-on skill building, the student will learn special circuits, panelboards selection and installation, the electric service, lamps and ballasts for lighting, luminaires, emergency, standby and optional standby systems, overcurrent protection, short-circuit calculations, equipment and conductor short-circuit protection, low-voltage remote-control, and the cooling system. **Group 2 course.** 

### 

#### Required prerequisite(s): ELE 105

Through structured classroom and hands-on skill building, the student will learn plans and sitework, the unit substation, feeder bus system, panelboards, trolley busways, using wire tables, signaling systems, basic motor controls, motors and controllers, and motor installation. **Group 2 course.** 

### 

Required prerequisite(s): ELE 142

Through structured classroom and hands-on skill building, the student will learn power factor, ventilating, air conditioning, and other facilities, system protection, lightning protection, site lighting, programmable logic controllers, developing a program for a PLC, fiber optics, hazardous locations, and harmonics. **Group 2 course.** 

# **ENG English**

#### ENG 11 English/Writing Methods 2.0 (developmental)

Students will be placed in this course as a result of......(2) COMPASS testing

*Required prerequisite(s): ENG 108, may be taken concurrently Corequisite(s): ENG 111* 

This course is to be taken concurrently with ENG 111, and helps facilitate the objectives of ENG 111. Special attention is given to individual student needs in the conventions of standard written prose, argumentation, and research.

#### ENG 12 English/Writing Methods 2.0 (developmental)

Required prerequisite(s): ENG 11/111 and ENG 108 or (2) ENG 111

### Corequisite(s): ENG 112

This course is to be taken concurrently with ENG 112 and helps facilitate the objectives of ENG 112. Special attention is given to individual student needs in the conventions of standard written prose, argumentation and research.

### **ENG 97** Fundamentals of Reading and Writing...... 4.0 Students will be placed in this course......(developmental) (4) as a result of COMPASS testing

Corequisite(s): ENG 107

This course will provide an overview to reading, writing and college readiness. The course will provide students with the basic skills required for college success, thereby empowering them to become more responsible and actively engaged in their own education. Student will learn and practice basic reading skills such as annotation, think-aloud, word attack, and main idea identification. Students will also be introduced to the writing process and learn a variety of methods such as free writing, invention, essay planning, drafting, and revision. In addition, they will learn strategies to assist them in successful college completion by learning the following skills: time management, goal setting, note taking, active learning, organization, and motivation.

# ENG 99 Introduction to College Reading/Writing 6.0 (developmental) (6)

Required prerequisite(s): Successful completion of ENG 97/ENG 107 with a 2.0 or better or placement based on COMPASS scores This is an integrated reading and writing course that gives students the literacy skills they need for college-level academic work. It builds on the reading and writing skills students already have and prepares them for college composition courses and reading-intensive courses. It also focuses on grammar, punctuation and sentence construction and variety. ENG 99 will cover a broad range of topics and explore a variety of readings and writings chosen to help students develop critical reading, writing and thinking skills.

#### 

This course is not a refresher but an intensive inspection of the sentence - as it gets used in academic writing. In the eight weeks, students will be invited to think strategically and deliberately about conventions they've either missed or acquired unconsciously. While developing/intensifying syntactical skill, they will also develop a sound and reasonable language about language. **Group 2 course.** 

#### 

Focus is on developing criteria, terminology and resources for evaluation and selection of good quality children's literature and on developing methods for sharing that literature with children. The course surveys both picture books and novels from a variety of genres and cultures, and also examines the impact of social change on children's literature. Humanities or English credit. **Group 1 course**.

#### 

*Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently* 

This course is designed to acquaint students with modern developments in the science and philosophy of language, and to improve their understanding of culture and language in general. It addresses issues of sound, word formation, syntax, semanties, language acquistion and more. **Group 2 course.** 

### 

Required prerequisite(s): ENG 111

This course introduces students to a variety of technical writing situations in business, industry, science, and education. It emphasizes audience awareness, research methods, problem solving, critical thinking, professional ethics, patterns of typical proposals, descriptions, and the requirements of formal reports used in professional writing. **Group 2 course.** 

#### 

Study and practice of the basic techniques of imaginative writing, focusing on short fiction but with considerable allowance for individual interests. The class emphasizes craft while giving room for creative talent to emerge in response to open-ended assignments. In this workshop seminar, students will exchange helpful commentary on each other's writing, as well as examine professional fiction to analyze how successful authors achieve their results. The class includes close work with the elements of creative narration: concrete language, story shape and pace, characterization, point of view and setting. Individual conferences will supplement class activities. **Group 2 course.**  Required prerequisite(s): ENG 221 or instructor permission More intense and advanced study and practice of techniques of imaginative prose writing than in ENG 221, which an emphasis on narrative fiction, but offering a wide range of options for individual creativity and interest. As an advanced creative writing course, 222 places emphasis upon more fully developed narrative manuscripts, moving beyond individual scenes and exercises with individual narrative techniques to complete stories and revisions of them. Workshop activities will require more sophisticated, directed exchanges among students. Final portfolios are expected to include at least one 'publishable' manuscript, showing revision stages and selfappraisal of that manuscript in particular and semester's work in general. At least one full class session is devoted to publication strategies. Group 2 course.

#### 

Weekly writing exercises, peer critique, and one on one mentoring with the instructor provide the foundation for this workshop whose goal is agile, well read poets who feel comfortable working in a variety of forms, as well as reading their own work out loud. Discussion of required readings, emphasis on revision, and experiments to aid the creative process can be expected during the session. **Group 2 course.** 

#### **ENG 228** Advanced Writing & Rhetoric.......4.0 (4) Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

This course examines persuasive language of everyday life and calls on students to reveal, analyze, and critique the subtle rhetorical elements in the texts and voices around them. The course examines how everyday texts or "artifacts" (such as news programs, advertisements, church bulletins, political slogans, college textbooks, course syllabi, and other official documents) persuade audiences to believe in a particular reality. Formal written analysis will rely on working knowledge of classical rhetoric (terms and concepts discussed early in the semester). **Group 2 course.** 

#### 

may be taken concurrently

An introduction to a variety of literary styles, themes, and forms such as fiction, drama and poetry. Intended to develop an understanding and enjoyment of reading as well as an understanding of current critical approaches to the study of literature. **Humanities or English credit. Group 1 course.** 

#### 2014 - 2015 NMC CATALOG

This course features a study of central and recurring patterns of human concern as revealed in the mythic content of various forms of literature. Examination of archetypal structures embedded in works of cultures ranging from ancient Babylonian to contemporary eras is central to course goals and outcomes. Areas to be investigated will include myths of the quest, of power, of origins, of love, and of art. **Humanities or English credit. Group 1 course.** 

### 

Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

This course features an examination of essays, novels, stories, and poems written primarily (but not exclusively) by 19th and 20th century European and American female authors. In addition, the course introduces students to relevant literary criticism and the historical, cultureal context in which writing by and about women has emerged. **Humanities or English credit. Group 1 course.** 

### 

*Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently* 

This is a general introductory survey course that will explore various Native American literary genres, including fiction, non-fiction, biography and critical essays. Students will be encouraged to develop a critical stance toward non-Native depiction of Native literature and to look beneath the "surface" for hidden socio-economic messages. Students will evaluate past and present expectations of Native American literature and develop an understanding of new more aggressive and increasingly pervasive forms of Native fiction and non-fiction. **Humanities or English credit. Group 1 course.** 

### 

may be taken concurrently

This course is an introduction to representative major dramatic works of Shakespeare and the Elizabethan Age, and includes lecture, film, and discussion. **Humanities or English credit. Group 1 course.** 

### 

Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

This course will examine the changing perceptions and definitions of wilderness and nature in Western literature and culture. The course will examine and discuss poetry, fiction, and nonfiction by authors, including Wordsworth, Thoreau, Muir, Leopold, Stegner, Jeffers, Silko, Oliver, Abbey, Snyder, and Williams. Students will explore the interaction between literature and environmental issues and activism, and also consider the impact of nature and wilderness on music, painting, photography, and film. **Group 1 course.**  This course features an intensive reading of works from British authors representing the entire span of this literary tradition and including works in various genres. It develops a sense of British literature evolution and a facility in careful literary criticism. **Humanities or English credit. Group 1 course.** 

### 

*may be taken concurrently* Students in this course study the American tradition, early and modern, in prose and poetry. Selections will emphasize the cultural and intellectual background giving rise to our national

cultural and intellectual background giving rise to our national literature, the major phases or movements in that literature, and how certain writers transcended those movements to create work of universal value. **Humanities or English credit. Group 1 course.** 

#### 

This course exposes students to a variety of readings drawn from Africa, Asia, Europe, Latin America, and/or Oceania. While the reading and writing assignments will certainly require close literary analysis, the class will also attempt to situate the works culturally, historically, and theoretically. **Humanities or English credit. Group 1 course.** 

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Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

The primary emphases of this course are reading and writing about detective fiction and the historical and cultural development of this genre of literature. Multi-media story formulas analyzed include avenger stories, private eye fiction, police procedurals, gentlemen thieves, psychic detectives, stories of magician detectives and spy fiction. **Humanities or English credit. Group 1 course.** 

### 

Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

The primary emphases of this course are reading and writing about Science Fiction and Fantasy stories as they are found in a range of cultural texts like print, motion pictures, radio drama, television, and more. Students will learn to identify and discuss mythologies and related symbols, genre and formula conventions such as icons, stereotypes, rituals, plots, motifs, settings, and more as they investigate the social history of these stories. **Humanities or English credit. Group 1 course.** 

### 

may be taken concurrently

The primary emphases of this course center on the critical reading of and writing about popular culture and its historical development in U.S. and world cultures. Topics to be addressed include myth and mythmaking, iconography, stereotypes, rituals, genres and formulas, the mass media and more. Humanities or English credit. Group 1 course.

### 

Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

This course offers students the opportunity to examine and critique a selection of films through discussion and writing by employing techniques similar to those used in literary analysis. Humanities or English credit. Group 1 course.

### ENG 271 Adolescence & Cultural Diversity ....... 3.0 (3)

Required prerequisite(s): ENG 112 or ENG 220, may be taken concurrently

This course provides a study of universal and diverse themes and ideas expressed through adolescent literature. It features protagonists and authors from a variety of cultures, both within and outside of the United States, and emphasizes the relationship between culture and the lives of young people. **Humanities or English credit. Group 1 course.** 

For more information on elective literature or writing courses and when they are offered, please contact the Communications Academic Office, (231) 995-1175.

## **ENV** Environmental Science

Designed for the student who does not intend to major in a physical science. Subject matter deals with features of the planet earth, astronomy, and weather. The laboratory portion includes a practical study of rocks and minerals as well as a study of topographic, geologic and weather maps. Field trips investigate landforms in the Grand Traverse area. **Group 1 lab course.** 

ENV 104	Life of the	Past	 4.0	(3)

Corequisite(s): ENV 104, ENV 104L

This course introduces students to the record of life on Earth. The roles of global change, origins, evolution, and extinction in life history are examined. Great Lakes and North American fossil records with Prepaleozoic micro-organisms and Paleozoic invertebrates and vertebrates are highlighted. Appearance, evolution, and disappearance of dinosaurs during the Mesozoic Era, human evolution, and the recent demise of the giant Ice Age mammals are analyzed in depth. Laboratory and class activities are included. **Group 1 lab course.** 

ENV 111	Physical Geology4.0	(3)
ENV 111L	Physical Geology Lab0.0	(2)
Required pr	erequisite(s): MTH 23 or COMPASS equivalent	
Corequisite(	(s): ENV 111, ENV 111L	

This course explores processes which transform planet Earth. Landforms, minerals, rocks, and geologic structures are examined in classroom, laboratory, and field studies which focus on these geologic processes and on the techniques of geology. Lab studies apply the methodology and techniques of geology by introduction of map reading, field and map study, study of surficial processes, and study of minerals and rocks. **Group 1 lab course.** 

ENV 112Historical Geology4.0 (3)ENV 112LHistorical Geology Lab0.0 (2)Recommended prerequisite(s): ENV 103 or ENV 111 or

*GEO 105, MTH 111 and placement into ENG 111 Corequisite(s): ENV 112, ENV 112L* 

Rocks and fossils of North America, the Great Lakes and the Grand Traverse region which reveal the physical, chemical, and biological evolution of the planet earth are explored in classroom, laboratory, and field studies (including a required 4-day field excursion to Elliot Lake, Ontario). Group 1 lab course.

#### ENV 117 Meteorology & Climatology......4.0 (3) ENV 117L Meteorology & Climatology Lab......0.0 (2)

Required prerequisite(s): MTH 23

Corequisite(s): ENV 117, ENV 117L

Recommended prerequisite(s): Students scoring below ENG 111 levels on the COMPASS placement test should plan on additional study time.

Designed to acquaint the student with the science and art of weather analysis, this course includes studies of the basic properties of gases, organization and composition of the atmosphere, basic energy flow, and general weather phenomena that result. Global climates are also investigated. The laboratory portion presents the function and effect of selected physical processes, and includes the use of weather instruments and weather maps. **Group 1 lab course.** 

# ENV 131Oceanography4.0 (3)ENV 131LOceanography Lab0.0 (2)

Required prerequisite(s): MTH 23 or COMPASS equivalent Recommended prerequisite(s): Students scoring below ENG 111 levels on the COMPASS placement test should plan on additional study time.

Corequisite(s): ENV 131, ENV 131L

This course explores the origins, structure, and evolution of ocean basins and their role in global climate dynamics. It shall include an investigation of the physical properties that govern waves, currents, tides, air-sea interactions as well as the physical and chemical properties of seawater. It also explores plant and animal life within the oceans including impacts of human activities on the marine environment. **Group 1 lab course.** 

#### 

Recommended prerequisite(s): MTH 111. Students scoring below ENG 111 levels on the placement test should plan on additional study time.

Corequisite(s): ENV 140, ENV 140L

This course is designed for the learner who wishes to gain an in-depth understanding of watersheds. It will focus on the physical and biological systems that are responsible for the quality and characteristics of a watershed. Human interactions, stewardship, management and impacts on our local water resources will also be explored. The laboratory portion of the course will place emphasis on field investigations and the analysis of data and water samples collected. Throughout the course basic scientific principles will be incorporated. **Group 1 lab course.** 

### 

*Recommended prerequisite(s): ENG 111, MTH 23 Corequisite(s): ENV 210, ENV 210L* 

This course will explain the fundamental principles of soil science emphasizing soil as a natural resource. The many interactions between the soil and other components of forest, range, agricultural, wetland and constructed ecosystems are highlighted. In addition to the physical properties; soil chemistry, water interactions, and biological process will be investigated. Soil taxonomy, management, and human interaction with soil will also be covered. The laboratory portion of the course focuses on mapping and identification of soils in the field and lab analysis of soil properties. **Group 1 lab course.** 

#### 

Environmental Science is an interdisciplinary course investigating scientific aspects of the outstanding environmental concerns: air, water, and earth alteration; industrial, agricultural and residential/commercial pollution; and ecological changes. Included are the basics of the chemical cycles and societal factors that complicate problem solving. Laboratory incorporates problem solving from data accumulated from field trips, lab activities, and research. **Group 1 lab course.** 

#### 

#### 

Required prerequisite(s): MTH 23 Recommended prerequisite(s): ENG 111, completion of any Science course with laboratory and instructor permission. This course is a one-week field course. It will focus on the fundamentals of map interpretation and generation. Students will gain a basic understanding of the principles of cartography and field mapping techniques employed by various disciplines in the acquisition of spatial data. **Group 1 course.** 

**ENV 270C Precambrian Geology of Michigan**......**2.0 (3)** *Recommended prerequisite(s): ENG 111, MTH 23, completion of any Science course with laboratory and instructor permission.* This course is a six-day field study of the Precambrian geology of the western Upper Peninsula of Michigan. The class will focus on rock and mineral identification, economic geology, and the geologic history of Michigan's UP. The relationships of ancient bedrock layers to recent surficial geologic processes and their associated landforms will also be explored. **Group 1 course.** 

Visit **www.nmc.edu/science-math** for detailed information.



### FRN World Language - French

#### FRN 101 Elementary French I..... 4.0 (4)

This course represents a comprehensive introduction to the French language for the true beginner. Students will develop the ability to communicate in French in everyday situations while acquiring some of the necessary skills for reading, writing, listening, an speaking. Cultural topics are integrated in each unit. **Group 2 course.** 

**FRN 102 Elementary French II**......**4.0 (4)** Required prerequisite(s): FRN 101 with a minimum grade of 2.0, required score on the NMC language placement test, or instructor permission

FRN 102 is a continuation of FRN 101 and focuses on the expansion of the communication skills of reading, writing, listening, and speaking. Cultural topics are integrated into each unit. **Group 2 course.** 

#### FRN 201 Intermediate French I ...... 4.0 (4)

Required prerequisite(s): FRN 102 with a minimum grade of 2.0, required score on the NMC language placement test, or instructor permission

FRN 201 is designed to further develop language proficiency in reading, writing, listening, and speaking. A deeper exploration of French culture is presented in this course, allowing students to transform themselves into truly active and proficient language users. **Group 1 course.** 

#### FRN 202 Intermediate French II ...... 4.0 (4)

Required prerequisite(s): FRN 201 with a minimum grade of 2.0, required score on the NMC language placement test, or instructor permission

FRN 202 is a continuation of FRN 201 and focuses on the application of the communication skills of reading, writing, listening, and speaking within cultural contexts. **Group 1 course.** 



# **GEO Geography**

GEO 101	Introduction to Geography3.0	(3)		
Recommended prerequisite(s): MTH 08				

Note: Students placing below ENG 111 levels on the placement test should plan on additional study time

This course emphasizes both the physical and the cultural aspects of geography. Physical factors such as weather, climate, soil, vegetation and landforms are considered as they determine the natural resources of a region. Various aspects of human culture such as religion, language and economic systems are studied to gain understanding of the ways in which people have used and misused their resources. **Group 1 course.** 

GEO 105	Physical	Geography3.0	(3)
<b>GEO 105L</b>	Physical	Geography Lab1.0	(2)
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Recommended prerequisite(s): MTH 23 Corequisite(s): GEO 105L

Note: Students placing below ENG 111 levels on the placement test should plan on additional study time

Physical geography studies, selected elements of the physical environment: weather and climate, landforms, soil and vegetation. Particular emphasis is placed upon the nature and distribution of physical features throughout Michigan with respect to humankind. The lab includes field trips and emphasizes the application of physical principles through hands-on study of minerals, rocks, and soils; in conjunction with map and aerial photo interpretation. The lab emphasizes the application of selected physical elements through means of field work, map and aerial photo interpretation. **Group 1 course.** 

**GEO 109 World Regional Geography**......**3.0 (3)** This course is a study of world regions. For each region we will consider the relationship between the natural environment, cultural background, economic conditions, and local problems that relate to world issues. **Group 1 course.** 

#### 

This course explores the fundamentals of Geographic Information Systems (GIS) for map reading, interpretation and analysis, in conjunction with the principles of cartography. Computer and Internet technologies are utilized for the generation, manipulation, storage and retrieval of maps and associated geographic attributes. Topics covered include: basic GIS concepts, display of data and attributes, queries, metadata, tabular relationships, data editing, projections and datums, and basic cartography. **Group 1 course.** 

### **HAH Allied Health**

The following courses are appropriate for students in preprofessional medical studies in many health careers, and for those health professionals who wish professional continuing education course work. The content of these courses provides a broad background and can be a useful tool in the medical field. Students who wish credits from these courses transferred to other college or university health programs should consult with a NMC counselor to facilitate the process. Admission to a NMC Health Occupations program is not required to enroll in most of these elective courses.

#### HAH 100C Informatics Essentials ......1.0 (1)

#### Recommended prerequisite(s): HNR 102, may be taken concurrently

This course will introduce students to informatics in health care and, in particular, nursing. Students will enhance their ability to use modern informatics such as computer and Internet resources as well as Electronic Medical Record (EMR) software, in the health care environment. This course is offered in a hybrid online and face-to-face format. **Group 2 course.** 

#### HAH 200 Emergency Assessment & Intervention...3.0 (4)

A comprehensive study of the concepts and practices of first aid techniques. The course provides training for emergency care through assessment, critical thinking, implementation, documentation, and evaluation. It also addresses situations when injury or sudden illness becomes a threat to life, or problems develop that endanger physical or psychological well-being. Certification for CPR for the Professional Rescuer, HAZMAT, and Medical First Responder may be earned in cooperation with state and/or national agencies. Must be able to meet patient lifting and equipment requirements. Required for MCOLES Police Academy. Signature required to register. **Group 2 course.** 

# HDA Dental Assistant

#### 

Students learn the preparation, manipulation, and use of dental materials commonly found in the dental office. There will be discussion regarding the equipment needed, mixing techniques, and proper usage of waxes, restorative materials, impression materials, gypsum products, cements, metals and therapeutic materials. Preparation of each material will be demonstrated. **Group 2 course.** 

#### HDA 113 Dental Materials Lab......1.0 (2) Corequisite(s): HDA 112

This course familiarizes the student with the handling of dental materials commonly used in the dental office. Opportunities are provided in the laboratory to develop skills in mixing techniques, impression taking, construction of study models, bleaching, and acrylic trays. **Group 2 course.** 

#### 

The purpose of this course is to familiarize the student with disease processes related to the oral cavity and to enable the student to identify these diseases. The student will become familiar with various drugs and their uses in dentistry, prescription writing and documentation, the sources of drugs, routes of administration, and the conditions that modify the reactions of drugs. **Group 2 course.** 

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**HDA 150 Dental Office Management**......**2.0 (2)** Students are acquainted with the procedures necessary for efficient dental office management. Topics include appointment book control, accounts receivable and payable, dental record keeping, third party payment, patient recall, inventory control, telephone techniques, and use of computer hardware and software unique to the dental office. This course is offered in a self-paced format. **Group 2 course.** 

**HDA 160 Dental Emergencies**.....**1.0 (1)** This course acquaints the student with the types of emergencies that may arise in the dental office. The students will learn the procedures to follow when medical and dental emergencies occur, the importance and significance of obtaining accurate and complete patient histories, the proper emergency equipment necessary in a dental office and the maintenance of that equipment, the taking and recording of vital signs, basic first aid rules, and fire safety. **Group 2 course.** 

This course provides the foundation for dental assistant clinical procedures performed in both general and specialty dental offices. Topics include theory and application of four-handed dentistry; application of infection control procedures; an overview of procedures and techniques unique to dental specialties; and background information and technical skills performed by the Registered Dental Assistant. In addition, local dental specialists serve as guest speakers. **Group 2 course.** 

### HDA 241 Chairside Procedures Lab......2.0 (5)

Corequisite(s): HDA 240

This is the clinical component of Chairside Procedures. Students learn and practice operative and specialty chairside techniques in a fully-equipped dental clinic. Students assist our staff dentist during simulated dental procedures. Expanded duties for dental assistants are also introduced in this course. **Group 2 course.** 

#### HDA 242 Dental Radiography ...... 2.0 (2)

Recommended prerequisite(s): HAH 120, HDA 120, HDA 160; all may be taken concurrently Corequisite(s): HDA 243

The fundamentals of radiology as applied to dentistry will be presented. Special consideration will be given to radiation physics, hazards, biological effects, protection and quality control methods. Basic interpretation and radiographic anatomy will also be included. While extraoral techniques are discussed, emphasis will be given to the proper techniques for exposing, processing, and mounting traditional and digital intraoral radiographs of diagnostic quality. **Group 2 course.** 

### HDA 243 Dental Radiography Lab......1.5 (3)

Corequisite(s): HDA 242

Clinical component of Dental Radiography. Students will be introduced to a variety of radiography techniques and will learn how to expose, process and mount radiographs of diagnostic quality. Requirements include three sets on dental manikins and four sets on dental patients. **Group 2 course.** 

### HDA 251 Dental Assistant Internship I......4.0 (4)

*Recommended prerequisite(s): HDA 240, HDA 241* Students are assigned to dental offices in the community. 180 hours of hands-on experience includes chairside assisting; office management; laboratory techniques and expanded functions. Included is a one-hour, bi-weekly seminar session. May take any semester with instructor permission. **Group 2 course.** 

### HDA 252 Dental Assistant Internship II......4.0 (4)

Recommended prerequisite(s): HDA 251

A continuation of Internship I providing an additional 180 hours of hands-on experience. In addition to placement in a general dental practice, students observe four specialty settings: oral surgery, orthodontics, periodontics, and endodontics. May take any semester with instructor permission. Included is a one hour, bi-weekly seminar session. **Group 2 course.** 

**HDA 282 CDA/RDA Written Exam Prep** ......**2.0 (2)** *Recommended prerequisite(s): HAH 120, HDA 101, HDA 112, HDA 113, HDA 120, HDA 140, HDA 150, HDA 160, HDA 170, HDA 240, HDA 241, HDA 242, HDA 243, all may be taken concurrently* 

The purpose of this course is to prepare students and working dental assistants for the CDA and RDA written exams. Included are review sessions covering General Chairside, Infection Control, and Radiography for both exams and additional specific topics that relate directly to Michigan's expanded functions for dental assistants. **Group 2 course.** 

#### HDA 286 RDA Clinical Exam Prep ...... 1.0 (1) Required prerequisite(s): HDA 282

This course will provide dental assisting students with study/ application sessions for the clinical portion of the state licensure exam. Expanded functions of special interest are dental amalgams, temporary crowns, and dental dams. Must be a current dental assisting student or a graduate of a postsecondary dental assisting program approved by the State Board of Dentistry. **Group 2 course.** 

## HF Health and Fitness

**HF 101 Fitness Circuit I** ......**0.5 (1)** Introduction to beginning aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction includes an orientation session, aerobic fitness, strength training, flexibility, and endurance. This self-directed course meets in the NMC Fitness Center using strength training equipment, exercise bicycles, and other aerobic equipment. Two hours per week on a flexible schedule. *Offered summers only.* **Group 2 course.** 

#### 

Continuing beginning aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction includes aerobic fitness, strength training, flexibility, and endurance. This self-directed course meets in the NMC Fitness Center using strength training equipment, exercise bicycles, and other aerobic equipment. Two hours per week on a flexible schedule. *Offered summers only.* Group 2 course.

#### 

Recommended prerequisite(s): HF 111

This course is designed to provide theoretical knowledge and practical skills in preparation for a national certification exam in personal training. Topics include guidelines for instructing safe, effective, and purposeful exercise, essentials of the client-trainer relationship, conducting health and fitness assessments, and designing and implementing appropriate exercise programming. **Group 2 course.** 

HF 111 Fitness Circuit I ...... 1.0 (2)

Introduction to aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction includes an orientation session, strength training, flexibility, and endurance with an emphasis on aerobic conditioning. This self-directed course meets in the NMC Fitness Center using strength training equipment, exercise bicycles, and other aerobic equipment. Two hours per week on a flexible schedule. **Group 2 course**.

#### 

Continuation of aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction emphasizes individual strength training and flexibility. This self-directed course meets in the NMC Fitness Center using strength training equipment, exercise bicycles, and other aerobic equipment. Two hours per week on a flexible schedule. **Group 2 course.** 

#### 

Continuation of aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction emphasizes individual aerobic fitness options and the reduction of stress. This self-directed course meets in the NMC Fitness Center utilizing strength training equipment, exercise bicycles, and other aerobic equipment. Two hours per week on a flexible schedule. **Group 2 course.** 

**HF 114 Fitness Circuit IV**.....**1.0 (2)** *Recommended prerequisite(s): HF 113* 

Continuation of aerobic conditioning through a fitness circuit designed for varying fitness levels. Instruction emphasizes individual fitness evaluation/workout, weight control, and nutrition. This self-directed course meets in the NMC Fitness Center using strength training and aerobic equipment, and exercise bicycles. Two hours per week on a flexible schedule. **Group 2 course.** 

**HF 116** Yoga.....**1.0 (2)** Yoga is postural work emphasizing precise, careful body alignment and maximum spinal extension. Yoga works through the concreteness of the body to teach balance and integration. It is an effective way to stretch and strengthen the body. Using movement and breath, yoga brings a therapeutic calm to the body and mind, releasing stress and bringing relaxation. **Group 2 course.** 

**HF 118 Continuing Yoga**.....**1.0 (2)** *Recommended prerequisite(s): HF 116 or instructor permission* Yoga techniques focus on understanding and controlling the body, the breath, and the mind through exercises (asanas), breathing techniques (pranayamas), and meditation training (quieting the mind and body). Yoga poses are designed to develop strength and give maximum flexibility to the muscular, skeletal, and nervous systems with special emphasis on building a strong, supple spine. Benefits include improved circulation, hormonal balance, poise, and a more stable emotional nature. Learning proper breathing will help you cope with stress and increase your energy level. Wear loose, comfortable, layered clothing and plan to work barefooted. Bring two blankets, a mat, and bath towel. **Group 2 course.** 

**HF 118A Bikram Yoga I**.....**1.0 (2)** *Recommended prerequisite(s): Good heart health, not pregnant* This is the original hot yoga, 105 degrees, pure, powerful, authentic, unchanged, taught exactly as Hatha Yoga Master Bikram Choudhury intends it to be taught. 26 poses, two breathing exercises, 90 minutes, plus heat. Meets three times per week on a flexible schedule. **Group 2 course.** 

### HF 118B Bikram Yoga II ...... 1.0 (2)

Required prerequisite(s): HF 118A

*Recommended prerequisite(s): Good heart health, not pregnant* A continuation of the original Hot Yoga, 105 degrees, pure, powerful, authentic, unchanged, taught exactly as Hatha Yoga Master Bikram Choudhury intends it to be taught. 26 poses, two breathing exercises, 90 minutes, plus heat. Meets three times per week on a flexible schedule. **Group 2 course.** 

**HF 122 Step Aerobics I**.....**1.0 (2)** This body sculpting and fat burning program provides a unique blend of exercise, bench and resistance training by combining Vertifirm (hips & thighs), hand held weights (upper body) and low impact, high-energy step routines. **Group 2 course.**  HF 123 Step Aerobics ...... 0.5 (1)

This body sculpting and fat burning program provides a unique blend of exercise, bench and resistance training by combining Vertifirm (hips & thighs), hand held weights (upper body) and low impact, high-energy step routines. *Offered summers only.* **Group 2 course.** 

HF 124 Aerobic Dance......0.5 (1)

Through choreographed dance movements and contemporary music, cardiovascular endurance, flexibility, strength and coordination is promoted. *Offered summers only.* **Group 2 course.** 

This self-directed course meets twice per week on a flexible schedule. Use of basic strokes for fitness is reviewed. Emphasis is on aerobic and muscular endurance through swimming a variety of laps. **Group 2 course.** 

This self-directed course meets twice per week on a flexible schedule. A continuation of the Lap Swim program. Emphasis is on increasing aerobic and muscular endurance through swimming a variety of laps. **Group 2 course.** 

A continuation of the Aerobic Dance fitness program. Through choreographed dance movements and contemporary music cardiovascular endurance, flexibility, strength, and coordination is promoted. **Group 2 course.** 

Recommended prerequisite(s): HF 122

A continuation of the Step Aerobics fitness program. This body sculpting and fat burning program provides a unique blend of exercise, bench and resistance training by combining Vertifirm (hips & thighs), hand held weights (upper body) and low impact, high-energy step routines. **Group 2 course.** 

**HF 133 Pilates**.....**1.0 (2)** The Pilates method of body conditioning is a unique system of stretching and strengthening exercises used to develop long, lean bodies. This program uses floor exercises to strengthen and tone muscles, flatten abdominals, improve posture, flexibility, balance, agility, and coordination. **Group 2 course.** 

#### **HF 143 Continuing Pilates**.....**1.0 (2)** *Recommended prerequisite(s): HF 133*

Building on the fundamentals and exercises of the prerequisite class Pilates, a continuation of mat exercises and equipment will be added. The body will be challenged with moves that call for more strength, coordination, balance, flexibility, and control. **Group 2 course.** 

### **HNR Nursing**

Completion all HNR courses require admission to the PN, ADN, or LPN to ADN Nursing Program with the exception of HNR 100.

#### 

Presents the history of nursing & nursing education. Introduces professional nursing values and the attitudes and behaviors desired in nurses. Discusses nursing roles, career opportunities, and types of health care delivery settings. Introduces the student to legal and ethical issues related to the role and scope of practice of the licensed practical nurse and the registered nurse. Introduces basic concepts related to professionalism, patient-centered care, health, spirituality, culture, holism, and the impact of illness on the individual and his/her significant others. Covers beginning professional communication skills, collaboration, teamwork, and basic teaching/learning principles. **Group 2 course.** 

#### HNR 101 Fundamentals of Nursing-Lecture ...... 4.0 (4)

Required prerequisite(s): BIO 228 w/grade of 2.5 or higher, HNR 100, both may be take concurrently Corequisite(s): HNR 102

The students learn the foundation for professional nursing practice. Emphasis is placed on the principles and skills needed to apply the clinical judgment required for safe patient centered care. Communication is emphasized as an essentials aspect of the professional role. **Group 2 course.** 

#### HNR 102 Fundamentals of Nursing-Clinical......4.0 (12)

Required prerequisite(s): BIO 228 w/grade of 2.5 or higher, may be taken concurrently

Corequisite(s): HAH 100C, HNR 101

Through laboratory and/or clinical experience students learn about the professional identity of the nurse while acquiring and applying basic nursing knowledge, judgment, and skills in order to provide safe patient-centered care. The student also learns communication and collaboration skills. **Group 2 course.** 

#### 

Students learn an overview of pharmacology with emphasis on clinical applications within the context of the nursing process. This course is organized by medication classification. It explores indications, modes of action, side effects, contraindications and interactions for the safe administration of selected drugs. Specific nursing judgment and collaborative responsibilities to drug administration are emphasized. Legal statutes and standards regulating drug administration within the scope of nursing professional identity are presented. Individualized patient variables across the lifespan will also be a focus of study. **Group 2 course.** 

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Presentation of nursing management of health care issues related to uncomplicated pregnancy, birth, and neonatal period. Introduction of nursing management of common health alterations found in both chronically and acutely ill clients across the lifespan. Emphasis will be made on utilizing evidence-based practice to identify appropriate nursing interventions to achieve the desired outcome for the client based on their developmental level across the lifespan. **Group 2 course**.

#### 

Clinical experiences providing opportunities to apply principles studied in HNR 125. Clinical learning environments will include the opportunity to apply medical-surgical, pediatric, and obstetric nursing interventions in a variety of settings, including acute care and simulation experiences. **Group 2 course.** 

#### HNR 145 Practical Nursing Roles & Issues ....... 1.0 (1)

Required prerequisite(s): HNR 125, HNR 126, both may be taken concurrently

Reviews ethical/legal responsibilities of the LPN. Presents issues and trends related to LPN practice, nursing organizations, continuing education; and licensure. Discusses occupational opportunities and provides information on employment search, job-seeking skills and transition issues. **Group 2 course.** 

#### 

Required prerequisite(s): HNR 247, HNR 248,

may be taken concurrently

#### Corequisite(s): HNR 242

This course will expose the student to the complex problems facing families coping with complications during the child-bearing/child-rearing process. Characteristics of the atrisk family will be explored. These concepts will be applied to a review of complications occurring during the prenatal, intrapartal, and postpartal periods. The course will then deal with complex health problems during childhood and will include a discussion on perinatal loss and childhood death. A major theme throughout the course will be the use of the nursing process to promote optimal functioning for at-risk families. Community resources will be explored. Previous content on growth and development and cultural considerations will be reviewed briefly and concepts applied through class discussions and case scenarios. **Group 2 course.** 

#### HNR 242 Adv. Maternal Child Nursing-Clinical ... 2.0 (6)

Required prerequisite(s): HNR 247, HNR 248, may be taken concurrently

Corequisite(s): HNR 241

This course provides for the clinical application of the principles presented in the co requisite: HNR 241. Students will spend clinical time on a maternity inpatient unit. A clinical instructor will guide and support the student through observational experiences in labor and delivery and all students will have the opportunity to do postpartum and newborn assessments and care. Students will also spend clinical time in a precepted pediatric clinical caring for pediatric patients. Clinical time will also be spent doing an assessment on a family, assessing growth and development and community resources. Students will also be involved in clinical simulations and case studies. Students will participate in the above experiences by observing and/or directly providing care to at-risk families coping with childbearing and/or childrearing stressors/issues. Risk factors for these families may include developmental and psychosocial factors as well as physical alterations or complications. **Group 2 course.** 

### HNR 247 Nursing Mangement of Complex

Recommended prerequisite(s): Admission to the Nursing program, GPA of 2.0 on all prerequisite nursing courses Corequisite(s): HNR 248

Presentation of nursing interventions and management concepts required for adult patients with complex medical and/or surgical disorders. Emphasizes advanced assessment, analysis, nursing judgment, and nursing accountability. The focus is on adult patients with multiple complex requirements. Geriatric considerations are presented and integrated throughout. **Group 2 course.** 

#### 

Required prerequisite(s): BIO 240, HAH 100C, HNR 125, HNR 126, or admission to the Nursing program and successful completion of prerequisite nursing courses with 2.0 or better Recommended prerequisite(s): Admission to the Nursing program, GPA of 2.0 on all prerequisite nursing courses Corequisite(s): HNR 247

Clinical experience providing opportunities to apply principles presented in HNR 247. Emphasis is upon refinement of organization, decision-making, critical thinking, and prioritysetting skills in the care of multiple clients with complex medical/surgical disorders. **Group 2 course.** 

#### 

This course is designed to enable the student to better understand behavior exhibited by persons with mental disorders. Classifications, causes, and symptoms of mental diseases are presented and treatments such as individual, group, and activity therapies are explored. Emphasis is placed on the ways by which the nurse determines, develops, implements, and evaluates a therapeutic environment for the client. The implementing of theories of human behavior is the scientific aspect of mental health-psychiatric nursing; the purposeful use of the self in the performance of care is the artful aspect. The goal is preventative and corrective impact upon mental illness and the restoration of optimal mental health. **Group 2 course.** 

#### HNR 252 Mental Health Nursing-Clinical......1.0 (3)

Required prerequisite(s): HNR 241, HNR 242 Corequisite(s): HNR 251

Clinical experience providing opportunities to apply principles presented in HNR251. A variety of clinical settings addressing mental health issues in acute care, long-term care, and in community agencies are utilized. Emphasis is placed upon the exercise of critical thinking in addressing mental health issues and concerns. Additionally, students identify and analyze community resources of importance to persons with mental health issues. Students participate in care in the clinical area approximately 12 hours per week for 3.5 weeks during the semester. **Group 2 course.** 

#### 

Required prerequisite(s): HNR 251, HNR 252, may be taken concurrently

### Corequisite(s): HNR 262

This course builds upon the context of HNR 247 with the presentation of nursing management of adult patients with complex endocrine, hepatic, and autoimmune disorders. Additionally, the course introduces principles of leadership and management as these relate to the delivery of nursing care to a group of patients. The principles of delegation, communication, and priority-setting are reviewed. The course discusses a variety of nursing management challenges related to team building, managing change, conflict resolution, power and authority, politics and political action, current economic aspects of health care, legal/ethical issues, and emergency preparedness. Career opportunities, job-seeking skills, NCLEX-RN preparation, and issues related to role transition are discussed in reference to the graduates' move into the work force. The quality improvement process and evidence-based practice are considered as students research and deliver a group presentation related to a current issue or trend in nursing management. Group 2 course.

#### HNR 262 Complex Patient Mgmt II - Clinical ...... 4.0 (12)

Required prerequisite(s): HNR 251, HNR 252, may be taken concurrently

### Corequisite(s): HNR 261

Clinical experience providing opportunities to apply principles presented in HNR 261. A variety of clinical units in acute care and extended care settings are utilized. Emphasis is placed upon organizational skills, including time management, and the exercise of critical judgment in managing the care for a normal caseload of clients. The process of critical thinking is the nucleus necessary to achieve the course objectives. Students perform care in the clinical area 24 hours per week for 7.5 weeks during the semester. The course is designed to promote a successful role transition from student to entrylevel professional nurse. **Group 2 course.** 



### HPD Professional Development

#### HPD 110 Basic Life Support for Health......0.5 (.5) Care Providers

Provides basic life support training and certification for nursing students interested in becoming health care providers to provide them with life support skills needed for clinical practice. **Group 2 course.** 

#### HPD 120 Basic Life Support for Professional ....0.2 (.2) Providers: Recertification

Required prerequisite(s): Current American Heart Association or American Red Cross Life Support for Professional Provider certification Provides recertification in Basic Life Support for Professional Provider for students interested in becoming health care providers who can show previous certification through the American Red Cross or American Heart Association. **Group 2 course.** 

# **HST** History

HST 101 Western Civilization to 1500......4.0 (4) Recommended prerequisite(s): Placement into ENG 111 This is the first course in a year-long study of western civilizations from the birth of civilization to the Age of Nation States in the 19th century. The main instructional goal is to have students demonstrate an understanding of the diverse societies and culture of the western world. It's important that students recognize that western civilization includes many diverse cultures and has interacted with many other diverse cultures throughout its development. In addition, students will analyze the distinctive characteristics of western civilizations, identify the achievements and limitations of western civilizations, and develop an awareness of how contemporary problems were caused by past forces. As students achieve these goals, they will develop skills in communication and critical thinking. This course covers the period from the birth of civilization to the early Middle Ages. Group 1 course.

HST 102 Western Civilization from 1500 ...... 4.0 (4) Recommended prerequisite(s): Placement into ENG 111 This is the second course in a year-long study of western civilizations from the birth of civilization to the Age of Nation States in the 19th century. The main instructional goal is to have students demonstrate an understanding of the diverse societies and culture of the western world. It's important that students recognize that western civilization includes many diverse cultures and has interacted with many other diverse cultures throughout its development. In addition, students will analyze the distinctive characteristics of western civilizations, identify the achievements and limitations of western civilizations, and develop an awareness of how contemporary problems were caused by past forces. As students achieve these goals, they will develop skills in communication and critical thinking. This course covers the period from the Late Middle Ages to the Age of Nation States in the 19th century. Group 1 course.

HST 111 U.S. History to 1865 ...... 4.0 (4) Recommended prerequisite(s): Placement into ENG 111 This is the first course in a year-long study of U.S. History from Native American origins to the modern world. A main instructional goal is to have students demonstrate an understanding of how diverse societies and cultures have contributed to the development of the United States. In addition, students will analyze the distinctive characteristics of the development of the United States, identify the achievements and limitations of these developments, and develop an awareness of how contemporary problems were caused by past forces. Students will learn how American society developed from Native American origins through Reconstruction, and how society has impacted both individuals and groups in America. As students achieve this goal, they will develop skills in communications and critical thinking. Group 1 course.

HST 112 U.S. History Since 1865 ...... 4.0 (4)

*Recommended prerequisite(s): Placement into ENG 111* This is the second course in a year-long study of U.S. History from Native American origins to the modern world. A main instructional goal is to have students demonstrate an understanding of how diverse societies and cultures have contributed to the development of the United States. In addition, students will analyze the distinctive characteristics of the development of the US, identify the achievements and limitations of these developments, and develop an awareness of how contemporary problems were caused by past forces. As students achieve these goals, they will develop skills in communication and critical thinking. Students will learn how American society developed from Reconstruction to the post-Vietnam era, and how society has impacted individuals and groups. **Group 1 course.** 

 ican origins to the Modern Era. Major emphasis is placed upon the social, political and economic role of American women in American society and their unique role as a part of that society. Students will also demonstrate an awareness of how contemporary problems were caused by past forces. Students will develop skills in analysis, critical thinking, historical reasoning and writing. **Group 1 course.** 

**HST 235 20th Century Europe**.....**3.0 (3)** *Recommended prerequisite(s): Placement into ENG 111* This course is a study of the history of Europe in the 20th century with emphasis on Germany, England, France, and Russia. The instructional goal is to have students demonstrate through discussions and essays the distinctive characteristics of European civilizations, the common characteristics of European civilizations, the identification of achievements and limitations of European civilizations, and how Europe has affected America and America affected Europe. Students will demonstrate an awareness of how contemporary problems were caused by past forces. Students will develop skills in analysis, critical thinking, historical reasoning and writing. **Group 1 course.** 

# **HUM Humanities**

### HVA Heating, Ventilation, Air Conditioning

**HVA 101** Introduction to **HVAC/R**......**3.0 (4)** This course covers safety concerns associated with the HVAC field, identification and use of trade tools and basic blueprint reading. Students are introduced to different types of pipe and tubing used for equipment and will learn threading and soldering techniques. A strong emphasis is placed on electrical theory and application as well as learning how to read electrical diagrams. **Group 2 course.** 

### 

Required prerequisite(s): HVA 101

This course focuses on the variety of heating systems in the HVAC career field. Students are introduced to the principles of combustion and the importance of combustion analysis. Gas furnaces, heating controls, oil fired equipment, humid-ification and electric heating systems are also explored. **Group 2 course.** 

#### **HVA 122 Basic Refrigeration Fundamentals.......3.0 (4)** *Required prerequisite(s): HVA 101*

This course introduces students to the relationship between matter and energy as it relates to refrigeration process and discusses the Laws of Thermodynamics and effects of pressures and vacuums on a system. A thorough coverage of the basic refrigeration cycle is discussed along with types of refrigerants and system components they will encounter. Students will also learn basic servicing and testing techniques on refrigeration systems. **Group 2 course.** 

#### **HVA 126** Residential and Commercial A/C ......... 3.0 (4) *Required prerequisite(s): HVA 106, HVA 122*

This course focuses on different types of air conditioning systems, ventilation and de-humidification equipment used in residential and light commercial applications. Students will learn about air source and geothermal heat pumps, mechanical and electrical troubleshooting techniques for air conditioning systems and explore indoor air quality and planned maintenance issues for all types of equipment. **Group 2 course.** 

#### **HVA 132** Commercial A/C and Refrigeration ...... **3.0 (4)** *Required prerequisite(s): HVA 126*

This course focuses on larger commercial systems encountered in the HVAC field for air conditioning and refrigeration applications. Emphasis is placed on chilled water and hydronic heating systems, boilers, air handling equipment and cooling towers. Students will also learn about larger scale refrigeration systems used in supermarket and cold storage applications, ice machine operation, and discussion of control systems used throughout the field. **Group 2 course.** 

### 

Required prerequisite(s): HVA 132

This course examines the impact of refrigerants on the environment and focuses on federal regulations regarding the use, recovery and disposal methods. Students are given the opportunity to earn their Type I, Type II or Universal Certification through this course. Upon successful completion of each test, the student will earn levels of certification recognized by the HVAC/R industry nationwide. **Group 2 course.** 



# LWE Law Enforcement

Students must meet with Police Academy Director prior to enrolling in all LWE courses.

**LWE 102 Police Operations**......**4.0 (4)** The student is introduced to educational and training requirements for employment in law enforcement, police community relations, the functions and objectives of a police department and the police response and responsibilities to the community. **Group 2 course.** 

**LWE 212 Criminal Investigation**.....**3.0 (3)** Students will be introduced to criminal investigation procedures including theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence, methods used in police science laboratory, fingerprints, ballistics, documents, serology, photography, and related forensic sciences. **Group 2 course.** 

**LWE 218 Physical Training/Wellness**......**4.0 (5)** This course is designed to give the students a complete understanding of wellness/physical fitness. The goal of the class is to develop a mentality that fitness is long term. Includes course

lectures on the following topics: fitness and wellness, benefits and guidelines for exercise, coronary risk factors, stress management, nutrition, weight control, low back care, motivation and behavior change, and various ways to perform fitness tasks. This class also includes workouts, and testing students against Cooper Standards. **Group 2 course.** 

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physical condition.

Students learn subject control with new mandatory guidelines from MCOLES. Students will understand survival mindset, tactical communication, fear/anger management, and post force incident responsibilities. Student will demonstrate proficiency in 13 defensive tactics outcomes. **Group 2 course.** 

#### 

Criminal Procedures will study the administration of criminal justice, the nature and scope of police power, the concept of exclusion, laws of arrest, search and seizure and interrogation, the acquisition of evidence, and judicial protection of the accused. **Group 2 course.** 

**LWE 228 Speed Measurement/PBT**......**3.0 (3)** This course will teach the legal and practical aspects of speed measurement and PBT (preliminary breath tester) operations. Class discussions will primarily be based on relationship between excessive speed, drinking and highway crashes. The course will also explore departmental policies and procedures concerning speed measurement and PBT use. Students will understand and demonstrate basic accident investigation and related accident evidence collection. **Group 2 course.** 



# **MDK Maritime Deck**

#### MDK 100 Survival at Sea ...... 1.0 (2)

This course of instruction covers the following: concentrated instruction and training for the U.S. Coast Guard certification as LIFEBOATMAN; including the fundamentals of seamanship, small boat handling with power and sail; construction equipment, and marking of the standard lifeboat; construction, equipment, and operation of inflatable life rafts; abandon ship procedures, man overboard procedures, and survival swimming; the launching and retrieval of lifeboats; sailboat nomenclature and operation. STCW.

**MDK 104 Rigging & Ship Maintenance Lab** ....... **1.0 (2)** The purpose of this course is to provide the cadet an opportunity to acquire practical experience in general seamanship: including marlinespike seamanship, line handling; splicing line, splicing wire rope; rigging, block and tackle nomenclature and use; vessel maintenance, the practical application of the procedures and equipment used in vessel upkeep.

# 

Required prerequisite(s): MDK 100

The purpose of this course is to provide an opportunity for the cadet to acquire practical experience in shiphandling with vessels sufficiently large to duplicate shiphandling problems encountered with much larger vessels. Topics covered include the general principles of ship control for both single and twin propeller vessels. Cadets are exercised in line handling, towing, anchoring techniques, landing techniques, and shipboard safety. Cadets will then advance through the use of simulation to shiphandling exercises dealing with the general principles of vessel control and the problems of handling a vessel in narrow channels. STCW.

### MDK 112 Rules of the Nautical Road ......2.0 (2)

Required prerequisite(s): MDK 100

Comprehensive study of the international rules of the road-COLREGS-including their origin, purpose, history, technical provisions, and application. Included is a comparative study of both international and inland rules, their interpretation and practical application as well as a study of case histories and legal interpretations resulting from collisions at sea. STCW.

### 

Required prerequisite(s): MTH 121 Corequisite(s): MDK 122

An introduction to principles of piloting and marine navigation. Includes chart projection, the magnetic compass, chart usage, buoyage systems, aids to navigation, fixes, running fixes, and the use of standard tables. STCW.

### MDK 122 Navigation I Lab ...... 1.0 (2)

*Required prerequisite(s): MTH 121 Corequisite(s): MDK 121* This lab is taken concurrently with MDK 121 and concentrates

on applying the principles of piloting to plotting on the chart. Chart projection and use will be introduced. Dead reckoning, terrestrial fixes, set and drift, lines of position, and the use of navigational instruments will be covered. STCW.

#### 

This course is designed to give the cadet a comprehensive knowledge of shipboard safety with particular emphasis on fire fighting and damage control. Subject areas include: personal safety, pollution, U.S. Coast Guard rules and regulations, temporary damage repair, shoring principles, and practical shoring problems. STCW.

**MDK 200** Ship Business & Labor Relations .......3.0 (3) This course provides instruction in the organization, administrative functions, and management of a merchant vessel as well as the systems of operation of ship's business. It includes the study of union contracts, grievance procedures and labor management relations.

### MDK 206 Watchstanding II ..... 1.0 (2)

Required prerequisite(s): MDK 210

The purpose of this course is to begin to develop a cadet's piloting and watch management skills. The use of the Shiphandling Simulator/Academy Vessels will allow the development of the Bridge Team Concept through piloting exercises.

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with a 2.0 or higher in all required courses During this course the cadet is on board a Great Lakes commercial vessel, an ocean vessel or the Academy training ship. The cadet follows a prescribed course of study of vessel operations, safety and navigation equipment and techniques. In addition, the cadet spends a minimum of eight hours per day under supervision of licensed officers gaining experience in various duties and responsibilities.

**MDK 221 Lakes Piloting**......**2.0 (2)** *Required prerequisite(s): MDK 121, MDK 210* Study of the Great Lakes and principal ports; this includes currents, depths, aids to navigation, prevailing winds and their effects, recommended courses, shoals, reefs and high traffic areas. Historic analysis will explain current practices.

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MDK 250 Stability for the Engineer......1.0 (1)

Required prerequisite(s): MATH 122 (FSU), MNG 100, MNG 104, MNG 106, MTH 121

Principles, terms and procedures used in the determination of transverse, longitudinal, and damage stability of ships. Investigation of the physical laws affecting a floating body. Effects of cargo operation, free surface, fuel consumption, and flooding on vessel stability. Scrutiny of case studies involving both partial or total loss of stability.

#### MDK 311 Sea Project Deck ......6.0 (6)

*Required prerequisite(s): Completion of second academic year with a 2.0 or higher in all required courses.* 

This course is a continuation of MDK 210 and is designed to provide the cadet with advanced knowledge and sailing time to meet the licensing requirements prescribed by the U.S. Coast Guard and the criteria established by the Maritime Administration. STCW.

#### MDK 312 Sea Project Deck ......6.0 (6)

Required prerequisite(s): MDK 311

This course is a continuation of MDK 311 and is designed to further enhance the cadet's professional knowledge and sailing time to meet licensing requirements of the U.S. Coast Guard and the criteria established by the Maritime Administration. STCW.

#### 

Recommended competencies: ENG 111, MTH 111

An introduction to nautical astronomy concerned with the practical application of celestial navigation, the solving of the spherical triangle, star identification, measurement of time and us of instruments. This course will cover plane, mid-latitude, and Mercator sailings and how to apply them to navigational problems through the various time zones. Sunrise, sunset, twilight, moonrise, and moonset calculations for a moving vessel will be covered. STCW.

**MDK 330 STCW Elementary First Aid**......**2.0 (2)** This course meets the mandatory minimum requirements specified under STCW as related to medical first aid and basic safety training for all merchant mariners. This course is part of the STCW certification process. Cadets will learn to take immediate action upon encountering an accident or other medical emergency. STCW.

#### 

Required prerequisite(s): MDK 210 Corequisite(s): MDK 332

Recommended competencies: ENG 111, MTH 111

An in-depth study of various electronic navigation systems with emphasis on radar and covering the theory, operation, use and general maintenance of each system. Required course, must be successfully completed before student may receive Rader Observer Certificate. STCW.

#### MDK 332 Electronic Navigation Lab ...... 1.0 (2)

Required prerequisite(s): MDK 210 Corequisite(s): MDK 331

Recommended competencies: ENG 111, MTH 111

A practical course to understand the use and operation of a Marine Radar, how to avoid collision situations (Rapid Radar Plotting), use and operation of Automatic Collision Avoidance System, Gyrocompass theory, Loran "C" theory and operation, GPS theory and operation, depth sounder theory and operation. Note: Required course, must be successfully completed before student may receive Radar Observer Certificate. STCW.

#### MDK 333 Automatic Radar Plotting Aids ...... 1.0 (1)

Required prerequisite(s): MDK 331, MDK 332 Recommended competencies: ENG 111, MTH 111 This course presents the principles and operations of automatic radar plotting aids. It includes the legal aspects of ARPA including IMO and USCG standards, the theory of input and processing characteristics of ARPA, the theory of operation, control functions and adjustments, the acquisition and tracking of contacts, the limitations of and potential errors of ARPA, and special ARPA related features. The cadet will demonstrate the setup and practical use of two actual automatic collision avoidance radars. STCW.

**MDK 404 Marine Supervisory Lab** ......**1.0 (2)** This course will provide senior cadets with the experience of supervising subordinate cadets. This experience will include job planning, sequencing of tasks, tools and equipment needed, and personnel required to complete the job. The student will experience what it will be like to be responsible for the crew both in terms of safety and output. **MDK 411 Marine Communications**......**2.0 (2)** This course is designed to acquaint the student with the Global Maritime and Distress Safety System. It includes the basic layout of the GMDSS, communication equipment requirements, licensing requirements, principles and procedures for marine communications, the characteristics of radio wave propagation, frequencies, and modulation. Included also is the Morse Code, Flashing Light and general Distress Signals. STCW.

**MDK 431 ECDIS**......**3.0 (3)** *Required Prerequisite(s): MDK 121, MDK 331, MDK 333 Recommended competencies: ENG 111, MTH 111* The purpose of this course is to meet the training requirements is STCW, as amended, for the operational use of Electronic Chart Display and Information Systems (ECDIS). This course provides the knowledge, skill and understanding of ECDIS emphasizing both the application and learning of ECDIS in a variety of underway contexts. This is achieved through use of a sophisticated navigation simulation integrated with a type-approved ECDIS.

**MDK 444 Cargo Systems**......**2.0 (2)** *Required prerequisite(s): MDK 210, MDK 242 Recommended competencies: ENG 111, MTH 111* An in-depth study of the Great Lakes self-unloading vessel, containter vessels, tankers, passenger vessels, regulations concerning hazardous materials, government regulations and the relationship between vessel and shoreside operations.

**MDK 445 Liquid Cargo Stowage** 2.0 (2) *Required prerequisite(s): MDK 210, MDK 242 Recommended competencies: ENG 111, MTH 111* A study of the tanker industry and the operational aspects of the tank vessel, pollution, prevention, precautions and procedures; layouts of different types of tankers; operations sequence and oil tanker construction and terminology. USCG and OPA '90 regulations will be covered. STCW.

MDK 446 Bridge Team Management......3.0 (3)

Required prerequisite(s): MDK 206, MDK 210 Recommended competencies: ENG 111, MTH 111 The purpose of this course is to further develop, through the use of the Shiphandling Simulator, the cadet's watch management and watch standing skills, bridge tem problem solving, and piloting procedures for various confined waterways on the Great Lakes and other waterways. The cadet will be required to operate the normal pilot house equipment, manage bridge personnel, and be familiar with the paperwork required in the operation of a vessel. STCW. MDK 448 Pilot/Mate License Prep......4.0 (4)

Required prerequisite(s): MDK 312 Recommended competencies: ENG 111, MTH 111 A complete review of all professional subjects studied in the Maritime program pragmatically developed to reflect the essentials of the U.S. Coast Guard examinations. The final grade for this course is dependent on taking the U.S. Coast Guard exam. Cadets must complete all MDK courses with a 2.0 or better. (This class is for GLMA cadets only).

# NMC. Find it here.



### MFG Manufacturing Technology

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Required prerequisite(s): Completion of first academic year. Recommended competencies: ENG 111, MTH 111 This course explores the principles of production technology as they relate to construction and manufacturing, using four major types of knowledge: science, technology, humanities, and descriptive. Students will learn the entire production cycle used in various industries, from raw materials to consumer products, and develop a heightened awareness of the by-products of those processes. **Group 2 course.** 

#### MFG 104 Fluid Power......4.0 (5)

*Recommended competencies: MTH 23 and ENG 97/107* This course is designed to provide students with a basic understanding of the concepts and applications of fluid power technology and the necessary skills for further study in the field. The course is an overview of fluid power technology applications; the general concept of fluid power systems; an introduction to energy input, energy output, energy control, and systems auxiliary components; as well as the design and function of components. **Group 2 course.** 

#### **MFG 111** Math for Manufacturing......**3.0 (3)** Required prerequisite(s): MTH 23 or COMPASS placement into MTH 111

This course will apply principles of mathematics, geometry, and basic trigonometry to applications in manufacturing. Topics will include proportions, calculation of machine speed and feed and geometric relationships of triangles and circles. Problem solving will require the use of the Pythagorean Theorem and the sine, cosine, and tangent functions to solve right triangles. The Law of Sines and Law of Cosines will be used to solve oblique triangle applications. **Group 2 course.** 

### **MGT Management**

What do managers actually do? This applications-oriented course will teach you the basics of day-to-day managerial work-planning, organization, leading, and controlling. Special emphasis with realistic scenarios are explored in leadership, communication, planning, conflict, change, strategy, problem solving, teams and work groups. **Group 2 course.** 

#### **MGT 245 Principles of Entrepreneurship**......**3.0 (3)** *Recommended prerequisite(s): BUS 101, MKT 201, or instructor permission*

This course provides practical knowledge needed for entrepreneurs with special attention focusing on creativity, opportunity, and feasibility of a new start up. Sources of funding and resources for small ventures are addressed indepth in this course to prepare the learner for practical application. This course primarily focuses on idea generation and start-up of the business including risk, funding sources, cash-flow, and awareness of external environmental factors that impact the business. The course project is the development of a feasibility study or related project. Feasibility studies include the extent to which an idea is viable, realistic and the extent to which the entrepreneur is aware of internal and external forces that could affect the business. **Group 2 course.** 

#### **MGT 246** Entrepreneur Marketing & Finance ...... **4.0 (4)** *Required prerequisite(s): MGT 245*

This course is an in-depth focus on the marketing and finance issues unique to entrepreneurs. Marketing topics include niche markets, guerilla marketing, strategic partnerships, social media, and e-marketing access to international markets. Finance topics include capital resource options, financial relationship management, cash flow, pro-forma planning, and strategic ownership models. **Group 2 course.** 

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Human Resource managers are especially challenged today navigating employment waters that require expertise in employment legislation, recruitment, selection, training and development, compensation, employee appraisal, labor relations, safety and health. Theory and practice of these topics are explored with special emphasis on day-to-day applications in the workplace. **Group 2 course.** 

> NMC. Find it here.



# **MKT Marketing**

**MKT 241 Principles of Advertising** ......**3.0 (3)** *Recommended prerequisite(s): BUS 101, placement into ENG 111* This course will prepare the learner with an understanding of the real economic, social and cultural role of advertising and conversely, the impact of society's values on advertising. The strategic function of advertising within the broader context of business and marketing will be discussed in this course. The creative aspects of advertising or related project. The global effect of marketing and advertising on business and national economics will be addressed along with ethical issues related to truth in advertising in today's society. **Group 2 course.** 

# **MNG Maritime Engineering**

**MNG 100** Intro to Marine Engineering ...... **1.0 (2)** This course is a general introduction to the shipboard Engine Room. The duties and responsibilities of the engine room personnel will be covered. The course will include an introduction to the engine room propulsion systems (diesel and steam), and a study of the operation of the ship's steering gear and deck machinery. This course provides a foundation for the deck and engineering cadet to build upon in his/her program of study.

#### 

Required prerequisite(s): MNG 100

Corequisite(s): MNG 110

The course will introduce the student to the proper use of measuring systems and drafting equipment. The course will develop the correct techniques used in the production of multiview projection, orthographic representation, auxiliary views, section views, and dimensioning. The student will be familiar with the correct (ANSI) symbols used in piping, electrical, and fluid power schematics. The student will be instructed in the use of AutoCAD LT to produce the listed topics. STCW.

#### 

Required prerequisite(s): MNG 100 Corequisite(s): MNG 104

Survey of the construction, operation, and maintenance of shipboard systems. The major emphasis will be on piping, valves, control valves, and pumps. Practical application of the above items will be supported in the lab portion of this course. STCW.

### 

Required prerequisite(s): MNG 104

This course bridges the gap between theoretical physics and practical hands-on technology. Industrial electrical safety, shock hazards, and emergency procedures are stressed. The cadet receives practical hands-on practice with both digital, analog meters and oscilloscopes. Digital and analog circuits are constructed and examined both in the lab and with computer simulations. Practical considerations of circuit construction in the field are discussed in terms of ABS, USCG, and IEEE regulations and requirements. The cadet is also introduced to concepts of logic with emphasis being placed on the understanding and construction of ladder diagrams and the use of truth tables for troubleshooting electronic circuits. STCW.

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This course will introduce the cadet to the shipboard Unloading Systems used aboard Great Lakes Bulk Carriers. The cadet will study the operation and maintenance of this unloading equipment. This instruction is supported by work in the lab. A review of Pollution Regulations will also be covered. STCW.

**MNG 270 Issues in Power Production** ......**3.0 (3)** This course will delve into current issues in the field of commercial power production, including such areas as local, state, and federal requirements and interfaces. Renewable energy such as solar, wind, and biomass will be covered in detail. The future of energy and how it affects society will be explored. Students will explore issues currently facing the power production issue.



#### 2014 - 2015 NMC CATALOG

MNG 271 Maritime Welding ...... 2.0 (3)

Required prerequisite(s): Completion of first academic year. Recommended competencies: ENG 111, MTH 111 A welding theory and practice course offered as an elective to anyone interested in welding. Manipulative skills are emphasized for the gas metal arc, shielded metal arc, oxy-fuel and braze welding processes. An introduction to plasma arc cutting, gas tungsten arc, resistance spot welding, stud welding and plastic welding is included. Appropriate reading assignments are included.

#### 

### Recommended competencies: ENG 111, MTH 111

This course provides instruction in the operation and maintenance of refrigeration and air conditioning equipment used on merchant vessels. It covers the theory of refrigeration and the practical operation of refrigeration plants. Lecture reinforced with the use of hands-on labs. STCW.

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During this course, the student will be working in a commercial power facility following a prescribed course in the study of plan operations with particular emphasis on the machinery room and auxiliary equipment, including safety requirements. In addition, the student spends a minimum of eight hours a day under the supervision of a licensed operator gaining experience in the various engineering duties and responsibilities.

#### MNG 314 Diesel Engineering......7.0 (7)

Required prerequisite(s): MNG 110

Recommended competencies: ENG 111, MTH 111

A comprehensive course dealing with the development of the diesel engine as it applies to marine propulsion. This course is designed to cover the construction, operation, and main-tenance of the marine diesel engine and its support systems. Lecture is reinforced with extensive use of hands-on labs and computerized simulations. STCW.



#### **MNG 317** Engineering Sea Project I......**3.0 (3)** *Required prerequisite(s): MDK 149, MNG 314 or*

instructor permission

During this course the cadet is on board the TS State of Michigan. The cadet follows a prescribed course of study in vessel operations with particular emphasis on engine room and auxiliary equipment, including safety requirements. In addition, the cadet spends eight hours a day under the supervision of a licensed officer gaining experience in various engineering duties and responsibilities. STCW.

#### **MNG 318 Engineering Sea Project II......6.0 (6)** *Required prerequisite(s): MNG 321, MNG 322, MNG 323, MNG 317*

This course is a continuation of MNG 317 and is designed to provide the cadet with advanced knowledge and sailing time to meet the licensing requirements of the U.S. Coast Guard, STCW and the criteria established by the Maritime Administration. STCW.

#### **MNG 319 Engineering Sea Project III**.....**6.0 (6)** *Required prerequisite(s): MNG 318*

This course is a continuation of MNG 318 and is designed to provide the cadet with advanced knowledge and sailing time to meet the licensing requirements of the U.S. Coast Guard, STCW and the criteria established by the Maritime Administration. STCW.

**MNG 323 Marine Steam Lab......1.0 (1)** *Required prerequisite(s): MNG 104, MNG 105, MNG 110 Recommended competencies: ENG 111, MTH 111* This is a hands-on course intended to reinforce MNG 321 and MNG 322. Students will disassemble, inspect, and reassemble machinery typical of what is found aboard ship. Machinery condition will be noted and recommendations made. Machinery records will be updated. STCW.

#### MNG 335 Electric Machines & Controls ......4.0 (4)

Required prerequisite(s): MNG 234 Corequisite(s): MNG 336

This course covers the theory, application, operation, and maintenance of rotating machines as typically found aboard U.S. Merchant Ships and related industrial applications. Generators (DC and AC), motors (DC, multiple and single phase AC), transformers, and related equipment are covered. Special attention is given to magnet relay and electronic logic control circuits. Regulations specific to CFR title 46 and IEEE are reviewed. STCW.

#### MNG 336 Electric Machines & Controls Lab......... 2.0 (4)

Required prerequisite(s): MNG 234 Corequisite(s): MNG 335

Recommended competencies: ENG 111, MTH 111

This course is a companion class to MNG 235. Course material is reinforced with practical hands-on experience with universal electrical lab machinery. The operating characteristics of typical rotating machines are studied. Special attention is given to problems associated with multiple generator AC distribution. Safe and effective troubleshooting techniques are practiced on live 110/208 volt electrical control systems. STCW.

*Required prerequisite(s): MNG 314, MNG 317, MNG 321, MNG 322, MNG 323, MNG 335, MNG 336 Corequisite(s): MNG 466, MNG 496* 

Recommended competencies: ENG 111, MTH 111

Engineering simulators are used to strengthen the watchstanding skills of the engineering cadet. The cadet will be required to operate shipboard systems, manage engine room personnel, and become familiar with the paper work required in the operation of a modern engine room.

#### MNG 466 Engine Room Business......2.0 (2)

Corequisite(s): MNG 455, MNG 496

Recommended competencies: ENG 111, MTH 111 Cadets are introduced to the everyday management and administrative activities confronting the Marine Engineer. The cadet will be introduced to management and personnel skills necessary to deal with people problems peculiar to the marine environment. General issues of alcohol, drug abuse, and sexual harassment in the marine environment will be discussed and placed in perspective with USCG and STCW protocols. Other necessary skills such as program planning, flow-charting, recordkeeping, etc. will be introduced and practiced in scenarios. Legal considerations for the ship's officer such as log books, union contracts, certificates, evaluations, inspections, regulations, etc. will be introduced and discussed.

#### MNG 496 License Preparation Engine......2.0 (2)

Required prerequisite(s): MNG 314, MNG 317, MNG 321, MNG 322, MNG 323, MNG 335, MNG 336 Corequisite(s): MNG 455, MNG 466 Recommended competencies: ENG 111, MTH 111 A complete review of all professional subjects studied in the Maritime Engineering program. This course is designed to cover the essentials of the Third Assistant Engineer's examination administered by the U.S. Coast Guard. The final grade for this course is dependent on taking the U.S. Coast Guard license exam.

### **MNS Naval Science**

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This course is required of all Maritime Academy cadets who are Midshipmen in the Strategic Sealift Officer Program/U.S. Naval Reserve program. It familiarizes the student with the naval missions and heritage and assists the Merchant Marine officer in making the transition from civilian to sailor.


# **MTH Mathematics**

Students are REQUIRED to have and learn to use a TI-84 graphing calculator for ALL math classes.

#### MTH 06 Basic Numerical Skills 2.0 (developmental) (2)

Required prerequisite(s): COMPASS placement Corequisite(s): MTH 08

This course is taken along with MTH 08. This course is designed to emphasize the thorough development of arithmetic concepts and basic numerical skill mastery. Hands-on activities applied and real-world applications will be stressed.

#### **MTH 08 Pre-Algebra**.....**4.0 (developmental) (4)** *Required prerequisite(s): COMPASS placement*

This course is a review of basic arithmetic skills in a lecturebased format with online homework and e-text. Basic operations, and the order of operations are reviewed, and then opened to signed numbers, i.e. the integers. The course then proceeds through prime factorization, and all operations with fractions and mixed numerals. After this thorough presentation of fractions, it continues with decimal notation, and a fresh look at ratios and proportions. Percent notation and several practical applications of percentages are covered. The course finishes with measurement, in both English and metric units, along with their application to polygons and three-dimensional solids. Measurement conversions are done with conversion factors, serving as an introduction to dimensional analysis. Use of the scientific calculator is encouraged throughout the course, except for the review of basic hand calculations, which require the student to demonstrate the ability to carry out calculations by standard algorithms.

#### MTH 10 Beginning Algebra Skills ......2.0 (developmental) (2)

Required prerequisite(s): MTH 08 with a 2.0 grade or higher or appropriate placement score Corequisite(s): MTH 23

This course is taken along with MTH 23 and is designed to emphasize the thorough development of the arithmetic of fractions and integers along with fraction thinking and problem solving. Other topics that are integrated throughout the course include: rational numbers, the properties of integral exponents, addition, subtraction, and multiplication of polynomials and factoring of polynomials. Solving linear equations, quadratic equations, and proportions are also covered. Function notation is introduced and used throughout the course and basic graphing of linear functions is covered, including slope, x- and y-intercepts. Problem solving is stressed, including unit conversions and mixture problems.

#### MTH 11 Intermediate Algebra Skills......2.0 (developmental) (2)

Required prerequisite(s): MTH 23 with a 2.0 grade or higher or appropriate placement score Corequisite(s): MTH 111

This course is taken along with MTH 111 and is designed to review fraction thinking and problem solving. Other topics

integrated throughout the course include: elementary set notation, a description of the Real number system and its major subsets, and an introduction to the Complex number system. Solving linear, quadratic, and rational equations and inequalities, as well as radical equations and systems of equations are also covered. Matrices are introduced; properties of integral exponents are reviewed and extended to rational exponents. Pre-Intermediate Algebra also covers simplifying, adding, subtracting, and multiplying radicals. Problem solving and the function concept are integrated throughout.

#### **MTH 23 Beginning Algebra**......**4.0 (developmental) (4)** *Required prerequisite(s): MTH 08 with a 2.0 grade or higher*

or appropriate placement score The course covers the arithmetic of integers and rational numbers, the properties of integral exponents, addition, subtraction, and multiplication of polynomials and factoring of polynomials. Solving linear equations, quadratic equations, and proportions is also covered. Basic graphing of linear functions is also covered, including slope, x and y-intercepts. Problem solving is stressed, including unit conversions.

#### 

Intermediate Algebra covers elementary set notation, a description of the Real number system and its major subsets, and an introduction to the Complex number system. Solving linear, quadratic and rational equations and inequalities, as well as radical equations and systems of equations is also covered. The course includes an investigation of graphical, numerical, and symbolic representations and manipulations of various functions including linear, rational and quadratic. Matrices are introduced; properties of integral exponents are reviewed and extended to rational exponents. Intermediate algebra also covers simplifying, adding, subtracting and multiplying radicals. Problem solving and the function concept are integrated throughout. This course is offered in multiple formats such as online or traditional; consult an advisor before enrolling. **Group 2 course.** 

#### 

placement score

A high level computer language (currently Java) will be used to provide a thorough introduction to computer science, object-oriented programming, problem solving, and algorithm and data structure development. Illustrative applications and programming assignments will be given. **Group 1 course.** 

MTH 131 Intro to Probability and Statistics.......3.0 (3) Required prerequisite(s): MTH 111 or higher (excluding MTH 205 and MTH 206) or appropriate placement score Descriptive statistics, experimental design, an introduction to probability concepts and inferential statistics are included in this course. Descriptive statistics includes graphical representations such as histograms, bar charts, pie charts, boxplots, stemplots, scatterplots, and the normal curve. Measures of central tendency such as the mean and median, and measures of variation such as the standard deviation and quartiles are studied. The normal density function and linear regression are included. One and two sample problems involving confidence intervals and significance tests are studied for the sample mean and the sample proportion. This course is offered in multiple formats such as online or traditional; consult an advisor before enrolling. Group 1 course.

**MTH 141 Calculus I**.....**5.0 (5)** *Required prerequisite(s): MTH 122 or MTH 140 or higher (excluding MTH 205 and MTH 206) or appropriate placement score* 

This is the first course in a traditional calculus sequence, emphasizing the development of the mathematical thought process. The topics covered include limits (definitions and limit proofs), continuity, derivatives of algebraic and trigonometric functions, applications of the derivative, the indefinite and definite integral, the fundamental theorem of calculus, and applications of integration. **Group 1 course.** 

#### 

This course is a continuation of Calculus I. The topics include differentiation and integration involving exponential, logarithmic and inverse trigonometric function. There is an introduction of various integration methods. L'Hopital's Rule, improper integrals, parametric equations, polar coordinates, and infinite sequences and series are also investigated. **Group 1 course.** 

#### MTH 205 Math for Elementary Teachers I......4.0 (4)

*Required prerequisite(s): MTH 111 or higher or appropriate placement score* 

Recommended prerequisite(s): ENG 111

This course places an emphasis on the structure of elementary mathematics. Content includes problem solving and critical thinking using Polya's four-step process, sets and set operations, relations, whole numbers, integers, rational numbers, irrational numbers, arithmetic algorithms in base ten and in other bases, properties of numbers, least common multiples, greatest common factors, fractions, ratios and proportions, percents, and elementary number theory. The course also includes the use of manipulatives, like Cuisenaire Rods, base pieces fraction pieces, and Pattern Blocks, to investigate arithmetic concepts. Calculator use is incorporated into the course to give students calculator experience. **Group 1 course**.

MTH 206 Math for Elem. Teachers II ...... 4.0 (4)

Required prerequisite(s): MTH 205, MTH 111 or higher (excluding MTH 131) or appropriate placement score This course is a continuation of MTH 205. Content includes problem solving and critical thinking using Polya's four-step process; basic statistics including mean, median, mode, range, standard deviation, graphical representations of data, linear regression, and weighted averages; probability including the fundamental counting principal, permutation, combination, partitions, experimental probability, theoretical probability, compound probability, probability tree diagrams, expected value and the concept of fair games. The course also explores the fundamental ideas of planar and spatial geometry which includes the analysis and classification of polygons, polyhedra, circles, spheres, cones and cylinders, area, perimeter, surface area and congruence, similarity, measurement, both direct and indirect, and dimensional analysis. This course also includes an introduction to the use of computer and/or graphing calculator software as learning tools for understanding concepts of informal geometry. Group 1 course.

**MTH 241 Calculus III**......**4.0 (4)** *Required prerequisite(s): MTH 142* 

The course covers multivariable calculus including three-dimensional analytical geometry, vector valued functions, partial differentiation, and multiple integration (with applications of each). Also an introduction to linear algebra will be covered. **Group 1 course.** 

#### **MTH 251 Differential Equations** ......**4.0 (4)** *Required prerequisite(s): MTH 142*

Introduces the concepts of differential equations and of linear algebra. Topics include: solving linear and systems of linear differential equations, Laplace transformations and their physical applications. Solutions are found using analytical, numerical, or graphical techniques relating to quantitative modeling and Laplace transforms. Linear algebraic topics include: vector spaces, subspaces, spanning sets, linear dependence and independence, basis and dimensions, eigenvalues, eigenvectors, and linear transformations. **Group 1 course.** 

Visit www.nmc.edu/science-math for detailed information.

# **MUS Music**

#### MUS 90 Applied Music-Remedial ...... 1.0-2.0 (1-2) Instruction

MUS 90 is remedial instruction for students wanting to take 100 level applied instruction in voice, piano, organ, guitar, or any of the traditional wind, percussion or string instruments, but lack either music reading, technical skills, artistic skills or tone production skills. An audition and interview, or, if no music is prepared, only an interview will take place to determine the competency levels of a student. Goals will be established to address those competencies required for 100-level instruction. This course does not apply toward graduation. MUS 90 level instruction can be repeated until remediation is complete. Students will meet with an assigned faculty member for weekly instruction at a pre-arranged time and place. Materials specific to the students needs will be assigned. The Applied Faculty will recommend to the acting Department chair when the competencies have been met.

Intro to Music Theory I is designed for students who are pursuing music as an academic major or minor, particularly for those who need further work before entering MUS 101. This course focuses on the basic materials of music: structures of tonality, harmonic progression, and the technique of harmonization. Students are required to complete and analyze music, using practices listed above. **Group 2 course.** 

#### 

Prerequisite(s): MUS 100A

*Corequisite(s): MUS 105B, MUS 107 or Applied Piano lessons* Intro to Music Theory II is designed for students who are pursuing music as an academic major or minor, particularly for those who have completed MUS 100A or its equivalent and are not yet prepared to enter MUS 101. This course builds on the fundamentals of MUS 100A and includes a focus on more complex rhythmic and harmonic structures. Students are required to complete and analyze music, using practices and skills learned in the course. **Group 2 course.** 

#### 

Recommended prerequisite(s): An understanding of music fundamentals

*Corequisite(s): MUS 103, MUS 106 or Applied Piano lessons* Theory of Music course work is designed for students who are pursuing music as an academic major or minor. The first year includes the basic materials of music: the structures of tonality, harmonic progression, and the technique of harmonization. Students are required to complete and analyze music using practices listed above. **Group 2 course.** 

#### 

Required prerequisite(s): MUS 101

*Corequisite(s): MUS 104, MUS 107 or Applied Piano lessons* This course in Theory of Music is the second semester of a two semester/one-year sequence of coursework designed for students who are pursuing music as an academic major or minor. This course includes the basic materials of music: the structures of tonality, harmonic progression, and the technique of harmonization. Students are required to complete and analyze music using practices listed above. **Group 2 course.** 

#### 

*music fundamentals Corequisite(s): MUS 101, MUS 106 or Applied Piano lessons* This is the first of a four-semester/two year sequence of course work designed for students who are pursuing music as an academic major or minor. The content of this course is building of skills in reading music, and developing aural competency in interval relationships, scales, and triads, through a variety of musical practices. **Group 2 course.** 

#### MUS 105B Intro to Ear Training II......1.0 (2)

Required Prerequisite(s): MUS 105A Corequisite(s): MUS 100B, MUS 107 or Applied Piano lessons This coursework is designed for students who are pursuing music as an academic major or minor, particularly for those who have completed MUS 105A or its equivalent and are not yet ready for MUS 103. This course will build on the skills learned in MUS 105A and will focus on developing more advanced skills, in reading music, aural competency in interval relationships, scales, and triads, through a variety of musical practices, principally the voice. **Group 2 course.** 

**MUS 106 Class Piano I**.....**2.0 (2)** Piano study for the beginning or near-beginning student. Cultivation of technical-musical awareness and keyboard playing ability, individually and in ensemble. **Group 2 course.** 

**Course Descriptions** 

This course is a survey of the history of Western Music from the medieval Europe to the present. Each music era of Western culture will be examined in regards to significant composers and compositions. This course places a strong emphasis on learning to listen and also provides students the opportunity to become familiar with the basic elements of music. No musical background or training is assumed or required. Group 1 course.

Jazz Appreciation is a survey of the stylistic and historical elements of jazz from its earliest beginnings and influences through the contemporary jazz scene. Emphasis is placed on listening to the significant jazz artists and styles of each period of jazz. The class will also introduce students to the many musical characteristics, techniques, and terms found in the jazz tradition, as well as their historical significance. No musical background or training is assumed or required. Group 1 course.

This course is designed for the student who wishes to acquire basic knowledge and techniques for guitar playing. The instruction introduces the basic information of music notation, as well as mechanical skills for the development of individual playing ability. The format is a structured approach covering hand position, fundamentals of reading music and chord knowledge. Repertoire will include Folk music, popular music and the Blues, and will utilize both strumming and picking techniques. Group 2 course.

Recommended prerequisite(s): MUS 112

This course is a continuation of MUS 112. Emphasis is placed on developing music reading skills for the guitar, along with further development of Folk picking techniques and understanding of the Blues. An introduction to Jazz chords along with fundamentals of music theory will also be presented. Group 2 course.

#### MUS 114 NMC Grand Traverse Chorale ...... 1.0 (2)

Required prerequisite(s): Choral experience or instructor permission

This large, mixed (SATB) choral ensemble is open to all students with past choral experience. The Grand Traverse Chorale provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through the 21st century with an emphasis on large masterworks. Performance excellence is principal to the purpose of the ensemble. The Grand Traverse Chorale performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. Group 2 course.

MUS 115 NMC Grand Traverse Chorale ...... 1.0 (2) Recommended prerequisite(s): MUS 114 or instructor permission MUS 115 is a continuation of rehearsal and performance as begun in MUS 114. This large, mixed (SATB) choral ensemble is open to all students with past choral experience. The Grand Traverse Chorale provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selectedfrom Antiquity through 21st century with an emphasis on large masterworks. Performance excellence is principle to the purpose of the ensemble. The Grand Traverse Chorale performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. Group 2 course.

#### MUS 116 NMC Chamber Singers...... 1.0 (3)

Required prerequisite(s): Choral experience or instructor permission

This mixed (SATB) choral ensemble is open to all students with past choral experience. The Chamber Singers provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through the 21st century with an emphasis on newer works and works for small choral ensembles. Performance excellence is principle to the purpose to the ensemble. The Chamber Singers perform throughout the semester and frequently perform with the Traverse Symphony Orchestra. Group 2 course.

#### MUS 117 NMC Chamber Singers......1.0 (3) Recommended prerequisite(s): MUS 116 or equivalent or audition by instructor

MUS 117 is a continuation of rehearsal and performance as begun in MUS 116. This mixed (SATB) choral ensemble is open to all students with past choral experience. The Chamber Singers provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through the 21st century with emphasis on newer works and works for small choral ensembles. Performance excellence is principle to the purpose of the ensemble. The Chamber Singers perform throughout the semester and frequently perform with the Traverse Symphony Orchestra. Group 2 course.

#### MUS 118 NMC Concert Band ...... 1.0 (2)

*Required prerequisite(s): Previous band experience* This course will provide a survey of significant concert and symphonic band repertoire. Students will learn performance techniques on their instrument as are relevant to the concert band medium. Students will also learn the role that their instrument plays within the context of a concert band. Generally, two to four concerts will be performed each semester. Students must have a high school level competency on a wind or percussion instrument. An audition or personal interview with the conductor will be required for placement in the ensemble. Group 2 course.

#### MUS 119 NMC Concert Band......1.0 (2)

Recommended prerequisite(s): MUS 118 or previous band experience

MUS 119 is a continuation of rehearsal and performance as begun in MUS 118. This course will provide a survey of significant concert and symphonic band repertoire. Students will learn performance techniques on their instrument as are relevant to the concert band medium. Students will also learn the role that their instrument plays within the context of a concert band. Generally, two to four concerts will be performed each semester. Students must have a high school level competency on a wind of percussion instrument. An audition or personal interview with the conductor will be required for placement in the ensemble. **Group 2 course.** 

#### MUS 120 NMC Jazz Band...... 1.0 (2)

Required prerequisite(s): Previous band or

jazz band experience, or instructor permission

A course for the performer with a focus on big band jazz ensemble techniques and styles. A wide range of jazz styles are covered including swing, be-bop, ballads, rock/fusion and Latin. Some improvisation is briefly explored and always encouraged, although it is not the main focus of this course. A minimum of one concert will be performed each semester and all members are required to attend and participate in all scheduled performances. **Group 2 course.** 

#### MUS 121 NMC Jazz Band......1.0 (2)

Recommended prerequisite(s): MUS 120, previous band or jazz band experience, or instructor permission A course for the performer with a focus on big band jazz ensemble techniques and styles. A wide range of jazz styles are covered including swing, be-bop, ballads, rock/fusion and Latin. Some improvisation is briefly explored and always encouraged, although it is not the main focus of this course. A minimum of one concert will be performed each semester and all members are required to attend and participate in all scheduled performances. **Group 2 course.** 

**MUS 124 NMC Collegiate Singers** ......**1.0 (3)** This choral ensemble is open to all students. The Collegiate Singers is designed for beginning and intermediate choral singers with specific instructional emphasis placed on singing and ensemble skills. This course will provide students with a broad base of skills that will be applicable to other choral ensembles in future collegiate years and beyond. The Collegiate Singers perform throughout the semester. **Group 2 course.** 

**MUS 127 Traverse Symphony Orchestra** ......**1.0 (2)** This course is designed to give students the opportunity to study and perform orchestral literature, both standard and contemporary. The TSO, and its affiliated programs, is open by audition in the late summer and early fall of the year, and gives 8-10 public concerts per year. Performance is required for credit. Audition, rehearsal, and performance information is available through the music department. **Group 2 course.** 

#### **MUS 128** Traverse Symphony Orchestra ...... 1.0 (2) Recommended prerequisite(s): MUS 127

This course is designed to give students the opportunity to study and perform orchestra literature, both standard and contemporary. The TSO, and its affiliated programs, is open by audition in the late summer and early fall of the year, and gives 8-10 public concerts per year. Performance is required for credit. Audition, rehearsal, and performance information is available through the music department. **Group 2 course.** 

#### MUS 131-135 & 137-139 Ensembles in ...... 1.0 (2) Applied Music I

Required prerequisite(s): Instructor permission

This course prepares students for public performance and develops abilities in ensemble techniques. Students study in small ensembles (duets, trios, quartets, quintets, and octets) under faculty direction. Students are expected to perform, at a minimum, for one Music Convocation each semester. Course number suffix A designates fall semester and suffix B designates spring semester. **Group 2 course.** 

Required prerequisite(s): Previous choral/vocal experience, or instructor permission

A small ensemble of men's and women's voices rehearses and performs vocal jazz works. Develop skills in vocal jazz styles, blending harmonies, microphone technique, and jazz theory. **Group 2 course.** 

#### MUS 136B Ensembles - Vocal Jazz I ...... 1.0 (2)

Required prerequisite(s): MUS 136A, previous choral/vocal experience, or instructor permission A small ensemble of men's and women's voices rehearses and performs vocal jazz works. Develop skills in vocal jazz styles, blending harmonies, microphone technique, and jazz theory. **Group 2 course.** 

#### MUS 140-160 & 162-168 Applied Music-...... 1-2.0 (1-2) Private Lesson

Note: 100 and 200 level courses may be taken three times. Private lessons for strings, brass, woodwinds, guitar, piano, voice, organ, and percussion are offered. Students may enroll for 1.0 credit (for a 30 minute, weekly lesson) or for 2.0 credits (for a 60 minute, weekly lesson). Music Majors should enroll for 2.0 credits. After registering for Applied Lessons, please contact Jeffrey Cobb, Director of Music Programs (jecobb@nmc.edu or (231) 995-1338), before or during the first week of classes for placement with an applied music instructor. A pre-arranged lesson time with the assigned instructor is arranged and studies/ compositions, as appropriate, are prepared for continuing musical development. Students are expected to perform, at a minimum, for one Music Convocation each semester. **Group 2 course.** 

#### 

Recommended prerequisite(s): The successful completion of

MUS 102, 104, 107 or the equivalent competency The third semester of a four-semester/two year sequence of coursework designed for students who are pursuing music as an academic major. Harmonic analyzation, traditional and non-traditional compositional techniques and musical form

make up the course content. Group 1 course.

#### 

Recommended prerequisite(s): The successful completion of MUS 102, 104, 107, 206 or the equivalent competency Corequisite(s): MUS 204, MUS 207

The fourth semester of a four-semester/two year sequence of coursework designed for students who are pursuing music as an academic major. The course content is a continuation of MUS 201 with the addition of the study of 20th century compositional and beginning counterpoint. **Group 1 course.** 

#### 

The third semester of a four-semester/two-year sequence of course work designed for students who are pursuing music as an academic major. The content of this course includes the building of skills in reading music, melodic and harmonic dictation and aural competency through a variety of musical practices, principally the voice. **Group 2 course.** 

#### MUS 204 Sight Singing & Ear Training ......1 (2)

Recommended prerequisite(s); The successful completion of MUS 102, 104, 206 or the equivalent competency Corequisite(s): MUS 202, MUS 207

The fourth semester of a four-semester/two-year sequence of course work designed for students who are pursuing music as an academic major. A continuation of MUS 203, this course deals with the building of advanced skills in reading music, melodic and harmonic dictation and aural competency through a variety of musical practices, principally the voice. **Group 2 course.** 

**MUS 206 Class Piano III......2.0 (2)** *Recommended prerequisite(s): MUS 107 or instructor permission* This is the third of a four-semester, two-year sequence of the

study of piano. Objectives are the cultivation of technical-musical awareness and keyboard playing ability. **Group 2 course.** 

MUS 207	Class Piano IV	20	(2)
1000 201		2.0	(4)

Recommended prerequisite(s): MUS 206 or instructor permission

This is the fourth of a four semester, two year sequence of the study of piano. Objectives are the cultivation of technical-musical awareness and keyboard playing ability. A continuation of MUS 206. **Group 2 course.** 

MUS 214 NMC Grand Traverse Chorale......1.0 (2)

*Recommended prerequisite(s): MUS 115, choral experience, or instructor permission* 

MUS 214 is continuation of rehearsal and performance as begun in MUS 115. This large, mixed (SATB) choral ensemble is open to all students with past choral experience. The Grand Traverse Chorale provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through 21st century with an emphasis on large masterworks. Performance excellence is principle to the purpose of the ensemble. The Grand Traverse Chorale performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. **Group 2 course.** 

#### MUS 215 NMC Grand Traverse Chorale......1.0 (2)

*Recommended prerequisite(s): MUS 214, choral experience, or instructor permission* 

MUS 215 is a continuation of rehearsal and performance as begun in MUS 214. This large, mixed (SATB) chorale ensemble is open to all students with past choral experience. The Grand Traverse Chorale provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through 21st century with an emphasis on large masterworks. Performance excellence is principle to the purpose of the ensemble. The Grand Traverse Chorale performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. **Group 2 course.** 



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#### MUS 216 NMC Chamber Singers......1.0 (3)

Recommended prerequisite(s): MUS 117, choral experience, or instructor permission

MUS 216 is a continuation of rehearsal and performance as begun in MUS 117. This large, mixed (SATB) chorale ensemble is open to all students with past choral experience. The Chamber Singers provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through 21st century with an emphasis on large masterworks. Performance excellence is principle to the purpose of the ensemble. The Chamber Singers performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. **Group 2 course.** 

#### MUS 217 NMC Chamber Singers......1.0 (3)

*Recommended prerequisite(s): MUS 216, choral experience, or instructor permission* 

MUS 217 is a continuation of rehearsal and performance as begun in MUS 216. This large, mixed (SATB) chorale ensemble is open to all students with past choral experience. The Chamber Singers provides its members with an educational experience and personal enrichment made possible through singing of quality choral literature selected from Antiquity through 21st century with an emphasis on large masterworks. Performance excellence is principle to the purpose of the ensemble. The Chamber Singers performs throughout the semester and frequently performs with the Traverse Symphony Orchestra. **Group 2 course.** 

#### MUS 218 NMC Concert Band......1.0 (2)

*Recommended prerequisite(s): MUS 119 or previous band experience* 

MUS 218 is a continuation of rehearsal and performance as begun in MUS 119. This course will provide a survey of significant concert and symphonic band repertoire. Students will learn performance techniques on their instrument as are relevant to the concert band medium. Students will also learn the role that their instrument plays within the context of a concert band. Generally, two to four concerts will be performed each semester. Students must have a high school level competency on a wind or percussion instrument. An audition or personal interview with the conductor will be required for placement in the ensemble. **Group 2 course.** 

# 

*Recommended prerequisite(s): MUS 218 or previous band experience* 

MUS 219 is a continuation of rehearsal and performance as begun in MUS 218. This course will provide a survey of significant concert and symphonic band repertoire. Students will learn performance techniques on their instrument as are relevant to the concert band medium. Students will also learn the role that their instrument plays within the context of a concert band. Generally, two to four concerts will be performed each semester. Students must have a high school level competency on a wind or percussion instrument. An audition or personal interview with the conductor will be required for placement in the ensemble. **Group 2 course.**  

# MUS 227 Traverse Symphony Orchestra ...... 1.0 (2)

Recommended prerequisite(s): MUS 128

This course is designed to give students the opportunity to study and perform orchestral literature, both standard and contemporary. The TSO, and its affiliated programs, is open by audition in the late summer and early fall of the year, and gives 8-10 public concerts per year. Performance is required for credit. Audition, rehearsal, and performance information is available through the music department. **Group 2 course.** 

#### 

This course is designed to give students the opportunity to study and perform orchestral literature, both standard and contemporary. The TSO, and its affiliated programs, is open by audition in the late summer and early fall of the year, and gives 8-10 public concerts per year. Performance is required for credit. Audition, rehearsal, and performance information is available through the music department. **Group 2 course.** 

#### MUS 231A-235B & 237A-239B Ensembles in ...... 1.0 (2) Applied Music II

#### Required prerequisite(s): Instructor permission

A continuation of Ensembles, with emphasis on performance and repertoire. This course prepares students for public performance and develops abilities in ensemble techniques. Students study in small ensembles (duets, trios, quartets, quintets, and octets) under faculty direction. Students are expected to perform, at a minimum, for one Music Convocation each semester. Course number suffix A designates fall semester and suffix B designates spring semester. **Group 2 course**.

A small ensemble of men's and women's voices rehearses and performs vocal jazz works. Develop skills in vocal jazz styles, blending harmonies, microphone technique, and jazz theory. **Group 2 course.** 

#### MUS 236B Ensembles - Vocal Jazz II......1.0 (2)

Recommended prerequisite(s): MUS 236A, previous choral/vocal experience, or instructor permission

A small ensemble of men's and women's voices rehearses and performs vocal jazz works. Develop skills in vocal jazz styles, blending harmonies, microphone technique, and jazz theory. **Group 2 course.** 

#### MUS 240-267B Applied Music ..... 1.0-2.0 (1-2) Private Lessons

Required prerequisite(s): A minimum of two semesters of 100 level applied instruction or instructor permission Note: 100 to 200 level courses may be taken three times Private lessons for strings, brass, woodwinds, guitar, piano, voice, organ and percussion are offered. Student may enroll for 1.0 credit (for a 30 minute, weekly lesson) or for 2.0 credits (for a 60 minute, weekly lesson). Music Majors should enroll for 2.0 credits. After registering for Applied Lessons, please contact Jeffrey Cobb, Director of Music Programs (jecobb@nmc.edu or 231-995-1338), before or during the first week of classes for placement with an applied music instructor. A prearranged lesson time with the assigned instructor is arranged and studies/compositions, as appropriate, are prepared for continuing musical development. Students are expected to perform for, at a minimum, one Music Convocation each semester. Group 2 course.

# **OUT Outdoor Pursuits**

**Prerequisite for all Outdoor Pursuits courses:** Students should be at a reasonably good physical fitness level and without current exercise-limiting injuries. These are high-participation courses in which most material is learned through experience on off-campus weekend field trips. Students with disabilities who need accommodations in order to complete these courses should contact the instructor prior to the first class meeting.

**OUT 112** Winter Travel and Camping......**1.0 (2)** This course introduces the three-season backcountry traveler to safe and enjoyable winter outings. The focus is on winter safety, travel techniques (primarily Nordic skiing and snow-shoeing), camping, menu planning, clothing and gear selection, navigation, and shelter building. Group 2 course.

#### **OUT 126 Backpacking II......1.0 (2)** Recommended prerequisite(s): OUT 125 or three-day backpacking experience

This course is for backpackers with prior experience. Its purpose is to broaden the student's knowledge of backpacking techniques with special attention given to lightweight equipment, menu planning, itinerary planning, map and compass navigation, site selection, and other minimal impact considerations. **Group 2 course.** 

#### **OUT 131 Caving II**.....**1.0 (2)** *Recommended prerequisite(s): OUT 130 or instructor permission*

This course focuses on safe and appropriate techniques for exploring caves, with an emphasis on selecting and using equipment, as well as implementing climbing/rappelling safety systems for cave exploration. **Group 2 course.** 

**OUT 132 Rock Climbing I**.....**1.0 (2)** This course is a beginning rock climbing course to introduce students to climbing techniques, belaying, and safety practices related to class five climbing. **Group 2 course.** 

OUT 133	Rock Climbing II	1.0 (2)	)
Recommen	ded prerequisite(s): OUT 132		
or instructo	or permission		
Students w	vill learn anchor selection, active a	nd passive gear	
placement.	, and advanced belaving technique	es, with an intro-	

duction to lead climbing. Group 2 course.

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**OUT 140 Snowshoeing**.....**1.0 (2)** Students will learn how to dress for winter activities, orienteer, winter camp, adjust for emergency situations and explore a variety of locations off campus. Participants will become educated snowshoe consumers and best of all, HAVE FUN! Snowshoes provided. **Group 2 course.** 

**OUT 160 Canoeing I**.....**1.0 (2)** Instruction in various techniques of canoeing are introduced in flat water (lake) and moving water (river). Two one-day trips are planned. **Group 2 course.** 

**OUT 161 Canoeing II**.....**1.0 (2)** *Recommended prerequisite(s): OUT 160 or instructor permission* This course is for canoers with prior experience in river canoeing. Wilderness travel by canoe with an over-night camping trip is planned. **Group 2 course.** 

# **PE Physical Education**

#### **PE 101A** Swing, Latin & Slow Dancing II......**1.0 (2)** *Recommended prerequisite(s): PE 101*

Take each style of dance learned at the beginning level to a more advanced level. Learn swing improvisation and aerials safety and spotting, advanced waltz and slow dancing techniques including lifts, more advanced moves in each of the Latin dances and a new dance, and we will explore the depths of Argentine Tango. Learn to keep partner dancing an integral part of your life and enjoy as a form of exercise. **Group 2 course.** 

**PE 102 Hip-Hop Dance**.....**1.0 (2)** Learn dance combinations used in the Hip-Hop dance style. Develops the strength, flexibility, rhythm, balance, and safe body mechanics to dance confidently in a social atmosphere to popular Hip-Hop music. A great way to exercise and have fun at the same time. Please wear clean, dry gym shoes. **Group 2 course.** 

#### 

Learn advanced dance combinations building upon those used in Hip Hop Dance I. Further develops the strength, flexibility, rhythm, balance, and safe body mechanics to dance confidently in a social atmosphere to popular hip hop music. **Group 2 course.** 

A continuation for students who already have good basic skills and understand the game. Emphasis is on team play, offensive and defensive alignments, and advanced volleyball skills. **Group 2 course.** 

**PE 108 Basketball II**.....**1.0 (2)** *Recommended prerequisite(s): PE 107* A continuation for students who already have good basic skills and understand the game. Emphasis is on advanced offensive and defensive strategies as applied to a practical team

play experience. Group 2 course.

**PE 135** Weightlifting I...... **1.0 (2)** In this self-directed workout class, students will implement a weightlifting/fitness regime utilizing free weights, weight machines, and cardio machines to expand their strength and fitness. Students should have a basic working knowledge of the use of weights and fitness equipment including safety. Students should be without current exercise-limiting injuries or illnesses. **Group 2 course.** 

**PE 136A Weightlifting II**.....**1.0 (2)** *Recommended prerequisite(s): PE 135* Designed for students who wish to continue to build body size and muscular strength. This self-directed class uses free weights and fitness machines, as related to an advanced strength training and conditioning program. **Group 2 course.** 

PE 142 Intermediate Aikido......1.0 (2)

*Recommended prerequisite(s): PE 141* Refinement of Yoshokai-style Beginning Aikido skills with emphasis on mastering techniques and the introduction of bukiwaza, techniques using wooden sword, staff, knife. **Group 2 course.** 

PE 143 Continuing Aikido......1.0 (2) Recommended prerequisite(s): PE 142

Training at this level emulates regular Aikido practice in a private dojo (training facility). Focus is on mastery of advanced techniques, weapons, and philosophy. **Group 2 course.** 

**PE 144 Tae Kwon Do (Karate) I......1.0 (2)** Introduction to the proper etiquette and philosophy of the Korean art of Tae Kwon Do (Karate). Training includes basic blocks, punches, kicks, stances, self-defense and the four-directional punch, the first pattern of Tae Kwon Do. **Group 2 course.** 

Continuation of course work with the addition of advanced blocks, parries, kicks, stalls, traps, take downs, stick/weapon drills, and self-defense. Training includes the five H-forms, the six stick anyos (forms) and the applications. **Group 2 course.** 

**PE 151 Kuntaw IV**.....**1.0 (2)** *Recommended prerequisite(s): PE 150* Refinement of intermediate skills and techniques with additional advanced blocks, parries, traps, take downs, ground fighting, two-on-one fighting, and stick/weapon drills. Includes applications of advanced skills/techniques and the six saiawans and five combats (forms.) **Group 2 course.** 

**PE 164 Judo** .....**1.0 (2)** This class will introduce the basics of the sport of Judo as well as Jujutsu based self defense. Judo is recognized as one of the best forms of exercise. Actual combat (randori) is a big part of Judo though safety is not compromised. Please wear loose, comfortable clothing and come to have fun! **Group 2 course.** 

A continuation of Judo for intermediate and advanced levels. Students will continue to improve skills and abilities and advance through belt testing. **Group 2 course.** 



# PHL Philosophy

#### **PHL 101** Introduction to Philosophy.......**3.0 (3)** *Recommended prerequisite(s): Completion of ENG 11/111 or placement into ENG 111*

This course is an introduction to some of the major areas, ideas, and thinkers of philosophy. Students will read a number of major philosophers in Western Philosophy, such as Socrates, Plato, Aquinas, Descartes, Berkeley, James, Russell, and Sartre, as well as from texts representing non-traditional or non-Western sources, such as Native American and Asian thought. Students will also be introduced to some of the main problems and concepts in the areas of Epistemology, Metaphysics, Ethics, and Aesthetics, as well as investigate other issues or movements, such as Existentialism or Feminism, in more depth. **Group 1 course.** 

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This course is about listening and reading and writing more effectively. Students learn ways to assess information and to form sound evaluative judgments about what is seen, heard, and read. Critical questions provide a structure for critical thinking that supports a continuing search for better opinions, decisions, or judgments. Exercises in understanding and composing logically-sound arguments are emphasized as well as knowing what is fair and reasonable in the argument's structure. Examples are taken from professional situations such as law, medicine, and politics, as well as everyday life. Fallacies in rhetoric, such as name calling and begging the question, are identified and understood. **Group 1 course.** 

#### **PHL 121 Western Religions**......**4.0 (4)** *Recommended prerequisite(s): Completion of ENG 11/111 or placement into ENG 111*

A study of the historical development, main religious teachings, leading personalities, ethical values and worship practices of the major religious traditions of the Western world: Judaism, Christianity, and Islam. **Group 1 course.** 

#### PHL 122 Eastern Religions ...... 4.0 (4)

#### *Recommended prerequisite(s): Completion of ENG 11/111 or placement into ENG 111*

A study of the historical development, main religious teachings, leading personalities, ethical values and worship practices of the major religious traditions of India, China, and Japan: Hinduism, Buddhism, Confucianism, Taoism. **Group 1 course.** 

#### 

*Recommended prerequisite(s): Completion of ENG 11/111 or placement into ENG 111* 

Ethics is a thoughtful analysis of a variety of value systems found in societies today. It explores the nature and meaning of good and evil and how these concepts relate to concepts of right and wrong. It considers how the good is known and how it is promoted in societies. The course combines primary source readings of philosophers and religious writers with explanatory secondary source material and it encourages student discussion of the issues. Through the use of critical judgement and philosophical thought, the course explores ethical theories from classical to modern times and includes consideration of ethics that are part of Eastern philosophical traditions, as well as sources from Native American, African, African American, Feminist, and other non-traditional frameworks and paradigms. **Group 1 course.** 

# 

Recommended prerequisite(s): Completion of ENG 11/111 or placement into ENG 111

This course examines the moral and ethical issues confronting modern societies locally and globally. It examines issues regarding the natural environment, the ethical treatment of animals, biomedical ethics; abortion and issues of human reproduction such as stem-cell research and cloning; business ethics; criminal justice and capital punishment; racism, sexism, and other forms of discrimination, welfare and economic distribution. This course relies on the discipline of philosophy for its methods of inquiry. Incorporated throughout the course is the examination of several approaches to ethics as developed by Aristotle, Kant, Mill, and contemporary philosophies of gender and race. Approaches of Eastern/Asian and Native American philosophy are also considered for contrast with standard western approaches to ethical and social issues. The course considers various topics and specific cases in order to provide an overall view of how ethical reasoning might be applied to current issues. Group 1 course.



# **PHY** Physics

#### 

Required prerequisite(s): MTH 23

Recommended prerequisite(s): Students scoring below ENG 111 level on the placement test should plan on additional study time Corequisite(s): PHY 105 and PHY 105L

This course is an introduction to the fundamental principles developed by mankind to describe the physical universe. In particular, the subjects of mechanics, heat, electricity, waves, and light are surveyed. The development of conceptual understanding and critical-thinking skills is emphasized. Computers are used for data acquisition and analysis. This course is offered in multiple formats such as online or traditional. **Group 1 lab course.** 

Required prerequisite(s): MTH 122 or MTH 140 Corequisite(s): PHY 121 and PHY 121L

This is the first in a two semester sequential course intended to meet the needs of the prospective pre-medical, pre-dental, technical, maritime, architecture, or any other student who has a keen interest in examining some of the basic laws and applications of physics, using college algebra and trigonometry. This course deals with mechanics, sounds, thermodynamics and fluids. The lab portion is designed to illustrate and reinforce the basic concepts of physics while familiarizing the student with laboratory hardware and the experimental nature of physics. **Group 1 lab course.** 

Required prerequisite(s): PHY 121

Corequisite(s): PHY 122 and PHY 122L

A continuation of PHY 121, studies in electricity, magnetism, optics and modern physics are included and reinforced in lecture as well as the laboratory setting. **Group 1 lab course.** 

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Required prerequisite(s): MTH 141, may be taken concurrently Corequisite(s): PHY 221, PHY 221L and PHY 221R Recommended prerequisite(s): ENG 111, may be taken concurrently

This course is the first semester of a two semester course sequence primarily intended for those students preparing for engineering, science, or math careers. Topics include kinematics, Newton's Laws, conservation of momentum, conservation of energy, rotational motion, oscillations, and fluids. The development of conceptual understanding and problem-solving skills is emphasized. Computers are used for data acquisition and analysis. **Group 1 lab course.**  PHY 222 Probs. & Principles of Physics II........4.0 (3) PHY 222L Probs. & Principles of Physics II Lab ...0.0 (2) PHY 222R Probs. & Prin. of Physics II Rec ......1.0 (2) Required prerequisite(s): PHY 221

*Corequisite(s):* PHY 222, PHY 222L and PHY 222R This course is a continuation of PHY 221. Topics include thermodynamics, waves, electricity, electric circuits, magnetism and optics. The development of conceptual understanding and problem-solving skills is emphasized. Computers are used for data acquisition and analysis. A recitation accompanies the lecture and lab. **Group 1 lab course.** 

Visit **www.nmc.edu/science-math** for detailed information.

# **PLS** Political Science

*Recommended prerequisite(s): Placement into ENG 111* This course provides a comparative analysis of political systems in developed and developing countries. Students learn about different forms of political organization as instituted and practiced in various countries. Students examine different methods of comparing political systems and learn to apply these methods in causal theories of political change. This course combines a focus on the basic structures of political systems with a thought-provoking analysis of the causes that give birth to those systems - thereby giving shape to the world in which we find ourselves today. Issues related to democracy, civil liberties, political rights, human rights, and economic development are analyzed throughout the course. **Group 1 course.** 

#### 

Required prerequisite(s): PLS 101 or PLS 211, either may be taken concurrently Recommended competencies: COMPASS placement into MTH 23 and ENG 11/111

This course examines American foreign policy, with a focus on the challenges the United States has faced since WWII. Students analyze the goals of policy-makers and the obstacles they encounter as they attempt to achieve those goals. Examples of issues that receive in-depth analysis include: terrorism and fundamentalism; foreign policy responses to recent trends of economic globalization; WMD, arms control and non-proliferation issues; the US invasions and occupations of Afghanistan and Iraq; a rising China and the challenges this presents to U.S. hegemony; and many others. This course uses political science models as it focus on case after case of real world events in U.S. foreign policy. **Group 1 course.** 

# PLU Plumbing Technology

#### 

Recommended competencies: COMPASS placement into MTH 23 and ENG 11/111 or co-enrollment in the recommended developmental Math and English course This course provides an introduction to plumbing. Through structured classroom and hands-on skill building, the student will learn the tools of the trade, plumbing safety, how to solder and braze copper tubing, piping skills and trade mathematics. **Group 2 course.** 

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Required prerequisite(s): PLU 101

Through structured classroom and hands-on skill building, the student will learn to work with copper pipe and fittings, castiron pipe and fittings, carbon steel pipe and fittings, corrugated stainless steel tubing, fixtures and faucets, drain waste and vent systems and water distribution systems. **Group 2 course.** 

#### 

#### Required prerequisite(s): PLU 105

Through structured classroom and hands-on skill building, the student will learn to read commercial drawings, hangers, supports, structural penetrations, and fire stopping, installation and testing DWV piping. **Group 2 course.** 

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Through structured classroom and hands-on skill building, the student will learn installation of roof, floor, and drain areas, types of valves, installing and testing water supply piping, installing fixtures, valves, and faucets, basic electricity, installing water heaters, fuel gas systems and servicing plumbing fixtures. **Group 2 course.** 

#### 

Through structured classroom and hands-on skill building, the student will learn sizing DWV and storm systems, sewage pumps and sump pumps, corrosive-resistant waste piping and compressed air. **Group 2 course.** 

# **PSY** Psychology

#### **PSY 211 Developmental Psychology**......**3.0 (3)** *Required prerequisite(s): PSY 101*

This course presents human development from conception to death including the historical and anthropological bases for studying development. The course includes hereditary factors as well as physical, social and emotional, linguistic, intellectual, and personality development. **Group 1 course**.



Required prerequisite(s): CD 202 or PSY 101

Recommended prerequisite(s): Placement into ENG 111 This course will provide an examination of the atypical child and his or her developmental needs, including the family. Areas covered will include characteristics, identification processes, methods for contributing to the child's healthy development and educational needs, community resources and referral procedures. The course will include the child with sensory, physical and speech impairments. The gifted child's development will also be explored. Group 1 course.

#### Required prerequisite(s): PSY 101

This course provides a presentation of the concepts, perspectives and terminology of major theorists in the field of personality psychology, as students explore the many psychological, physiological, social and cultural factors that affect personality development. Students are encouraged to evaluate personality theories in relation to current research and application. Group 1 course.

# PSY 223 Intro to Social Psychology ...... 3.0 (3)

Required prerequisite(s): PSY 101 or SOC 101 This course is an introduction to social psychology theory and research. It covers the individual in the social context including how we perceive, judge, and are influenced by others. Topics such as conformity, attraction, liking, prejudice, attitudes, aggression, helping behavior, and interpersonal power are covered from a social psychological perspective. Group 1 course.

#### 

Required prerequisite(s): PSY 101

Recommended prerequisite(s): Placement into ENG 111 Human Sexuality offers an introduction to all facets of the field, and involves discussions of theory, research, and practical information. The purpose of the course will be to develop a critical awareness of the dominant issues in the field and to refine the student's sense of sexual responsibility and integrity. This will be accomplished by exploring the biological, social, cultural, psy-

#### 

chological, and personal elements of sexuality. Group 1 course.

#### Recommended prerequisite(s): SOC 101,

#### placement into ENG 111

First, this course will provide the student with a broad introduction to the psychology of adjustment which investigates the processes involved in the dynamic interactions of the individual with his or her environment. Second, this course is designed to present procedures by which the student can harness the principles of learning and rational self-counseling in order to achieve personal goals. Group 1 course.

#### PSY 250 Abnormal Psychology...... 3.0 (3)

#### Required prerequisite(s): PSY 101

Recommended prerequisite(s): Placement into ENG 111 This course is designed to give students a working vocabulary of the basic concepts of psychopathology, to help them critically evaluate theories and therapies in psychopathology, to develop an awareness of their own attitudes toward abnormal behavior, and acquire knowledge of the variety of techniques for overcoming interpersonal problems and living emotionally healthy lives. Group 1 course.

# **RAM** Robotics and Automation

Required prerequisite(s): CIT 110, EET 103 This course provides an introduction to sensors, actuators, robotics and automation. Students will extend concepts from prior electronics and programming courses to design and build robotic and automated systems. Students will complete a design project including design, prototype, test, and release phases. This course will also expose students to contemporary topics in robotics research, applications, and contests. Note: This course is a "Bring Your Own Device" (BYOD) course. Students must have a Windows Laptop. Software is provided. Group 2 course.

# RAM 150 Robotics and Automation II ...... 3.0 (4)

Required prerequisite(s): RAM 120

This course is a continuation of Robotics and Automation I. Students will utilize more complex sensors, actuators, and interfaces to create automated solutions. Projects will feature distributed systems that communicate via the Internet, enabling remote sensing and control. Note: This course is a "Bring Your Own Device" (BYOD) course. Students must have a Windows Laptop. Software is provided. Group 2 course.



# SOC Sociology

#### 

*Recommended prerequisite(s): Placement into ENG 111* This course presents an introductory sociological analysis of causes, changes in, and attempts to effectively treat some of the major problems in contemporary American society. These include: hunger, environmental problems, poverty, crime and delinquency, family problems, and homelessness. Community involvement projects are encouraged. **Group 1 course.** 

#### SOC 211 Marriage & the Family......3.0 (3)

*Recommended prerequisite(s): SOC 101, placement into ENG 111* 

This course covers topics such as traditional and non-traditional families, love and intimacy, sexuality, marriage, parenting, family problems and aging. The concept of healthy human relationships in a partnership, and how to build and maintain them, is stressed. **Group 1 course.** 

# 

*Recommended prerequisite(s): PSY 101 or SOC 101* This course examines gender as a system of stratification. It approaches issues of gender in society from both a social, structural, and a social psychological perspective. Issues related to gender inequality in selected institutions such as economy, family, media, education, and politics are studied. **Group 1 course.** 

#### 

This course examines the sociology of crime and criminal law; the social psychology of criminal behavior; the sociology of punishment and correction. Social, economic, political and biological factors are considered while exploring classical, contemporary, and critical thought. Prevention and intervention of criminal behavior are emphasized as well as punishment and correction. **Group 1 course.** 

# SPN World Language - Spanish

#### 

SPN 202 is a continuation of SPN 201 and focuses on the application of the communication skills of reading, writing, listening, and speaking within cultural contexts. **Group 1 course.** 

#### SPN 227A Spanish for Environmental Mgmt.......3.0 (3)

Required prerequisite(s): 3-4 years of high school Spanish Corequisite(s): ENV 290 or instructor permission Recommended prerequisite(s): SPN 201

This course focuses on global environmental issues as an entry point for further development of Spanish conversational skills, technical vocabulary and cultural competencies. Through an exploration of current freshwater issues in a Latin American country, coupled with travel overseas, students will study relevant issues concerning environmental resource management, and engage in numerous community projects. **Group 1 course.** 



# SWK Social Work

#### 

In this class we will gain basic knowledge about the varying and diverse areas of social work including the health care systems, rural and urban settings, criminal justice systems, systems that work with the elderly, varoius private and public agencies and schools. We will explore and build an understanding of client populations who may be in need of social work services. In addition, we will assess our own experiences, interests and knowledge that may guide us in the field of social work. **Group 2 course.** 

#### SWK 170 Service Internship Orientation ...... 1.0 (1)

Recommended prerequisite(s): ENG 11/111 or ENG 111 Corequisite(s): SWK 121

Orientation and preparation for introductory internship experiences in social work areas. For example, introduction to use of supervision, supervisory evaluation, self-evaluation and varying agency structures and functions. Opportunities for internships will also be introduced. This course is done is class and seminar format. **Group 2 course.** 

#### 

Recommended prerequisite(s): ENG 11/111 or ENG 111, SWK 121, SWK 170

Introduction to types, purposes and stages of interviewing. Basic empathy skill development will be for observation, listening, non-verbal communications, rapport building, information giving and information gathering. Beginning training in recording and documentation. Emphases will be on self-monitoring and working with culturally diverse, oppressed or psychologically maladaptive clients. In addition, we will explore building relationships with clients that is focused on the strengths of the client. **Group 2 course.** 

#### 

Required prerequisite(s): SWK 121, SWK 170 Recommended prerequisite(s): PLS 101, placement into ENG 11/111 or ENG 111

This course explores the historical development of social welfare in the United States, how it has defined social services and implications of they have had on society today. It also reviews modern social welfare systems and the existing attitudes, philosophies and the implications of economic, political and cultural conditions. Varying major theories of behavior are also explored as they relate to social work and the clients in need of services. The course also explores the importance of social workers in social action through understanding the different political perspectives influencing the formation of welfare policy. **Group 2 course**.

Required prerequisite(s): SWK 121, SWK 170 Recommended prerequisite(s): SWK 211

This course helps to prepare students for the generalist practice in the field of social work. This is a field instruction course that students will engage in direct practice of social work education. Students will complete 120 hours in a human service agency. This placement will provide an opportunity to observe social workers while they work, as well as assisting in general service delivery under close supervision. Students must complete the 120 hours in one semester. **Group 2 course.** 

# **THR** Theater

**THR 151 Basic Acting**.....**4.0 (4)** This course is an introduction to basic acting technique. The human voice as the actor's tool is explored through basic vocal and physical warm ups, and basic stage improvisational techniques are introduced. The course further emphasizes an introduction to basic auditioning rules and approaches; stage monologues are selected and performed, and students select and perform two person scenes. **Group 2 course.** 

# **THR 152** Acting II**4.0 (4)**Recommended prerequisite(s): THR 151

This course further emphasizes warm-ups, both vocal and physical, as well as advanced stage improvisation to hone the actor's skill level. The course focuses on advanced scene work through the study and performance of two Shakespearean scenes. Each student will leave the course with two prepared monologues; one serious and one comic. The audition process and monologue preparation are further emphasized, as well as the director's art and the craft of playwriting. **Group 2 course.** 

#### **THR 211 Play Production**......**4.0 (4)** *Recommended prerequisite(s): THR 151, THR 152, may be taken concurrently*

This course emphasizes theory and practice of dramatic production demonstrated through the public presentation of a play. All students enrolled in the class will have the opportunity to act, as well as the chance to fill vital roles backstage in the areas of technical theater and stagecraft, as that semester's play is auditioned, cast, blocked, produced, and eventually performed. Students may enroll in play production four times for credit under numbers 211, 212, 213, and 214. To assure proper credit is received, please verify the 200 level theater course for which you are registering. **Group 2 course.** 



# VCA Visual Communications/Art

#### 

#### Recommended prerequisite(s): ART 121

This studio course introduces students to commercial and editorial illustration techniques using pencil, collage, color media, and pen & ink. Assignments will be similar to those of a working freelance illustrator, including book and magazine spot art, product & fashion illustration, and op/ed art. Group 2 course.

#### 

#### Required prerequisite(s): VCA 150

This class serves as an introduction to typographic history, letterforms, mechanics, terminology, and usage. Students will complete projects that lead them to an understanding of the fundamental and technical aspects of this abstract art as it relates to the field of visual communications as well as print and electronic media. **Group 2 course.** 

#### 

This class serves as continuation to typographic history, trends, display faces and grids with an emphasis on book typography, binding and structuring methods. Students will complete projects that lead them to an understanding of intermediate typography, current typographic trends and comparative analysis of typefaces that relate to the field of Visual Communications as well as print and electronic media. **Group 2 course.** 

#### 

Recommended prerequisite(s): CIT 100 or understanding of basic computing skills Recommended competencie(s): Basic keyboarding skills highly recommended. Use of the MacIntosh or Windows operated system required

Students' will learn Adobe Photoshop, a bitmap image manipulation tool used to create images for both print and the web. Students will learn how to incorporate color, use layers, create special effects, use filters and use the variety of selection techniques for proper image editing. Students will learn the basics of using a digital camera and scanner, color management, how to restore damaged images, automate tasks, and how to prepare files for print and digital media. **Group 2 course.** 

#### 

#### *Required prerequisite(s): VCA 127, VCA 150 Recommended Prerequisite(s): VCA 125*

This course's focus will be on creation of animation using both traditional methods and Adobe Flash software. Students will learn the basics of animation and storytelling, file management and organization, as well as interactive navigation using ActionScript, the programming language used in Adobe Flash. Students will also learn how to incorporate sound and video in projects and learn how to prepare their files for use on web sites. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 127 and VCA 150 or instructor permission

Recommended Prerequisite(s): VCA 125

This course will focus on creative website development and design including site planning, interactive navigation, information design theory, file management, and user experience. Basic principles of HTML, CSS, and Wordpress along with and introduction to Dreamweaver software will emphasize creative and utilitarian website construction. **Group 2 course.** 

#### 

or understanding of basic computer skills

In this course you will learn and practice the basics of Adobe InDesign, a desktop publishing tool used to create layouts for print. You will learn how to create, format, manipulate and link text, use style sheets, create single and multipage documents, use frames, color management, import and create graphics, use tables and prepare files for production. In this course you will also learn the basics of Adobe Illustrator, a vector based tool used to create images and layouts for both print and interactive environments. You will learn how to create and manipulate basic shapes with the pen and pencil tools, create gradients, work with type, use layers, create shapes, use fill and stroke, use transform tools, use text tools, use the pen tool, print and choose appropriate color tools for correlating applications. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 126 Recommended prerequisite(s): ENG 112 Corequisite(s): VCA 220

Through this course you will gain insight and an introduction to the theory of graphic design through practice in researching, brainstorming, creative problem solving, comping and production of two and three dimensional graphic designs, logo marks, and three dimensional packaging while embracing traditional and digital techniques and receiving constructive criticism of your work and practice. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 126 Recommended prerequisite(s): ENG 112 Corequisite(s): VCA 200

Through this course, students will gain insight and introduction to the theory of advertising design and art direction through practice in researching, brainstorming, creative problem solving, comping and production of print advertising, advertising campaigns, television story boards and product branding, while embracing traditional and digital techniques and receiving constructive criticism of work and practice. **Group 2 course.** 

#### 

VĈA 220

By the end of this course, students will have participated in two hands-on "real world" design projects in which you will act as writer, art director, designer, photographer or illustrator. Projects are for various local not-for-profit clients. You will learn all aspects of pre-press work, production and printing via field trips while also learning to work with clients and the self-driven responsibilities of independent work. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 200, VCA 220 or instructor permission

In this course you will excel in setting occupational/educational aspirations and offering/receiving constructive criticism of your work. You will design and produce a body of work for your portfolio, tailored to your individual goals, be it in Illustration, GraphicDesign, Motion Graphics or Art Direction. Progressive Visual Communications theory and practice will also be studied. **Group 2 course.** 

#### VCA 235 Visual Communications Portfolio ........ 3.0 (4)

*Required prerequisite(s): VCA 200, VCA 220* Students explore various methods of preparing professional portfolios, as well as the packaging and marketing of their portfolio works in preparation for further education and/or job interviews related to their career goals in visual communications. Along with the portfolio, each student prepares a resume, digital portfolio and considers other self-promotional pieces to complete the portfolio package. The emphasis of this course is that each student compiles a professional looking and complete portfolio package based on his/her occupational and educational goals. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 146

This course will focus on the advanced exploration of interactive navigation, animation and storytelling that is created for and exists on the web. Advanced Design theory, greater interactivity, file architecture, web loading, hosting and uploading for FLASH and more exposure to Motion software will emphasize creative and narrative language. Students should be self-motivated, this advanced section involves independent projects. **Group 2 course.** 

#### 

#### Required prerequisite(s): VCA 147

This course will focus on advanced creative website development and design including site planning, interactive navigation, information design theory, file management, and user experience. More developed principles of HTML, CSS, and Wordpress along with continuing work with Dreamweaver and Fireworks software that emphasizes creative and utilitarian website construction. Students should be self motivated since this advanced section involves independent projects. **Group 2 course.** 

#### 

Required prerequisite(s): VCA 127

Recommended prerequisite(s): VCA 125

A multisensory, theory driven exposure and exploration of time-based visual communication environments. The role of typography, image, sound, space, luminosity and narrative are assessed and used to create sequences of moving image. Students are exposed to tools, theories, aesthetics and techniques used in the time-based medium in a more advanced level using Final Cut Pro HD and Motion. Students should be self-motivated, this advanced section involves independent projects. **Group 2 course.** 

# 

*Recommended prerequisite(s): VCA 250 or instructor permission* 

A multisensory, theory driven continuation and exploration of time-based visual communication environments. The role of typography, image, sound, space, luminosity, and narrative are assessed and used to create sequences of moving image. Students are exposed to tools, theories, aesthetics and techniques used in the time-based medium in a more advanced level using Final Cut Pro HD and Motion. Students should be self-motivated, this advanced section involves independent projects. **Group 2 course.** 

#### VCA 290 Visual Communications Internship ...... 3.0 (4)

Required prerequisite(s): Students must have completed all VCA courses with a minimum 2.5 GPA and departmental approval. This course is required for the Associate of Applied Science degree in Creative Management in Art Direction. The purpose of the internship is to provide on-the-job experience for the student who wished to pursue a career in visual communications. The internship will be customized to meet the learning needs of the student and the job requirements of the sponsoring firms. Students spend 15 hours per week in this paid or non-paid, supervised on-the-job training experience. In addition to the required 180 hours in a graphic design business site, students participate in bi-weekly reports and weekly online discussion boards with instructor. Students must apply one month prior to the semester in which they will complete the internship.



# WPT Welding Process Technology

#### 

skills or transferring into a Welding degree program. Topics include oxyacetylene welding in the flat, horizontal and vertical positions; oxyactylene cutting, and oxyacetylene brazing. Students learn safety and theory as well as develop their proficiency in these operations. **Group 2 course.** 

#### WPT 120 GTAW (TIG) Welding I ..... 2.0 (3)

*Required prerequisite(s): WPT 100 or WPT 110* This course provides the student with the opportunity to learn and apply the theory of basic Gas Tungsten Arc Welding (GTAW) welding techniques on ferrous and non-ferrous metals in the flat and horizontal positions. **Group 2 course.** 

#### WPT 121 GTAW (TIG) Welding II ......2.0 (3)

#### Required prerequisite(s):WPT 120

This course provides students the opportunity to learn and apply welding techniques using the Gas Tungsten Arc Welding (GTAW) process on ferrous and non-ferrous metals on advanced joint designs and in the vertical position. **Group 2 course.** 

#### WPT 130 SMAW (Arc) Welding I ...... 3.0 (5)

This course is designed for students pursuing job skills or transfer into a Welding degree program. Students learn theory and application of safe Shielded Metal Arc Welding (SMAW) in the flat and horizontal positions. They develop skills with "fast freeze" and "low hydrogen" type electrodes. Topics include welding terminology, electrical theory as it relates to SMAW, weld defects and quality, and the American Welding Society SMAW filter material numbering system. **Group 2 course.** 

#### 

Required prerequisite(s): WPT 130

This course provides the student with advanced theory and application of Shielded Metal Arc Welding (SMAW) techniques in the flat, horizontal and vertical positions using "fast freeze" and "low hydrogen" electrodes. Topics include weld quality, inspection, power sources, and trouble shooting. **Group 2 course.** 

**WPT 140 GMAW (MIG) Welding I**.....**2.0 (3)** This course provides the student an opportunity to learn the theory and application of basic Gas Metal Arc Welding (GMAW) techniques on ferrous metals. **Group 2 course.** 

#### WPT 141 GMAW (MIG) Welding II.....2.0 (3)

Required prerequisite(s): WPT 140

This course provides students the opportunity to learn and apply safe welding techniques using the Gas Metal Arc Welding (GMAW) process on ferrous and non-ferrous metals on advanced joint designs and welding positions. **Group 2 course.** 

#### 

This course provides students the opportunity to learn and apply safe welding techniques using the Flux Cored Arc Welding (FCAW) process. **Group 2 course.** 

#### 

This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Shielded Metal Arc Welding (SMAW). **Group 2 course.** 

#### **WPT 160A Weld. Qualification Prep-GMAW**.....**2.0 (3)** *Required prerequisite(s): WPT 141*

This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Gas Metal Arc Welding (GMAW). **Group 2 course.** 

#### WPT 160B Weld. Qualification Prep-GTAW ...... 2.0 (3)

Required prerequisite(s): WPT 121

This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Gas Tungsten Arc Welding (GTAW). **Group 2 course.** 

#### WPT 160C Weld. Qualification Prep-FCAW ...... 2.0 (3)

Required prerequisite(s): WPT 142

This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Flux Cored Arc Welding (FCAW). **Group 2 course.** 

**WPT 160D Weld. Qualification Prep-Other**.....**2.0 (3)** This course provides experienced welders/students the opportunity to take the AWS welder qualification tests (other than GTAW, GMAW, SMAW, or FCAW) in specified processes on specified materials in specified positions. **Group 2 course.** 

#### 

WPT 141, WPT 142 This course provides students an opportunity to apply the process specific welding skills that they have previously mastered to complete fabrication and repairs projects. In addition to welding, students will learn shop metal identification, how to setup and operate shop metal prep and fabricating equipment as well as plan, sketch, order and prepare for a variety of projects. **Group 2 course.** 



# WSI Water Studies

#### **WSI 105 Intro to Freshwater Studies**......**3 (3)** *Recommended prerequisite(s): MTH 23; ENG 111 may be taken concurrently*

This course is designed to provide an exploration to the field of water studies, with specific focus on freshwater. The students will discuss the impact of water related challenges and opportunities in the context of the great lakes of the world. Focus will be given to the new and emerging career and educational pathways associated with water resources and their management. In addition to regular class lectures, invited experts from business, education and community organizations will introduce relevant topics of local and global significance including policy, law, sustainable development, history, engineering, health, and commerce. **Group 2 course.** 

#### 

Recommended competencies: Ability to work/learn aboard R/V Northwestern and in the field. Completion of MTH 111 and ENG 111 or equivalent COMPASS scores.

Advancements in Great Lakes research and monitoring techniques allow for an increased ability to access and assess remote locations through the use of enabling technologies and platforms including: Research Vessels, Remotely Operated Vehicles (ROV), SONAR systems (single beam, multibeam, scanning) and oceanographic buoy systems. Focus will be directed at understanding the basics of how each component is used and gain firsthand experience operating systems and collecting information. Field activities will take place in local water bodies, Grand Traverse Bay and onboard the R/V Northwestern. **Group 2 course.** 

#### WSI 210 Underwater Acoustics and Sonar ...... 3.0 (4)

#### Required prerequisite(s): MTH 111 Recommended prerequisite(s): PHY 105, placement into ENG 111

This course provides a foundation for the use of acoustics in the marine environment while focusing on best practices for underwater search, survey and visualization programs. Multiple sonar systems are presented and are representative of current industry equipment, operations and practices. Emphasis is placed on field applications where sonar platform, water depth and temperature, target range and size, acoustic frequency and object reflectivity/absorption have an effect on target detection, resolution and data accuracy. **Group 2 course.** 

#### 

*Required prerequisite(s): ENV 115 or GEO 115* This course builds upon the basics of GIS taught in ENV/ GEO 115 - Introduction to GIS, with a focus on basic spatial analysis techniques using standard and maritime/marine datasets. More advanced cartographic methods and spatial data management techniques are introduced using ArcGIS Desktop, Hypack, and other computer tools. **Group 2 course.** 

#### WSI 290 Freshwater Studies Internship ...... 1-3 (1-3)

Required prerequisite(s): ENV 105 or WSI 105

The internship in Freshwater Studies is a field experience for students interested in developing competencies to address significant water-related issues impacting our region and the world. Students engage in research activities with local and global community partners to collaborate in the implementation of best water management practices. The program is customized according to students' background and specific career goals. Activities may include monitoring water quality, identifying invasive species distribution, digital mapping and hydrographic surveying. **Group 2 course.** 

# NMC. Find it here.



# Northwestern Michigan College 2014 - 2015 Catalog









# **Student Handbook**

# Student Rights and Responsibilities / NMC Policies

# Student Rights and Responsibilities (Policy D-602.01)

The purpose of the Student Rights and Responsibilities statement is to define a student's basic rights within the college community, state what actions students may expect from the college to protect those rights, and explain the college's expectations of its student members, including the standards by which student behavior are measured. This statement describes unacceptable student behavior and outlines the procedures by which students are disciplined if they engage in unacceptable conduct. www.nmc.edu/about/policies/ board-staff/D-602.01.html

# **Academic Policies**

Northwestern Michigan College is committed to open access to higher education and to your academic success. Our intent is to offer support and remediation for students who are considered at risk of academic failure.

#### Attendance

Attendance is critical to student academic progress. Even though attendance expectations may differ from course to course, you are expected to be present, prepared, and be active participants in your classes. Students will receive a written attendance policy from the instructor at the first class meeting. A student who is repeatedly absent from class without good reason may be withdrawn from the course by the instructor.

#### **Credit for Prior Learning**

Students who have achieved competency in certain skill or course work areas may receive credit for classes or waivers of prerequisite classes. This competency could be gained through life, work, or military experience; vocational training at an area vocational, career or skill center; or completion of high school advanced placement courses. Assessment of proficiences may be demonstrated through the following options:

- AP (Advanced Placement) credit achieved through high school courses;
- CLEP (College Level Examination Program);
- ACE (American Council on Education) for veterans;
- Competency Assessment in some NMC courses;
- Course waiver;
- Articulation credit for work at the Traverse Bay Area Career Tech Center

Students who wish to pursue credit or waivers for competencies should go to **www.nmc.edu/records** or contact the NMC Registrar in the Records and Registration Office in the Tanis Building. Students wanting information or to register for the CLEP exam should call (231) 995-1360.

#### **Credit Equivalences**

An associate degree requires a minimum of 60 semester credits, or 96 quarter credits. A bachelor's degree usually requires a minimum of 120-128 semester credits, or 180-192 quarter credits. Thus, when credits are transferred from a college on the quarter system to a college on the semester system, a quarter credit is equivalent to two-thirds of a semester credit. For example, 30 quarter credits become 20 semester credits. No credits are "lost;" they are simply converted to a different unit. This may result, however, in some fractional credits. Obtain complete transfer information from a counselor.

#### **Adding Classes**

Courses are set up in sessions which vary by the number of weeks they meet (15-week, 8-week, 5-week, etc.). Students may add available courses up through the day before the session begins. Once the session begins, permission to add may be required from the Academic Chair or Office Manager (not the instructor). Not all academic areas will allow registration after the session has started.

#### **Dropping Classes**

Students must officially drop classes during the designated dates listed in the semester Registration Guide or online to obtain any refund or prevent receiving a grade at the end of the semester.

- Students dropping **all** of their classes must either drop courses online at **www.nmc.edu/selfservice** if there are no holds on the student's record. You may also complete an enrollment form in the Records and Registration Office, or mail or fax a letter to the Records Office at (231) 995-1956. Include name, NMC ID, semester and signature. The date the letter is received is the official date of the withdrawal.
- Students dropping some of their classes may do so online at **www.nmc.edu/selfservice** if no holds are present or in the Records and Registration Office.

If you wish to drop either some or all classes online and have a hold, call (231) 995-1049 for options. In most cases, the hold may be temporarily moved to allow you to drop.

Courses may be **dropped without record** through the add period of the session that the course is offered. Courses dropped after the add period and before the last 25 percent of the session will be **drop with record**. A grade of "W" (Withdrawn) will be assigned. This grade will not affect the NMC grade point average. Dropping a class is not permitted during the last 25 percent of the session in which the course is offered. It is the student's responsibility to notify their instructor(s) of the drop and be aware of any financial obligations.

#### Grades

#### STANDARD GRADING SYSTEM AT NMC:

- 4.0 outstanding
- **3.5** excellent
- **3.0** good
- **2.5** above average
- **2.0** average
- **1.5** below average
- **1.0** deficient
- **0.0** failed
- **S** satisfactory
- U unsatisfactory
- incomplete
- W withdrawn
- **FA** failed to attend
- AU audit
- **S/U** (satisfactory/unsatisfactory) may be given to designate the level of performance in courses which evaluate completion of specified competencies. (For designated courses only.)
- I (incomplete) may be given at the discretion of the instructor if it is believed that the student has a valid reason for not having completed the course work and can fulfill the requirements of the course during the next semester. An incomplete not made up by the end of the next semester automatically becomes a 0.0. Incompletes may be extended one additional semester at the discretion of the instructor.
- **W** (withdrawn) will be given to the student who officially withdraws from the class after the add period and before the last 25 percent of the session.
- **FA** (failed to attend)—may be given if a student registered for a course but never attended and did not officially drop. FA will not affect a student's GPA.
- **AU** (audit) can be issued at the time of registration upon full payment of tuition and fees if a student wishes to attend a class without receiving college academic credit or a grade. Changing from "credit" to "audit" may take place through seventy-five percent of the academic session. Changing from "audit" to "credit" must be completed during the add period. Dates can be found online or in the current Registration Guide.

#### GOOD STANDING

You are considered to be in academic good standing when you have a minimum overall grade point average of 2.0.

#### GRADE POINT AVERAGE

Grade point average (GPA) is a weighted average of grades. A grade for a course is multiplied by the credit hours for that course to obtain "points." Total points are then divided by total credit hours to determine the grade point average. A GPA calculator is available online. When a course is repeated, both the most recent grade and the previous grade will appear on the transcript (official academic record). However, only the last grade will be counted in the NMC cumulative GPA. Grades of S, U, I, W, FA, and AU are not used in the computation of grade point averages. Consult with the Advising Center if this concerns you.

#### DEAN'S LIST

Students who have achieved a semester grade point average (GPA) of 3.5 or higher qualify for the Dean's List (full-time is 12 or more credits, part-time is 6-11 credits). Each full-time student receives a congratulatory letter from the Vice President for Educational Services. Dean's List students will have their names listed in the lobby between the Biederman and Tanis buildings, and posted online. Students receiving an Incomplete grade (I) in the semester, will not be eligible for the Dean's List.

#### **GRADE POINT RE-EVALUATION**

Northwestern Michigan College offers you an opportunity to improve upon a cumulative grade point average by repeating a course or courses, or by petitioning for a grade point re-evalu-ation under special circumstances. These options provide you with the opportunity to achieve a cumulative grade point average that is truly representative of your capabilities. You may pursue this option by calling the Advising Center for petitions and further information: (231) 995-1040. Transfer institutions may or may not recognize GPA re-evaluation.

For more information on GPA re-evaluation, visit **www.nmc.edu/records** and click on "grades."

#### **Academic Probation**

Any student whose cumulative grade point average is below a 2.0 is considered academically at risk and will be placed on academic probation. The purpose of academic probation is to assure careful academic planning and referral to support services while the student attempts to improve his or her academic record.

# SUPPORT & INTERVENTION FOR STUDENTS ON ACADEMIC PROBATION

Any student who is on probation must meet with a counselor or academic advisor prior to registering for any semester or session until the status of probation is removed. This enables the student to build a realistic academic program and receive appropriate referrals to support services that afford the maximum possibility for success. Students who are on probation may not take more than 12 semester credits during fall/spring semester, or six credits during the summer session. The status of academic probation is removed when the student's cumulative grade point average becomes 2.0 or higher.

#### **Academic Suspension**

When a student has been on probation for two semesters and is unable to maintain a current grade point average of 2.0 or higher, that student will be suspended from academic enroll-ment for a period of one semester of the regular academic year (not including summer.) A student may appeal academic suspension to the Registrar in writing.

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#### REINSTATEMENT FOLLOWING ACADEMIC SUSPENSION

A student who has been academically suspended is encouraged to petition the Registrar for reinstatement when the waiting period is over if he/she feels that sufficient changes have occurred to enable academic success. This petition must be made in writing at least two weeks prior to the beginning of the semester for which the student is seeking re-entry.

#### **Grade Alert**

Learning is dependent upon regular feedback regarding student performance. Students and instructors are both responsible for this communication. Students achieving less than a 2.0 in any 15-week class may receive notification to their NMC email around the midpoint of the academic session encouraging them to contact their instructor.

#### **Repeating Courses**

Northwestern Michigan College offers you an opportunity to improve upon a cumulative GPA by repeating a course or courses. All courses and grades will appear on the transcript (official academic record); however, only the last grade will be counted in the cumulative grade point average. Most courses at NMC can be taken a maximum of three times. Exceptions are activity courses such as physical education and applied music. Although NMC allows a student to repeat a class up to two times, Financial Aid may have further restrictions and should be consulted.

#### Transcripts

Students who plan to attend another college or university will need to send an official transcript of their academic record to that college. Often new employers require an official copy of your transcript. A transcript is a list of the academic courses taken at NMC and the grades earned. Your **official** transcript will be sent to colleges or employers upon your written request. If you request the transcript be sent to you, it may not be considered **official**. Each request should include:

- **1.** Your name, permanent address, and NMC ID or social security number
- 2. Name and address where the transcript is to be mailed
- **3.** Your signature
- **4.** Your phone number
- **5.** \$5 for each transcript

Requests may be made online at **www.nmc.edu/selfservice** where you enter mailing address and pay online, in person, by mail or by fax (231) 995-1956. Fax requests will be honored if you include your charge card number (Visa, MasterCard or Discover) and expiration date to cover the transcript fee.

Transcripts may be faxed to a third party but may not be considered official. Contact the third party for confirmation. To protect the confidentiality of the student, telephone requests cannot be honored. You may also obtain a student copy of your transcript. The official transcript has an embossed stamp and the student transcript does not. Both the official and student transcript fee is \$5. Transcript requests can be completed only if all fees and obligations to NMC have been fulfilled. Current students may also go to **www.nmc.edu/registration** to view their transcript.

# **Inclement Weather Policy**

It is the policy of Northwestern Michigan College to maintain normal college operations on all regularly scheduled days, except in very rare cases when severe weather conditions prevent this.

It is further the policy of NMC that each staff member and student will make his or her own determination concerning attendance on unfavorable travel days.

Given unfavorable weather conditions, the college may choose to delay or close, in which case the following actions will be taken:

- For daytime classes, a decision to delay the opening of the college or close entirely will be communicated by 6 a.m.
- For evening schedules, delays or closings will be announced by 3 p.m. There is a possibility that NMC would cancel all day classes and hold evening classes.
- If the college delays opening, students should report to class at the designated opening time. If a student's class begins before the designated opening time, that class would be canceled unless one-hour of instruction remains after the designated opening time. Up-to-date information regarding class cancellations and college closures will be communicated on the 24-hour telephone line at (231) 995-1100.
- College delays or closures will be reported to area radio and television stations (a list of stations is available in the Office of Institutional Advancement) campus video monitors, public access channel, NMC's general information number (231) 995-1000, and online.
- College delays or closures will be reported via email to all faculty and staff, via email to all student email accounts, and via text message to those students who are subscribed to receive alerts on their cell phones.
- For weekend academic courses, the college closure/delay decision will first be enforced. If, on the other hand, a faculty member determined he/she cannot make it to campus for their particular class, the faculty member teaching the weekend course will update his/her voicemail greeting with the class cancellation information. Weekend students should then call their instructor's voicemail rather than the 24-hour telephone line.

# **Non-Discrimination Policy**

#### NOTICE:

Northwestern Michigan College is committed to a policy of equal opportunity for all persons and does not unlawfully discriminate on the basis of race, color, national origin, religion, disability, genetic information, height, weight, marital status or veteran status in employment, educational programs and activities and admissions. **www.nmc.edu/nondiscrimination** 

# **Harassment Policy**

Harassment of students and employees at NMC is unacceptable and will not be tolerated. Sexual harassment means unwelcome sexual advances and/or requests for sexual favors, and/or other verbal or physical conduct or communication of a sexual nature that creates an intimidating, hostile, or offensive environment for the student.

Upon receipt of any report or complaint of alleged harassment, NMC will promptly investigate. NMC will take reasonable measures to treat complaints discreetly and respect the personal privacy rights of the person making the complaint and any accused party. Upon conclusion of the investigation, appropriate action will be taken. For additional information, contact the Dean of Enrollment Management and Student Services in the Admissions Office, Tanis Building, (231) 995-1039. Employees may contact Human Resources, Tanis Building, (231) 995-1025. Go to www.nmc.edu/policies to view all NMC policies.

# **Right to Know**

In 1990, Congress passed into law the Student Right-to-Know and Campus Security Act. The legislation is designed to provide better consumer information to students and their families by requiring institutions of higher education to compile and report completion or graduation rates, job placement statistics, crime statistics, as well as general information about the college. Job placement statistics, crime statistics, and general information about the college is available in the Registration Guide and the student newspaper, or may be obtained in the Admissions Office, Tanis Building, (231) 995-1054. For completion or graduation rates contact the NMC Registrar at (231) 995-1058. All Board of Trustee and Student Government meetings are open to students.

#### **Campus Security & Safety Policy**

The safety of students, faculty, staff and visitors is of vital concern to Northwestern Michigan College. Everyone in the campus community is involved in creating a safe environment and is encouraged to report all safety concerns by calling campus security, (231) 883-9099. Emergency outdoor phones are identified by a blue light; all incidents will be documented and investigated. NMC has a staff of campus security personnel who work closely with the Traverse City Police Department. On a regular basis, information and presentations are made available to students and employees on issues of importance to campus safety. The campus safety report is published in the Registration Guide each semester and is in compliance with the Student Right-to-Know and Campus Security Act. Visit **www.nmc.edu/safety** to view a daily crime log. Click on crime log.

#### **Campus Safety Report**

Mission: to establish a system of communication and response to provide for the safety of students and employees.

A. Report Procedures: To report criminal actions, emergencies, or suspicious situations, call: 

Emergency outdoor phones are identified by a blue light and can be used to make on-campus calls. To make an emergency call, press the red button, state your location and the situation. Police personnel will respond.

- B. Access to Campus Facilities: All campus buildings are open from 7 a.m. to 10 p.m., Monday through Friday, and at other times on weekends depending on need. Residence halls are open from 7 a.m. to 12 midnight every day. Residents have keys and guests are required to register with the residence hall staff after midnight. All guests must be escorted by the resident they are visiting.
- C. Authority of Institutional Security Personnel: The NMC Campus Security personnel have the authority to confront the individuals related to an incident, require identification, and when necessary, contact the Traverse City Police Department. Officers keep a daily record of activities and all incidents are promptly reported to the Campus Liaison Officer.
- D. Information Programs: On a regular basis students and employees receive information on campus security and crime prevention and are invited to attend presentations on such subjects as sexual assault and rape; fire prevention; crime prevention; bomb threats; and alcohol and drug abuse prevention.
- E. Occurrence Statistics: The NMC Campus Security and Safety Department has compiled these statistics for incidents on NMC's four campuses from January 1, 2012 to December 31, 2012. Go to www.nmc.edu/security to view statistics for the past three years.

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- **O** = On Campus
- **R** = On Campus Residential
- **N** = Non-Campus Property

# **Offenses On Campus** Murder / Non Negligent......0 0

Negligent Manslaughter	0	0
Sex Offenses: Forcible	1	0
Sex Offenses: Non forcible	0	0
Robberv0	0	0
Aggravated Assault	0	0
Burglary	Ő	0
Motor Theft	Ő	0
Arson	Ő	0
Liquor Law Violations: Referred for action0	14	0
Liquor Law Violations: Arrest0	17	0
Drug Law Violations: Referred for action	14	0
Drug Law Violations: Arrest	1	0
Illegal Weapons Violations: Referred for action0	0	0
Illegal Weapons Violations: Arrest	Õ	0
Hate Crime 0	Ő	0
	5	0

The Michigan State Police make available the list of registered sex offenders at **www.michigan.gov/msp** select "Michigan Sex Offender Registry."

This information is published in compliance with the Student Right-to-Know and Campus Security Act, Public Law 101-542, as amended by the Higher Education Technical Amendments of 1991, Public Law 102-26.

#### **Drug-Free Learning Environment Policy**

It is the intent of Northwestern Michigan College to provide a drug-free workplace and learning environment for students, faculty and staff. Furthermore, NMC intends to comply with the provisions of the Drug-Free Schools and Communities Act of 1989. All students, employees, and visitors are expected to observe all federal, state and local laws and college regulations governing the use and possession of alcohol and illicit drugs. All students, employees and visitors are specifically forbidden to use or possess alcoholic beverages, or to be under the influence of any controlled substance while on college property (except as provided by policy for use of alcohol on campus) or violate conditions of Controlled Substance Act.

#### **Tobacco-Free Policy**

In the interest of providing a safe, clean and healthy environment for students, employees and visitors, NMC has prohibited smoking on all campuses.

#### **Student Sexual Assault Policy**

I. Legal and Behavioral Definition of Sexual Assault Sexual assault is any unwanted sexual contact resulting from force, threat, or coercion, or when the victim is mentally incapacitated or physically helpless. State of Michigan statutes will be the guide in defining sexual assault and are available in the office of the Coordinator of Campus Security.

#### II. Reporting Sexual Assault

The following campus offices may be contacted to report a sexual assault:

Vice President of Enrollment Management

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and Student Services	(231) 995-1039
Housing Office	(231) 995-1408
Personal Counseling	(231) 995-1232
Student Health Services	(231) 995-1256
Local law enforcement	
Campus Security	(231) 883-9099

The option of reporting to a supervisor in any discipline or department is also available.



#### **Family Educational Rights & Privacy Act**

The Family Educational Rights and Privacy Act (FERPA) helps protect the privacy of student records. The Act provides for the right to inspect and review educational records, the right to seek to amend those records and to limit disclosure of information from the records. Institutions may disclose information on a student without violating FERPA through what is known as "directory information." Directory information includes the student's name, address, telephone number, e-mail address, date and place of birth, major field of of study, participation in officially recognized activities, enrollment status, dates of attendance, degrees and awards received. Questions about student records may be directed to the Registrar. Go to **www.nmc.edu/records** for more information.

#### **Privacy Statement**

In order to improve the instruction offered at Northwestern Michigan College and to meet the requirements of the Carl D. Perkins Vocational and Technical Education Act, Section 113 and the Workforce Investment Act of 1998, Section 122, we will be using your Social Security Number in order to compile summary reports. Section 113 of the Carl D. Perkins and Technical Education Act, 20 USC 2323, and section 122 of the Workforce Investment Act of 1998, 29 USC 2842, requires Northwestern Michigan College and the State of Michigan to assess the effectiveness of vocational and technical education programs aimed at training, placement, and retention of students in employment. Although these laws require that performance reports be compiled based on wage record information, neither law requires students to give their social security numbers (SSN) to the college.

Northwestern Michigan College reports currently enrolled student status to the National Student Clearinghouse each semester. This information is provided to assist students to defer repayment of student loans during the time a student is enrolled. Information is also provided to verify degrees earned and may be used by potential employers who contact the National Student Clearinghouse. Students may access the Clearinghouse website through NMC's secure website to obtain verification of their student status to be used for insurance purposes.



Northwestern Michigan College 2014-2015 Catalog









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Glen Anderson 1959-85 Norman Averill 1966-96 Stephen Ballance 1975-00 Pauline Baver 1951-75 Elaine Beardslee 1963-94 Walter Beardslee 1951-85 Jay Beery 1981-12 Joan Berg 1977-00 Lyle Bradford 1968-88 Robert Buttleman 1970-06 Larry Buys 1970-01 Elizabeth Carden 1970-00 Larry Carps 1971-01 **Richard Cookman** 1970-00

Helen Core 1952-74 Sharon Dean 1965-92 Joseph Dionne 1971-06 Kathleen Donnelly 1961-85 David Donovan 1971-01 Sallie Donovan 1975-06 William Faulk 1965-01 Adam Gahn 1963-01 Ernest Gaunt 1952-77 **Richard Gertz** 1968-88 Richard Goerz 1970-00 Michele Grooters 1977-01 Jill Hinds 1979-04 Karen Howie 1987-10 Constance Jason 1980-12 Dianne Keelan 1974-01 Francis Kullman 1968-96 John Leishman 1968-94 Loretta Lockman 1964-84 William Long 1965-88 David Loveland 1973-94 Keith MacPhee 1962-96 Kenneth Marek 1968-01 Kenneth Masck 1975-02 Michael McIntosh 1970-04 **Richard Minor** 1972-00 Hettie Molvang 1974-94 Henry Morgenstein 1971-00 Arlo Moss 1962-88 Peter Nelson 1964-88 Ray Niergarth 1979-10 Mary Norris 1982-12 Harry Oliver 1958-89 Jack Ozegovic 1968-89 Iohn Pahl 1966-13 **Richard** Pascoe 1966-88 Anne Patrick 1984-07 Mark Puchala 1986-12 Joseph Rogers 1955-84 Kenneth Rose 1968-00 Walter Ross 1972-97 Robert Rudd 1963-98 William Scharf 1964-91 Maureen Schneider 1985-06 William Shaw 1964-94 Jacqueline Shinners 1989-10 1957-95 Allison Shumsky Terry Sievert 1982-12 William Skinner 1961-88 James Spenceley 1957-80 Frederick Tank 1966-07 John Tanner 1974-95 Roberta Teahen 1975-01 Roy Terdal 1964-94 David Terrell 1969-07 Jacqueline Tompkins 1955-84 Martin Trapp 1988-11 David Vermetten 1962-96 Paul Welch 1964-87 Lila Wilkinson 1951-74 Jerry Williams 1970-05

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# Northwestern Michigan College 2014-2015 Catalog





**Glossary & Index** 

# Glossary

# Academic Advising

The process by which faculty members assist students with course selection and career advisement; students are assigned to an advisor based on their program of study.

#### Accreditation

Recognition that the college or a college program has met standards or requirements set up by a governing organization.

#### Admission

Acceptance of an applicant for enrollment in the college.

#### Articulation

The process of identifying the transferability of NMC courses to other colleges and universities.

#### **Associate Degree**

A degree issued to a student who has completed a prescribed curriculum/program of courses totaling a minimum of 60 semester credits, generally completed in two years of full-time attendance; students earn an Associate of Science and Arts, Associate in Applied Science, or Associate Degree in Nursing, depending on their area of emphasis.

#### Audit

To enroll in an academic course on a non-credit basis; all regular fees and charges apply.

# **Baccalaureate Degree**

A degree issued to a student who has completed a prescribed curriculum/program of courses totaling 120 to 128 semester credits, generally completed in four years of full-time attendance.

#### Catalog

A college's official publication outlining general information, requirements for admission, degree and certificate programs, special services, course descriptions, and faculty/staff listing.

# **Certificate Program**

A prescribed curriculum/program of courses in a job specialty area which includes some basic education, designed as preparation for immediate employment; requirements for certificates vary considerably and details are found in this catalog.

#### COMPASS

An assessment of academic skills given to new students who are pursuing certificate or degree programs or who wish to enroll in English or math; the results are used by advisors in course advisement.

#### Corequisite

An additional course or instructional experience which is required to be taken simultaneously with certain courses, such as a science lab which may be required to be taken with a science lecture course.

#### **Counseling**, Personal

Assistance which students may receive from the Counseling Center regarding personal issues.

#### Credit

A value measurement assigned to academic classes; earned credits certify that a student has successfully completed a course of study.

#### Curriculum

A group of courses offered by a school or college; a group of courses required for a specific major or program at a school or college.

#### Drop/Add

The official procedure for dropping or adding classes to a student's schedule, accomplished by filing a "drop/add" form.

#### Elective

A course which a student may choose to take from a number of alternative courses in order to fulfill a program requirement.

#### **Faculty Advisor**

A faculty member who assists students with decisions about programs of study and courses.

#### Fees

Charges assessed to students other than tuition charges.

#### **Financial Aid**

Various forms of financial assistance to help pay college costs (see Grants, Loans, and Scholarships).

#### GPA

Grade Point Average. Students taking academic classes for credit are assigned a grade which is equal to a certain number of points: A = 4., B = 3., C = 2., D = 1., and E = 0. Grade Point Average is determined by the number of grade points earned divided by the number of credit hours completed.

#### Grant

A monetary award given to a student based on financial need; a grant does not have to be repaid.

#### Honors

A program at NMC through which students may earn honors credit by 1) taking special honors classes and/or 2) taking regular classes for honors credit by making arrangements with individual instructors.

#### In-District

A designation identifying the residency status of a student who lives in Grand Traverse County and pays NMC's lowest general tuition.

#### In-State

A designation identifying the residency status of a student who lives in a Michigan county other than Grand Traverse and pays higher tuition, also called "Out-of-District."

#### **Independent Study**

Individual in-depth study on a special subject under the guidance of a faculty member.

#### **Liberal Arts**

A curriculum which ranges across the broad field of human knowledge, including communications, humanities, social sciences, mathematics and the sciences.

#### Loan

A monetary award given to a student from a lender (college, bank, savings and loan, credit union) based on financial need; loans must be repaid.

#### Non-credit

Courses which do not qualify as graduation requirements, such as developmental or specific topic courses; completion of these courses is recorded on a student's permanent record as a "Q" (qualified) or as a "NQ" (not qualified), but these grades are not part of a student's grade point average.

#### **Occupational Studies**

A curriculum which provides career-specific courses as well as core education courses, designed to prepare graduates for immediate entry into the workforce.

#### Orientation

A required program for all new NMC students which features an opportunity to become acquainted with campus resources and policies while registering for the first semester of NMC classes.

# **Out-of-District**

A designation identifying the residency status of a student who lives in a Michigan county other than Grand Traverse and pays higher general tuition, also called "In-State."

# Out-of-State

A designation identifying the residency status of a student who lives outside of Michigan and pays NMC's highest general tuition.

# **Permanent Record**

A listing of each student's academic history maintained by NMC's Records Office; these records are confidential.

# **Postsecondary Education**

Education beyond the high school level.

# Prerequisite

Requirements which must be met or courses which must be successfully completed prior to enrolling in a specific course or program.

# Program

A planned curriculum in a field of study which includes a list of specific requirements.

# Readmission

The process of officially re-entering college at registration time for students who have been away from NMC for one or more semesters.

# Registration

The process of officially enrolling in a course(s) and paying tuition.

#### Residency

The official home address of a student which is used to determine the tuition rate charged; residency classifications are In-District, In-State, and Out-of-State.

#### Scholarship

A monetary award based on academic ability and/or financial need and/or a donor's specific preferences; scholarships do not have to be repaid.

# Semester

An academic session lasting approximately 15 weeks.

# Service Area

The five-county area from which NMC primarily draws its students: Antrim, Benzie, Grand Traverse, Kalkaska, and Leelanau.

# Session

The number of weeks a course meets (15 weeks, 8 weeks, 5 weeks, etc.) during a semester.

# Transcript

A copy of a student's permanent record (grades) available upon written request by a student to be released to a third party from NMC's Records Office.

# Tuition

The monetary charge a student must pay at registration which typically equals the number of contact hours with the instructor multiplied by the student's tuition rate, which is based on his/her residency status.



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