

DISCOVER

Schoolcraft

2013–14 catalog & student handbook



Accreditation

Schoolcraft College is accredited by The Higher Learning Commission of the North Central Association, 30 North LaSalle, Suite 2400, Chicago, IL 60602-2504; phone 800-621-7440; fax 312-263-0456 or access the Commission's website at www.ncahigherlearningcommission.org.

Schoolcraft has the following programs that have state and national approval and accreditation:

- The Children's Center is accredited by the National Association for the Education of Young Children (NAEYC). For more information regarding accreditation, call 800-424-2460.
- The criminal justice associate degree with academy program is certified by the Michigan Commission on Law Enforcement Standards (MCOLES). For more information regarding certification, call 517-322-1417.
- The culinary arts program is certified by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). For more information regarding certification, call 904-824-4468.
- The emergency medical technology program is approved by the Michigan Department of Community Health, Bureau of Health Policy Planning Access EMS and Trauma Systems section. For more information, call 517-335-1825.
- Fire Technology Fire Fighter 1 and 2 and the fire academy are certified by the Michigan Office of Fire Fighter Training. For more information regarding certification, call 616-447-2689.
- The health information technology associate degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). For more information, contact CAHIIM at www.cahim.org.
- The medical assisting certificate program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Medical Assisting Education Review Board (MAERB). For more information regarding accreditation, call 727-210-2350.
- The nursing associate degree and practical programs are accredited by the National League for Nursing Accrediting Commission (NLNAC). For more information regarding accreditation, call 404-975-5000.

It is the policy of Schoolcraft College that no person shall, on the basis of race, color, national origin, gender, age, marital status, creed or disability, be subjected to discrimination during or be excluded from participating in or be denied the benefits of any program or activity or in employment.

Any questions concerning the application of, or grievances for, Title IX of the Education Amendments of 1972, which prohibits discrimination on the basis of sex, and Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, creed, color, or national origin should be directed to:

*Educational Programs & Activities:
Cheryl M. Hagen
Vice President of Student Services
Schoolcraft College
18600 Haggerty Road
Livonia, MI 48152-2696
734-462-4577 or chagen@schoolcraft.edu*

*Employment:
Cindy Koenigsknecht
Executive Director of Human Resources
Schoolcraft College
18600 Haggerty Road
Livonia, MI 48152-2696
734-462-4405 or ckoenigs@schoolcraft.edu*

Any questions concerning the application of, or grievances related to, Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap, or the Americans with Disabilities Act of 1990, which requires reasonable accommodation to be provided to disabled persons, should be directed to:

*Glenn Cerny
Vice President and Chief Financial Officer
Schoolcraft College
18600 Haggerty Road
Livonia, MI 48152-2696
734-462-4416*

Individuals who feel their rights have been misused in relationship to the provisions of equal opportunity at Schoolcraft College can contact the appropriate persons listed above.

DISCOVER

Schoolcraft

Discover your future at Schoolcraft College! *Successful Student Checklist*

- ☐ **Visit our campus.** Sign up online at www.schoolcraft.edu/tour to schedule a guided campus tour. You also can view a virtual tour at www.schoolcraft.edu/virtualtour.
- ☐ **Apply for admission.** Complete an application for admission online at www.schoolcraft.edu. If you need assistance, contact the Answer Center Helpline at 734-462-4426.
- ☐ **Submit transcripts.**
 - **First Year Students.** Send your high school transcripts and/or GED scores to the Student Records office or fax to 734-462-4506.
 - **Transfer Students.** Request your official college transcripts to be sent directly to the Student Records office from the transfer institution.
- ☐ **Submit test scores or take a placement test.** This helps in determining appropriate course placement in mathematics, reading and writing.
 - **First Year Students.**
ACT/SAT (ACT Code 2070, SAT Code 1764). Send your scores to the Student Records office if taken within the last three years.
OR
Take a placement test. Contact the Testing Center at 734-462-4806.
 - **Transfer Students.** College transfer credits may exempt you from placement testing. Contact the Counseling and Academic Advising office at 734-462-4429.
- ☐ **Apply for financial aid and scholarships.**
 - **Complete the Free Application for Federal Student Aid at www.fafsa.gov; use Schoolcraft College code 002315.**
FAFSA is used to determine eligibility for all need-based and non-need-based federal and state grants, loans and work-study.
 - **See a list of available scholarships at www.schoolcraft.edu/aid.**
- ☐ **Participate in orientation.** Go to www.schoolcraft.edu/orientation and sign up to attend an on-campus orientation or complete the online version. You will discover a wide range of services and resources available to support your success.
- ☐ **Meet with an academic advisor.** Explore your options, create an educational plan and select your classes. Either walk in to the Counseling and Academic Advising office or schedule an appointment at 734-462-4429.
- ☐ **Register for classes.** Information about the registration process, including important deadlines, can be found at www.schoolcraft.edu/registration. Register online at <https://webadvisor.schoolcraft.edu>.
- ☐ **Pay for classes.** The college accepts cash, checks, money orders, VISA, MasterCard, Discover and debit cards. Payment can be made online or in person at the Cashier's Office. The deadline for payment of tuition and fees varies by semester. Tuition can also be paid in installments if you enroll in our tuition payment plan. For information on payment deadlines and our tuition payment plan see www.schoolcraft.edu/registration.
- ☐ **Get your Student ID.** Available for free at the Registration Center. Please bring a copy of your schedule and another form of photo identification for verification.
- ☐ **Buy books.** Purchase at the bookstore or online at www.schoolcraftbooks.com.

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DISCOVER Schoolcraft

Welcome to Schoolcraft College

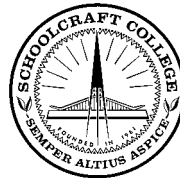
You have selected one of the finest colleges in the Midwest.

Schoolcraft College was established more than fifty years ago, on October 24, 1961, by the people of five contiguous communities to create an opportunity for you to grow intellectually and to strengthen your economic independence. We share a common goal; we want you to succeed.

Schoolcraft continues to be an inviting environment. We believe that it would be difficult to find faculty and staff more willing to assist you, an array of services more comprehensive, or a more technologically-equipped college anywhere. The totality of the experience creates your best opportunity for success.

This is the place to develop, refine and use the tools of knowledge. This is a place to learn and enjoy the experience.

Conway A. Jeffress, Ph.D.
President



Mission

Schoolcraft is a comprehensive, open door, community-based college. The mission of the College is to provide a transformational learning experience designed to increase the capacity of individuals and groups to achieve intellectual, social and economic goals.

Core Purpose

Everything Schoolcraft College does, from educational offerings and campus life to its role as a community center, is geared toward fulfilling the institution's core purpose: To increase the intellectual and economic capacity of the individuals, corporations and communities it serves.

Board of Trustees



Brian D. Broderick
Chair



Carol M. Strom
Vice Chair



James G. Fausone
Secretary



Joan A. Gebhardt
Treasurer



Gretchen Alaniz
Trustee



Terry Gilligan
Trustee



Eric Stempien
Trustee

The Board of Trustees is a group of seven members, elected by the voters of Schoolcraft Community College District to serve for six-year terms. The authority of the Board of Trustees is established by the state legislature through the Community College Act. The Board is the policy-making body for the college.

Foundation Board of Governors



**Schoolcraft
College**
FOUNDATION

The Schoolcraft College Foundation was founded in 1966 as a non-profit corporation dedicated to supporting the core values of Schoolcraft College, specifically the belief

that higher education should be accessible to the greatest number of students. With the support of its many donors, the Foundation provides student scholarships and grants for faculty and staff to develop new programs. The Foundation is led by a Board of Governors comprised of civic, business, and community leaders drawn from the community served by the college.

Front row: Linda Besh, John Elkins, Mary Ellen King, Kristina Mayer, Rebecca Himm, Craig Bowles.

Back row: Conway Jeffress, John Allie, Paul Serwinek, Wayne Glass, Paul Anderson, Jr., Guy Gehlert, Charles McIlhargey, Ray Friedrich

Not pictured: Gretchen Alaniz, Dana McAllister Armenteros, Julie Carrigan, Joseph Corriveau, Gary Gabel, Ryan Jenner, Elizabeth Johnson, Beth Kohler, Thomas Marek, Jeff McCarthy, John Santeiu, Jr., Thomas Steele, Stephanie Squires, John Tomey, Frank Winters

Schoolcraft Development Authority

The Schoolcraft Development Authority was established by Schoolcraft College to direct college land development activities. The Board of Directors is composed of ten members.

Glenn Cerny	President
Robert R. Nix II	Vice President
James Polkowski	Secretary/Treasurer
James G. Fausone	
James B. McKeon	
Hon. Lita M. Popke	
Jim Ryan	
Carol M. Strom	
Conway A. Jeffress	Ex-Officio
Janine Gillow	Recording Secretary

Schoolcraft College Academic Calendar

2013–2014

	FALL 2013					WINTER 2014					SPRING 2014		SUMMER 2014
Class duration	15 weeks	first 12 weeks	first 7 weeks	second 12 weeks	second 7 weeks	15 weeks	first 12 weeks	first 7 weeks	second 12 weeks	second 7 weeks	12 weeks	7 weeks	7 weeks
Classes begin	Aug. 28	Aug. 28	Aug. 28	Sept. 18	Oct. 23	Jan. 6	Jan. 6	Jan. 6	Jan. 27	Mar. 10	May 5	May 5	June 30
Last day of classes	Dec. 16	Nov. 19	Oct. 15	Dec. 15	Dec. 16	April 28	April 7	Feb. 23	April 27	April 27	July 28	June 23	Aug. 17
Final grades available	Dec. 20	Nov. 23	Oct. 19	Dec. 20	Dec. 20	May 2	April 11	Mar. 7	May 2	May 2	Aug. 1	June 24	Aug. 22
Financial Aid dates: submit FAFSA deadline	May 1					Sept. 1					Jan. 1		Mar. 1
financial aid file completed	July 1					Nov. 1					Mar. 1		May 1
purchase books in campus bookstore	Aug. 12–Sept. 20					Dec. 16–Jan. 31					April 28–May 16		June 23–July 14
Graduation ceremonies	n/a					May 3: General commencement ceremony					n/a		n/a
Student holidays— <i>No classes. Most on-campus services are not available.</i>	Sept. 2: Labor Day Nov. 28–December 1: Thanksgiving Holiday Dec. 23–Jan. 1: Holiday Break					January 20: Martin Luther King Day February 24–March 2: Mid-Winter Break— <i>No classes.</i> <i>Most on-campus services ARE available.</i> April 20: Easter					May 26: Memorial Day July 4: Independence Day Holiday		

Where to go for Assistance

College website: www.schoolcraft.edu

Livonia Campus: 734-462-4400

Radcliff Center, Garden City: 734-462-4770

Public Safety Training Complex: 734-266-4639

Academic Advising

www.schoolcraft.edu/counseling

Counseling and Academic Advising,

McDowell Center 734-462-4429

Email counseling@schoolcraft.edu

Academic Records

Student Records, McDowell Center 734-462-4677

Email screcord@schoolcraft.edu

Academic Standing, Probation, Dismissal

www.schoolcraft.edu/counseling

Counseling and Academic Advising,

McDowell Center 734-462-4429

Email counseling@schoolcraft.edu

Adding, Dropping, Changing or Withdrawing from a Course

www.schoolcraft.edu

Online add and drop... <https://webadvisor.schoolcraft.edu>

Registration Center, McDowell Center 734-462-4426

Email registration@schoolcraft.edu

Admission to the College

www.schoolcraft.edu

Online <https://webadvisor.schoolcraft.edu>

Admissions and Welcome Center,

McDowell Center 734-462-4426

Email admissions@schoolcraft.edu

Athletics

www.schoolcraft.edu/athletics

Athletics Office,

Physical Education Building 734-462-4804

Books & Classroom Supplies

www.schoolcraftbooks.com

Livonia Campus Bookstore 734-462-4409

Garden City Radcliff Center Bookstore

Room 130 734-462-4778

Email books@schoolcraft.edu

Campus Security Police

www.schoolcraft.edu/safety

Livonia, Service Building 734-462-4424

Garden City Radcliff Center 734-462-4400 ext. 6424

Campus Tours

www.schoolcraft.edu/tour

www.schoolcraft.edu/virtualtour

Livonia Campus 734-462-4683

Garden City Radcliff Center 734-462-4786

Email recruitment@schoolcraft.edu

Career Information

www.schoolcraft.edu/ctc

Career Services, McDowell Center 734-462-4421

Email ctc@schoolcraft.edu

Catalogs

www.schoolcraft.edu/publications

Admissions and Welcome Center,

McDowell Center 734-462-4426

Email admissions@schoolcraft.edu

Change of Name or Address

www.schoolcraft.edu/registration

Registration Center, McDowell Center 734-462-4426

Email registration@schoolcraft.edu

Clubs; Organizing or Joining

www.schoolcraft.edu/sao

Student Activities Office,

VisTaTech Center, Waterman Wing 734-462-4422

Email sao@schoolcraft.edu

Child Care Services

www.schoolcraft.edu/services/childcare

Children's Center,

South Parking Lot, Livonia Campus 734-462-4442

Computer Use—Academic

Livonia Campus, McDowell Center, Room 100

Garden City Radcliff Center, Room 415

Bradner and Radcliff Center Libraries for research

Phone 734-462-HELP (4357)

Computer Use—Wireless Internet Access

<http://faq.schoolcraft.edu>

Continuing Education and Professional Development

www.schoolcraft.edu/cepd

Continuing Education Center 734-462-4448

Email CEPD@schoolcraft.edu

Counseling Services

www.schoolcraft.edu/counseling

Counseling and Academic Advising,

McDowell Center 734-462-4429

Email counseling@schoolcraft.edu

Disability Support Services

www.schoolcraft.edu/ctc

Disability Support Services Office,

McDowell Center 734-462-4421

Email ctc@schoolcraft.edu

Distance Learning Online Courses

www.schoolcraft.edu/dl

Distance Learning Office,

McDowell Center 734-462-4532

Email dl@schoolcraft.edu

Dual Enrollment

www.schoolcraft.edu/admissions

Admissions and Welcome Center,

McDowell Center 734-462-4426

Email admissions@schoolcraft.edu

Financial Aid

www.schoolcraft.edu/aid

Student Financial Services Office,

McDowell Center 734-462-4433

Email finaid@schoolcraft.edu

Graduation***Applying to graduate***

www.schoolcraft.edu/counseling
 Counseling and Academic Advising,
 McDowell Center 734-462-4429
 Email counseling@schoolcraft.edu

Commencement ceremony

www.schoolcraft.edu/graduation
 Student Records, McDowell Center 734-462-4677
 Email srecord@schoolcraft.edu

Hybrid Courses

www.schoolcraft.edu/hybrid
 Phone 734-462-4525
 Email hybrid@schoolcraft.edu

I.D. Cards

www.schoolcraft.edu/admissions
 Registration Center, McDowell Center 734-462-4426
 Email registration@schoolcraft.edu

International Student Services

www.schoolcraft.edu/admissions
 International Student Advisor,
 McDowell Center 734-462-4400, ext. 5203
 Email scisq@schoolcraft.edu

Job Opportunities***Student on- and off-campus employment***

www.schoolcraft.edu/ctc
 Career Services, McDowell Center 734-462-4421
 Email ctc@schoolcraft.edu

Human Resources

www.schoolcraft.edu/hr
 Human Resources, Grote Center 734-462-4408
 Email hr@schoolcraft.edu

Kids on Campus

www.schoolcraft.edu/KOC
 Continuing Education Center 734-462-4448
 Email CEPD@schoolcraft.edu

Library Services

www.schoolcraft.edu/library
 Bradner Library, Livonia 734-462-4440
 Garden City Radcliff Center
 Room 355 734-462-4400, ext. 6020
 Email library@schoolcraft.edu

Lost & Found

www.schoolcraft.edu
 Livonia, Public Safety, Service Building 734-462-4424
 Garden City Radcliff Center,
 Public Safety 734-462-4400, ext. 6424

Open Entry/Open Exit Courses

www.schoolcraft.edu/oeoe
 Open Entry/Open Exit Office,
 McDowell Center 734-462-4588
 Open Entry/Open Exit Lab, Biomedical Technology
 Center Room 120 734-462-4400, ext. 5177
 Email oeoe@schoolcraft.edu

Orientation for New Students

www.schoolcraft.edu/orientation
 Online orientation www.schoolcraft.edu/olo
 Admissions and Welcome Center,
 McDowell Center 734-462-4683
 Email admissions@schoolcraft.edu

Payment for Classes

www.schoolcraft.edu/admissions
 Online payment https://webadvisor.schoolcraft.edu
 Cashier's Office, McDowell Center 734-462-4449
 Email cashiers@schoolcraft.edu
 Student Account Services,
 McDowell Center 734-462-4586
 Email studentaccounts@schoolcraft.edu

Register for Classes

www.schoolcraft.edu/registration
 Online registration https://webadvisor.schoolcraft.edu
 Registration Center, McDowell Center 734-462-4426
 Email registration@schoolcraft.edu

Reserving College Facilities

vistatech.schoolcraft.edu
VisTaTech Center rental 734-462-4610
 Email vistatech@schoolcraft.edu
Other room rentals 734-462-4475
 Email facilitiesuse@schoolcraft.edu

Scholarships

www.schoolcraft.edu/aid
 Student Financial Services Office,
 McDowell Center 734-462-4433
 Email finaid@schoolcraft.edu

Student Grievances

www.schoolcraft.edu/academics/policies
 Vice President of Student Services,
 McDowell Center 734-462-4577

Testing /Assessment Services

www.schoolcraft.edu/assessment
 Livonia Campus Testing Center,
 McDowell Center 734-462-4806
 Email assesscen@schoolcraft.edu
 Garden City Radcliff Center
 Room 120 734-462-4400, ext. 6021
 Email lacrc@schoolcraft.edu

Transcripts

www.schoolcraft.edu/registration
 734-462-4426

Incoming

Admissions and Welcome Center,
 McDowell Center 734-462-4426
 Email admissions@schoolcraft.edu

Outgoing

https://webadvisor.schoolcraft.edu

Tutoring

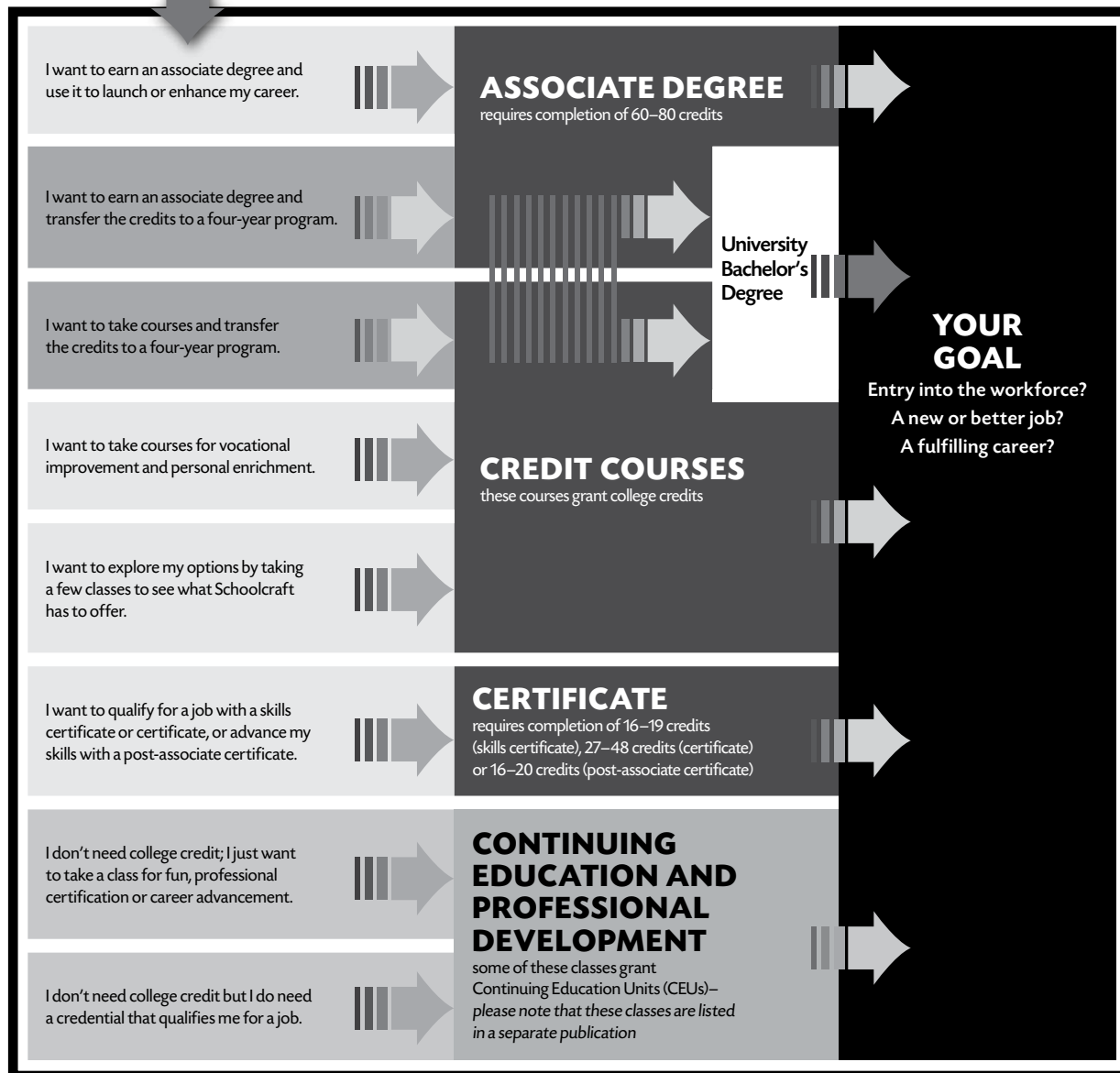
www.schoolcraft.edu/lac
 Learning Assistance Center:
 Livonia, Bradner Library 734-462-4436
 Garden City Radcliff Center
 Room 120 734-462-4400, ext. 6021
 Email lac@schoolcraft.edu

Veterans

Veterans Services Office,
 McDowell Center 734-462-4400 ext. 5213
 Email vets@schoolcraft.edu

Where to go for Assistance

what do YOU want to do? **Follow** your Path



For associate degrees, credit courses and certificates:
Make an appointment to meet with an academic advisor or counselor. Email counseling@schoolcraft.edu or call 734-462-4429.

For Continuing Education and Professional Development:
Get more information at www.schoolcraft.edu/cepd, cepd@schoolcraft.edu or 734-462-4448.



Earning Your Schoolcraft Degree or Certificate

What academic credentials does Schoolcraft offer?

- Associate degree
- Certificate
- Skills certificate
- Post-associate certificate

How are these credentials earned?

- Students earn degrees and certificates by completing courses required in a specific program of study.
- When completed, the program of study leads to an associate degree, certificate or skills certificate.
- Each course in the program of study is worth a certain amount of credit hours, also known as credits.
 - Credits are based on the number of hours of required meeting times for the class or the number of competencies that are achieved.
- Credit hour requirements for programs of study at Schoolcraft look like this:

Associate degree	60-80 credit hours	20-22 courses
Certificate	27-48 credit hours	10-12 courses
Skills certificate	16-19 credit hours	5-6 courses
Post-associate certificate	16 credit hours (average)	5-6 courses

IMPORTANT: Always work with an academic advisor or counselor when selecting your program of study.

What's your plan?

Schoolcraft students can create, manage and update their academic plans through WebAdvisor, the online registration and student services system.

- There are two types of credit courses offered at Schoolcraft:
 - *Occupational courses* teach knowledge and skills related to a specific job or to several related jobs.
 - *Liberal arts courses* teach the knowledge, intellectual concepts and attitudes associated with being an educated and well-rounded person. At Schoolcraft, liberal arts courses may be used to fulfill general education requirements. Traditionally, general education requirements are part of any associate or bachelor's degree offered at any college or university in the United States.
- In an associate degree program:
 - *General education* requirements are fulfilled by selecting liberal arts courses that are required or recommended for that degree. At Schoolcraft College general education requires a minimum of two courses in English, as well as a minimum of one course in humanities, mathematics, sciences, and social sciences as determined by the degree requirements.
 - Major courses fulfill requirements for the student's chosen major (accounting, computer graphics technology, biomedical engineering technology, advanced manufacturing, nursing, etc.).
 - General electives courses are selected by the student from a list of approved courses (the student "elects" which of these courses to take).

CREDENTIAL	Credits/ courses required	Includes occupational education courses?	Has general education requirements?	Designed for students who want to...	Worth noting
Associate in Arts, Business Administration, Engineering, Fine Arts, General Studies, or Science Degree	60-80 credits 20-22 courses	Yes for some	Yes	Transfer to a bachelor's degree program at another college or university	To ensure that credits transfer, students must work with an academic advisor or counselor and follow the appropriate transfer guide for the destination college or university.
Associate in Applied Science (AAS) Degree	60-80 credits 20-22 courses	Yes	Yes	Seek immediate employment or transfer to a bachelor's degree program at another college or university	Some associate degrees in applied science can be transferred into a particular bachelor's degree program at a specific university through an articulation agreement. Students must work with an academic advisor or counselor and follow the articulation guide to ensure that credits will transfer.
Certificate	27-48 credits 10-12 courses	Yes	No	Seek immediate employment	Credits earned in some certificate programs can be applied toward a related Schoolcraft associate degree
Skills Certificate	16-19 credits 5-6 courses	Yes	No	Seek immediate employment	Credits earned in some skills certificate programs can be applied toward a related certificate at Schoolcraft

Degree Requirements

ASSOCIATE IN APPLIED SCIENCE (AAS)

By obtaining an associate in applied science degree, students will be prepared to seek employment in their chosen career field. To explore transferability options, it is recommended that students meet with a counselor or academic advisor.

1. English—6 credit hours as specified by individual curriculum.
2. Completion of one of the occupational programs listed in the Schoolcraft College catalog.
3. All courses that apply to this degree must be at the 100- or 200-level.
4. Complete all Schoolcraft College core ability and general education requirements.

ASSOCIATE IN ARTS (AA)

The associate in arts degree is for students who plan to transfer to a four-year college or university. The associate in arts degree is appropriate for most transfer programs leading to a baccalaureate degree.

1. English 101 and 102 required—6 credit hours.
2. Humanities*— Minimum 8 credit hours in more than one discipline.
Art, Communication Arts, English Literature, Foreign Language, History, Humanities, Music, Philosophy, or Theatre.
One course must be either a Communication Arts or a Foreign Language course.
3. Mathematics/Sciences—Minimum 8 credit hours.
One course must be a mathematics course.
One course must be a lab science course in Biology, Chemistry, Geography 105 or 135, Geology, or Physics.
4. Social Sciences*—Minimum 8 credit hours in more than one discipline.
Anthropology, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
5. General Electives—Minimum 30 credit hours.
Electives must be chosen from transferable 100- or 200-level courses.
6. All courses that apply to this degree must be at the 100- or 200-level.
7. Complete all Schoolcraft College core ability and general education requirements.

* Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.

ASSOCIATE IN BUSINESS ADMINISTRATION (ABA)

The Associate in Business Administration (ABA) transfer degree is for students who plan to transfer to a four-year college or university program. The ABA degree provides the framework for four-year college degrees in, but not limited to, the following majors: Accounting, Business Administration, Computer Information Systems, Finance, Human Resource Management, International Business, Management, and Marketing.

Schoolcraft students may complete the ABA by following the requirements specified by the transfer institution and Schoolcraft College. Students are advised to discuss these requirements with their advisor, counselor, or the transfer institution.

1. English 101 and 102 required—6 credit hours.
2. Humanities*— Minimum 8 credit hours in more than one discipline.
Art, Communication Arts, English Literature, Foreign Language, History, Humanities, Music, Philosophy, or Theatre.
Communication Arts 103 required.
3. Mathematics/Sciences—Minimum 8 credit hours.
One course must be a mathematics course.
One course must be a lab science course in Biology, Chemistry, Geography 105 or 135, Geology, or Physics.
4. Social Sciences*—Minimum 11 credit hours in more than one discipline.
Anthropology, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
Economics 201 and 202 required.
Political Science 105 recommended.
5. Additional Required Courses**—11 credit hours.
Accounting 201 and 202 required.
Business 101 required.
6. General Electives—Minimum 16 credit hours.
Electives must be chosen from 100- or 200-level courses. The following courses are recommended while referring to the transfer institution's requirements:
Business 207, Mathematics 122, Computer Information Systems 115 or 120 recommended.
7. All courses that apply to this degree must be at the 100- or 200-level.
8. Complete all Schoolcraft College core ability and general education requirements.

* Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.

** Occupational courses may not account for more than 15 credits in an ABA degree. Transferable liberal arts courses may be found on Schoolcraft College's MACRAO list. While occupational courses provide immediate skill-building opportunities, their transferability and value should be discussed with a counselor or advisor.

ASSOCIATE IN ENGINEERING (AE)

The associate in engineering degree is for students who plan to pursue a baccalaureate degree in engineering.

1. English 101 and 102 required—6 credit hours.
2. Humanities*—Minimum 6 credit hours in more than one discipline.
Art, Communication Arts, English Literature, Foreign Language, History, Humanities, Music, Philosophy, or Theatre.
3. Mathematics/Sciences—34 credit hours.
Chemistry 111 required.
Physics 211 and 212 required.
Mathematics 150, 151, 240 and 252 required.
4. Social Sciences*— Minimum 7 credit hours in more than one discipline.
Anthropology, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
Economics 201 required.
5. General Electives—Minimum 7 credit hours.
Refer to the transfer institution's requirements.
Electives must be chosen from 100- or 200- level courses.
6. All courses that apply to this degree must be at the 100- or 200-level.
7. Complete all Schoolcraft College core ability and general education requirements.

* Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.

ASSOCIATE IN FINE ARTS (AFA)

The associate in fine arts degree is for students who plan to transfer to a four-year college or university. The associate in fine arts degree is appropriate for most transfer programs leading to a baccalaureate degree in the fine arts fields.

1. English 101 and 102 required—6 credit hours.
2. Humanities*—20 credit hours in more than one discipline. Students are recommended to complete a specific track as specified below while referring to the transfer institution's requirements**:
Art courses recommended: **105, 106, 109 or 126, 115, 116, 201, 248.**
English Literature courses recommended: **200, 205, 206, 243, 244, 245, 246, 248.**
Music courses recommended: **105, 153, 154, 164, 165, 250, 252.**
3. Mathematics/Sciences—8 credit hours.
One course must be a mathematics course
One course must be a lab science course in Biology, Chemistry, Geography 105 or 135, Geology, or Physics.
4. Social Sciences*—8 credit hours in more than one discipline.
Anthropology, Economics, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
5. General Electives—18 credit hours.
Electives must be chosen from transferable 100- or 200-level courses. The following courses are recommended while referring to the transfer institution's requirements:
Art courses recommended: **218, 219, 125, 205, 243, 244.**
English Literature courses recommended: **170, 203, 275.**
Music courses recommended**: 114, 116, 117, 118, 121, 122, 124, 127, 131, 132, 133, 134, 135, 136, 137, 138, 140, 141, 142, 169, 214, 216, 217, 218, 224, 227, 231, 232, 233, 234, 235, 236, 240, 241, 242, 245, 246, 248, 249, 258, 259, 268, 269, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293.
6. All courses that apply to this degree must be at the 100- or 200-level.
7. Complete all Schoolcraft College core ability and general education requirements.

* Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.

** Occupational or applied Art, English Literature, or Music courses may not account for more than 15 credits in an AFA degree. Transferable courses may be found on Schoolcraft College's MACRAO list. While the applied courses provide immediate skill building opportunities, their transferability and value should be discussed with a counselor or academic advisor.

Note: Italicized and bolded course numbers are MACRAO supported courses that may fulfill a transfer institution's general education requirement. Final decisions regarding transferability of courses are determined by the receiving institution.

ASSOCIATE IN GENERAL STUDIES (AGS)

The associate in general studies degree is for students who wish to earn an associate degree that may transfer to a college or university through an individualized program of study.

1. English 101 and 102 required—6 credit hours.
2. Humanities*—8 credit hours.
Art, Communication Arts, English Literature, Foreign Language, History, Humanities, Music, Philosophy, or Theatre.
3. Mathematics/Sciences— Minimum 8 credit hours.
One course must be a mathematics course.
One course must be a lab science course in Biology, Chemistry, Geography 105 or 135, Geology, or Physics.
4. Social Sciences*—8 credit hours in more than one discipline.
Anthropology, Economics, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
5. General Electives—30 credit hours.
Electives must be chosen from transferable or occupational 100- or 200-level courses.
6. All courses that apply to this degree must be at the 100- or 200-level.
7. Complete all Schoolcraft College core ability and general education requirements.

** Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.*

OR

1. English 101 and 102 required—6 credit hours.
2. Any two of the following for a total of 24 credit hours:
Humanities*—12 credit hours required.
Mathematics/Sciences—12 credit hours required.
One course must be a mathematics course.
One course must be a lab course.
Social Sciences*—12 credit hours required.
3. General Electives—30 credit hours.
Electives must be chosen from transferable or occupational 100- or 200-level courses.
4. All courses that apply to this degree must be at the 100- or 200-level.
5. Complete all Schoolcraft College core ability and general education requirements.

** Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.*

ASSOCIATE IN SCIENCE (AS)

The associate in science degree is for students who plan to pursue a baccalaureate degree in a science field.

1. English 101 and 102 required—6 credit hours.
2. Humanities*—Minimum 8 credit hours in more than one discipline.
Art, Communication Arts, English Literature, Foreign Language, History, Humanities, Music, Philosophy, or Theatre.
3. Mathematics/Sciences—Minimum 20 credit hours.
One course must be a mathematics course.
One course must be a lab science course in Biology, Chemistry, Geography 105 or 135, Geology, or Physics.
4. Social Sciences*—8 credit hours in more than one discipline.
Anthropology, Economics, Geography 133 or 241, History, Political Science, Psychology, or Sociology.
5. General Electives—18 credit hours.
Electives must be chosen from transferable 100- or 200-level courses.
6. All courses that apply to this degree must be at the 100- or 200-level.
7. Complete all Schoolcraft College core ability and general education requirements.

** Please note: Students may not use the same History course to satisfy both the Humanities and Social Sciences distribution requirement.*

Meeting Core Ability, General Education, and Program Requirements

What do employers want?

Employers hire people who have both job-specific skills and core abilities.

- *Job-specific skills* are unique to a certain job or several related jobs and are learned in occupational courses.
- Degree and certificate programs that lead directly to employment are designed around specific program outcomes that match the needs of employers.
- *Core abilities* are useful in any work situation and are transferable from one job to the next. They can be developed in any course.
- Schoolcraft has identified eight core abilities. Every credit course includes assignments that develop at least one of these abilities, with all eight core abilities being addressed in every associate degree program.
- Schoolcraft's associate degree programs are designed so that students graduate having fulfilled the eight core ability expectations.

THE EIGHT CORE ABILITIES

Communicate effectively

Think creatively and critically

Use technology effectively

Use mathematics

Manage information

Work cooperatively

Act responsibly

Demonstrate social and cultural awareness

Every credit course offered at Schoolcraft includes assignments that develop at least one core ability.

What do colleges want?

For their bachelor's degree programs, colleges and universities want students who possess the core abilities, have completed specific courses that fulfill general education requirements, and have met other requirements for entry into the program.

- *Core abilities* represent college-level thought and behavior and are valued by college faculty. At Schoolcraft the core abilities are developed in both occupational and liberal arts courses.
- *General education requirements* address the knowledge, intellectual concepts and attitudes associated with being an educated and well-rounded person. These courses are a required part of any associate degree or bachelor's degree offered at any college or university.

GENERAL EDUCATION REQUIREMENTS

English Composition

Humanities

Mathematics

Sciences

Social Sciences

What do you want?

As you think about your next move, consider this:

- Many good-paying jobs do not require a bachelor's degree. They can be acquired with an associate degree, certificate or other credential completed in less than four years.
- Schoolcraft offers certificates and associate degrees, and is developing a bachelor's degree in culinary arts.
- Schoolcraft has agreements with other colleges and universities which allow you to start here and transfer there to finish your bachelor's degree.
- At Schoolcraft you can follow the path that makes the most sense for you.
 - Complete a program that leads directly to a job.
 - Pursue a path that leads to transfer to a bachelor's degree program at another college or university.
 - Start by taking a few classes and exploring your options.
- Whichever path you choose, you can proceed knowing that Schoolcraft has designed its courses, certificates and associate degrees to help you succeed with employers and with other colleges and universities.

Quality assurance for your Schoolcraft education

- *At the student level:* Assignments in both occupational and liberal arts courses require students to demonstrate one or more of the core abilities. Assignments also require students to demonstrate their performance of their program's outcomes.
- *At the college level:* Samples of student work (with the student's name removed) are drawn from courses and programs across campus and reviewed to see if they align with core ability and program outcome requirements. General education requirements are reviewed through an analysis of liberal arts courses.
- Findings from the review of student work are used in improving class assignments, courses and programs with the goal of enhancing student learning.

General Education & MACRAO Requirements for 2013–14 Catalog

	General Education Requirements	MACRAO Requirements	
ENGLISH COMPOSITION	I. Select one combination of courses based on program requirements	I. ENG 101 & 102 (only combination that satisfies MACRAO)	6 cr hrs
HUMANITIES	II. Select a minimum of one course	II. Courses must be in at least two subject areas	8 cr hrs
MATHEMATICS	III. Select a minimum of one course	III. Courses must be in at least two subject areas and must include one lab class	8 cr hrs
SCIENCES	IV. Select a minimum of one course		
SOCIAL SCIENCES	V. Select a minimum of one course	IV. Courses must be in at least two subject areas	8 cr hrs

Courses Meeting General Education & MACRAO Requirements			
ENGLISH COMPOSITION			
English (ENG)	101 & 102**	OR	100 & 106 OR 100 & 116 OR 101 & 106 OR 101 & 107 OR 101 & 116
HUMANITIES			
Arabic (ARB)	101, 102, 201, 202	Humanities (HUM)	106, 150, 190, 201, 202, 203, 204, 210, 212, 215, ♦231, ♦232
Art (ART)	105, 106, 109, ♦110, 113, 115, 116, 118, 119, 125, 126, 201, 205, 211, 212, ♦216, 218, 219, 236, 239, 243, 244, 248	Italian (ITAL)	101, 102
Chinese (CHIN)	101, 102	Literature (ENG)	170, 200, 203, 243, 244, 245, 246, 248, 251, 252, 275, 280
Communications (COMA)	103, 200, 201, 210, 230	Music (MUS)	104, 105, 107, 149, 153, 154, 155, 164, 165, 250, 252
French (FR)	101, 102, 201, 202	Philosophy (PHIL)	243, 247, ♦257, 277
German (GER)	101, 102, 201, 202	Spanish (SPAN)	101, 102, 201, 202
History (HIST)	134, 137, 138, 141, 151, 152, 153, 230	Theater (THEA)	101, 120, 121, 204, 207, 208, 209, 220, 221, 231, 232, 241
MATHEMATICS			
(MATH)	101, 105, 106, 111, 113, 119, 122, 128, 129, 135, 145, 150, 151, 230, 240, 252		
SCIENCES <i>italicized course numbers contain a lab</i>			
Biology (BIOL)	♦100, 101, 103, 104, 105, 114, 115, 120, 130, 140, 236, 237, 238, 240, 243	Geology (GEOL)	133, 134, 237
Chemistry (CHEM)	100, 111, 117, 120, 213, 214	Physics (PHYS)	104, 123, 181, 182, 211, 212
Geography (GEOG)	105, 135, 203, 212, 217, ♦225		
SOCIAL SCIENCES			
Anthropology (ANTH)	112, 117, 201, 211, 214	Political Science (POLS)	105, 109, 205, 207, 209
Economics (ECON)	103, 201, 202	Psychology (PSYCH)	153, 201, 205, +206, 207, 209, 219, 229, 239, +249
Geography (GEOG)	133, 241	Sociology (SOC)	201, 205, 209, 210, 220, 290
History (HIST)	134, 137, 138, 141, 151, 152, 153, 230		

** Only combination that satisfies MACRAO.

+ PSYCH 206 & 249—revisions to first appear in the 2012–13 Catalog.

♦ Adding: ART 110, ART 216 (reactivated), BIOL 100, GEOG 225, & PHIL 257—revisions to first appear in the 2013–14 Catalog. (Note: HUM 231 & HUM 232 will be deactivated in 2014).

Transferring from Schoolcraft to another College or University

What are your options for transfer?

- Earn an associate degree in arts, business administration, engineering, fine arts, general studies, or science.
 - These degrees are designed for transfer into a bachelor's degree program at another college or university. Most will accept 60 or more Schoolcraft credits. Always work with an academic advisor or counselor and follow the transfer guide for your destination college to ensure that your credits will transfer.
- Earn an associate degree in applied science in a program that is part of an articulation agreement.
 - This degree is designed for immediate employment, but a limited number of programs leading to this degree are part of an articulation agreement with another college or university. This agreement allows for an applied science degree to transfer into a specific bachelor's degree program at a particular college or university. Some institutions will allow up to 90 Schoolcraft credits to be applied to their bachelor's degree requirements. Always work with an academic advisor or counselor and follow the articulation guide for your destination college to ensure that your credits will transfer.
- Follow the transfer destination college's general education requirements and MACRAO transfer agreement requirements and transfer up to 30 credits or more to another college or university in Michigan.
 - Bachelor's degree programs require students to complete a certain number of courses that fulfill their general education requirements. Students can complete these courses at Schoolcraft prior to transferring to the other college or university.
 - MACRAO is the Michigan Association of Collegiate Registrars and Admissions Officers. This group of public and private colleges and universities in Michigan has worked together to establish guidelines for transferring between institutions.
 - Schoolcraft has a broad selection of liberal arts courses that fulfill MACRAO requirements.
 - IMPORTANT: General education and MACRAO requirements vary depending on the college or university to which you are transferring and depending on your program of study. Always work with an academic advisor or counselor to ensure that your credits will transfer.
- Transfer individual courses.
 - Schoolcraft has hundreds of courses that can be transferred to other colleges and universities. Always work with an academic advisor or counselor and follow the transfer guide for your destination college to ensure that your credits will transfer.

Colleges participating in MACRAO transfer agreement

These colleges participate in the transfer agreement established by the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO).

Adrian College*	Marygrove College
Albion College	Michigan State University*
Baker College	Michigan Technological University*
Calvin College*	Northern Michigan University*
Central Michigan University	Northwood University
Cleary University	Oakland University*
Concordia University*	Olivet College
Davenport University	Rochester College
Eastern Michigan University*	Saginaw Valley State University*
Ferris State University*	Siena Heights University*
Finlandia University*	Spring Arbor University
Grand Valley State University*	Wayne State University
Lake Superior State University	Western Michigan University
Lawrence Technological University*	
Madonna University*	

**Provisos, Limitations and Exceptions*

NOTE: Institutions marked with * have limitations, exceptions or provisos to the MACRAO Transfer Agreement. Always work with an academic advisor or counselor to learn about exceptions and to ensure that your credits will transfer. Additional information can be found at www.macrao.org.

Colleges participating in articulation agreements

Articulation agreements pair a specific applied science degree from Schoolcraft with a specific bachelor's degree at a particular college or university. Consult the college website for updated information on participating colleges and available programs. Always work with an academic advisor or counselor and follow the articulation guide for your destination college to ensure that your credits will transfer.

Cleary University	Lawrence Technological University
Davenport University	Madonna University
Eastern Michigan University	Northwood University
Ferris State University	University of Detroit Mercy
Franklin University Alliance	Wayne State University

Transferring to another college or university

	Year 1 30 credits	Year 2 30 credits	Year 3 30 credits	Year 4 30 credits
Articulations and Special Agreements	70 to 90* credits at Schoolcraft <i>Graduate with associate degree</i>			30 or more credits* at a four-year college or university <i>Graduate with bachelor's degree</i>
Transfer Associate Degrees	60 credits* at Schoolcraft <i>Graduate with associate degree</i>		60 credits* at four-year college or university <i>Graduate with bachelor's degree</i>	
MACRAO Transfer Agreement	30 or more credits at Schoolcraft <i>These credits can stand alone or be part of a Schoolcraft associate degree</i>		60 to 90 credits* at four-year college or university <i>Graduate with bachelor's degree</i>	
Individual Courses	Schoolcraft offers hundreds of courses that can be transferred to four-year colleges and universities			
Guest Students	Students at other colleges and universities can enroll at Schoolcraft as guest students.			
	Total credits earned: 30	Total credits earned: 60*	Total credits earned: 90	Total credits earned: 120*

* Credit counts are approximate. The exact number of hours required for an associate or bachelor's degree varies by program and by institution. See an academic advisor or counselor to learn about credit and course requirements for specific programs.

65% of Schoolcraft graduates surveyed in the year following their graduation said that they were pursuing further education at another college or university. *Source: Graduate Follow up Survey*

Students from other colleges welcome at Schoolcraft

- Students at other colleges can enroll as guest students at Schoolcraft.
 - Many guest students take classes over the spring and summer and transfer the credits back to their home college or university.
 - Guest students can enroll in online, hybrid and Open Entry/Open Exit courses at Schoolcraft. Many of these courses will transfer to their home college or university.
- The benefits of being a guest student at Schoolcraft include:
 - Cost savings thanks to Schoolcraft's lower tuition rates.
 - Reducing credit hour load at the home university, freeing up time for a part-time job, internship, or student activities.
 - If enough credits at Schoolcraft are completed over spring and summer, the student can eliminate a semester at the home university and shorten the time it takes to complete a bachelor's degree.

Transferring credits to Schoolcraft from another college

- Credits earned at another college or university—including other community colleges—can be transferred to Schoolcraft.
 - Students who earn 45 credits at Schoolcraft and continue at another college or university can still earn a Schoolcraft degree by sending their transcript from the second college back to SC. This is called “reverse transfer.”
 - Students who started at another college or university might be able to apply some or all of those credits toward a Schoolcraft credential.
 - Consult with an academic advisor or counselor to explore your options for transferring credits earned elsewhere to Schoolcraft.

Transfer check list

- ☒ Meet with a Schoolcraft College academic advisor or counselor to keep current with transfer issues, obtain transfer and career information, and to ensure transferability of courses.
- ☒ Identify the four-year college or university of your choice as early as possible.
- ☒ Meet with a Schoolcraft College academic advisor or counselor to satisfy your associate degree requirements, and review how the transfer guide from the four-year college or university can be built into those degree requirements as well as the MACRAO transfer agreement, if applicable.
- ☒ Attend transfer events either at Schoolcraft or at the institution you are transferring to. College recruiters visit Schoolcraft College throughout the fall and winter semesters. More information can be found at www.schoolcraft.edu/transfer under “On-campus recruiting.”
- ☒ Apply to the four-year college or university of your choice in a timely manner. Online admission applications are available at www.macrao.org. Make sure to check the application deadlines.
- ☒ After applying to the institution, request official transcripts from Schoolcraft College by completing the online transcript request form, available via WebAdvisor.

Areas of Study

Students can choose from more than 70 different majors at Schoolcraft College. In addition, Schoolcraft offers a variety of paths by which students can pursue their education and career goals. Student must maintain an overall grade-point average of 2.0 or better to earn a degree or certificate.

Associate degree

- Requires completion of 60–80 credits (20–22 courses).
- Some are designed for immediate employment.
- Some are designed for transfer to a bachelor's degree program at another college or university.
- At least 15 credits must be earned at Schoolcraft.*

Skills certificate

- Requires completion of 16–19 credits (five or six courses).
- At least 50% of credits must be earned at Schoolcraft.*

Certificate

- Requires completion of 27–48 credits (10–12 courses).
- Designed for immediate employment.
- Some skills certificates include credits that can be applied to a certificate.
- Some certificates include credits that can be applied to an associate degree.
- At least 50% of credits must be earned at Schoolcraft.*

Post-associate certificate

- Requires completion of 16 credit hours average (5–6 courses).
- Student must have earned an associate degree.
- Provides student with advanced job skills.
- At least 50% of credits must be earned at Schoolcraft.*

Courses only designation

- Some areas of study are marked 'courses only' because they have courses but no certificates or degrees.
- Many of these courses can be applied toward a Schoolcraft certificate or degree.
- Many can be taken for transfer to another college or university.

* Work with an academic advisor or counselor to determine if credits you've earned at another college or university can be applied toward a Schoolcraft certificate or degree.

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your academic advisor or counselor to ensure your credits will transfer.

Departments and Programs		Skills certificate	Certificate	Associate/ Transfer degree	Post-associate certificate	Courses only
Arts, Humanities & Communication	Arabic			‡		✓
	Art and Design			‡		✓
	Arts—Fine Arts			✓		
	Broadcast Communications (articulation with Specs Howard School of Broadcasting)			✓		
	Chinese			‡		✓
	Communication Arts			‡		✓
	Computer Graphics Technology				✓ ♦	
	Computer Graphics Technology: 3D Animation		✓			
	Computer Graphics Technology: 3D and Video Graphics			✓		
	Computer Graphics Technology: Digital Art		✓	✓		
	Computer Graphics Technology: Foundation	✓ ♦				
	Computer Graphics Technology: Graphic Design			✓		
	Computer Graphics Technology: Interactive Media and Game Design		✓	✓		
	Computer Graphics Technology: Publishing		✓			
	Computer Graphics Technology: Video Graphics		✓			
	Computer Graphics Technology: Web Design		✓			
	English			‡		✓
	English as a Second Language					✓
	French			‡		✓
	German			‡		✓
	History			‡		✓
	Humanities			‡		✓
	Italian			‡		✓
	Liberal Arts ** May be applicable in a wide range of areas of study such as Anthropology, Art, Communications, Conservation, Criminal Justice, Economics, English, Fine Arts, Foreign Language, Geography, Geology, History, Mathematics, Music, Philosophy, Political Science, Psychology, Secondary Education, Social Work, Sociology, Statistics and Theatre.			✓		
	Music: Foundations		✓ ♦			
	Music: Intermediate		✓			
	Music: Piano Teacher		✓ ♦			
	Philosophy			‡		✓
	Sound Recording Technology		✓ ♦	✓		
	Spanish			‡		✓
	Theatre			✓		
Culinary Arts	Culinary Arts •		✓	✓		
	Culinary Baking and Pastry Arts •		✓ ♦			
	Culinary Management					✓

Departments and Programs		Skills certificate	Certificate	Associate/ Transfer degree	Post-associate certificate	Courses only
Business & Information Technology	Accounting		✓	✓		
	Accounting for Small Business	✓ ♦				
	Aviation Management	✓ ♦		✓		
	Business		✓ ♦	✓		
	Business Administration May be applicable in such areas as Accounting, Computer Information Systems, Finance, Human Resource Management, International Business, Management and Marketing.			✓		
	Business: Marketing and Applied Management			✓		
	Business: Small Business for Entrepreneurs		✓ ♦	✓		
	Business Information Technology		✓ ♦	✓		
	Computer Information Systems				✓	
	Computer Information Systems: Introductory		✓			
	Computer Information Systems: Microcomputer Support Technician			✓		
	Computer Information Systems: Networking Technology Integration		✓ ♦			
	Computer Information Systems: Programming	✓ ♦		✓		
	Computer Information Systems: Web Specialist		✓ ♦	✓		
	Computer Service Technician		✓ ♦			
	Cosmetology Management			✓		
	Economics			‡		✓
	Office Information Systems	✓ ♦	✓	✓		
Education & Human Services	Child Care and Development	✓	✓ ♦	✓		
	Child Care: Special Needs Paraprofessional		✓	✓		
	Education ** May be applicable in such areas as Elementary and Special Education.			✓		
Healthcare & Health Sciences	Allied Health Education					✓
	Emergency Medical Technology Paramedic •		✓ ♦	✓		
	Health Information Technology •			✓		
	Health Information Technology: Coding Specialist •		✓ ♦			
	Health ** May be applicable in such health and science specialties as Biology, Chemistry, Dental Hygiene, Nursing, Occupational Therapy, Pre-Dental, Pre-Medicine, Pre-Physical Therapy and Pre-Physician Assistant.			✓		
	Massage Therapy •		✓ ♦	✓		
	Medical Assisting •		✓ ♦			
	Medical Assisting: Medical Biller/Receptionist	✓ ♦				
	Medical Assisting: Phlebotomy	✓ ♦				
	Medical Assisting: Physician Office Medical Transcription	✓ ♦				
	Nursing •		✓ ♦	✓		
	Nursing Assistant Training Program •	✓ ♦				
	Pharmacy: Pre-Pharmacy			✓		
	Physical Education					✓

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your academic advisor or counselor to ensure your credits will transfer.

- Student must be officially admitted to the Limited/Restricted Enrollment Program prior to enrolling in core/major courses. Call the Registration Center at 734-462-4426 for more information.

- ♦ See Gainful Employment Disclosure information for this program at www.schoolcraft.edu/academicprograms

‡ These areas of study may be applicable toward Transfer associate degrees.

** By working with an academic advisor or counselor, students can design a program of study leading to an associate degree that is oriented toward education, health or liberal arts and will transfer to a bachelor's degree program at another college or university.

Departments and Programs		Skills certificate	Certificate	Associate/Transfer degree	Post-associate certificate	Courses only
Manufacturing & Technology	Biomedical Engineering Technology •			✓	✓ ♦	
	Computer Aided Design: Mechanical			✓		
	Computer Aided Drafting: Technical		✓ ♦			
	Design					✓
	Electronic Technology	✓ ♦	✓ ♦	✓		
	Engineering May be applicable in such special engineering areas as Chemical, Civil, Computer Systems, Electrical, Environmental, Industrial, Manufacturing, Materials Science, Mechanical and Sustainability.			✓		
	Manufacturing: Advanced Manufacturing	✓	✓	✓		
	Metallurgy and Materials Science		✓	✓	✓ ♦	
	Quality Management					✓
	Welding Sculpture	✓				
	Welding: Fabrication		✓ ♦			
Natural Sciences	Welding: Joining Technology			✓		
	Biology			‡		✓
	Chemistry			‡		✓
	Environmental Studies		✓ ♦	✓		
	Geography			‡		✓
	Geology			‡		✓
	Mathematics			‡		✓
	Physics			‡		✓
Public Safety	Correctional Science					✓
	Criminal Justice			✓		
	Criminal Justice with Academy			✓		
	Fire Technology		✓ ♦	✓		
	Fire Technology with Academy			✓		
	Homeland Security			✓		
Social Sciences	Anthropology			‡		✓
	Political Science			‡		✓
	Psychology			‡		✓
	Sociology			‡		✓
	Associate Degree Seeking, Undecided			✓		
	Transfer Degree Seeking, Undecided			✓		
	Non-Degree Seeking (Federal financial aid is not available for this option)					✓
Learning Support	College and Beyond	Learning Support courses are designed to provide essential learning skills and increase students' learning potential, building a strong foundation for success in educational, occupational and personal endeavors.				✓
	Collegiate Skills					✓
	Human Development Services					✓
	Learning Resources					✓

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your academic advisor or counselor to ensure your credits will transfer.

• Student must be officially admitted to the Limited/Restricted Enrollment Program prior to enrolling in core/major courses. Call the Registration Center at 734-462-4426 for more information.

♦ See Gainful Employment Disclosure information for this program at www.schoolcraft.edu/academicprograms

‡ These areas of study may be applicable toward Transfer associate degrees.

** By working with an academic advisor or counselor, students can design a program of study leading to an associate degree that is oriented toward education, health or liberal arts and will transfer to a bachelor's degree program at another college or university.

ARTS, HUMANITIES & COMMUNICATION



A strong liberal arts background is important in many careers. Creative thinking abilities, problem solving skills and global awareness are essential in a knowledge economy. Within the realm of arts, humanities and communication, Schoolcraft offers 14 different areas of study. Some programs lead directly to a career, others are critical for earning a degree that will transfer to a four-year university, and some are just a great way to explore your interests and push the limits of your creativity.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Art and Design.....	37
• Fine Arts degree	13, 37
• ART courses	37, 116–117
Broadcast Communications degree.....	25
Communication Arts courses (COMA).....	37, 127
Computer Graphics Technology	
• 3D Animation certificate.....	29
• 3D and Video Graphics degree	29
• Digital Art degree and certificate	28
• Foundation skills certificate.....	27
• Graphic Design degree	26
• Interactive Media and Game Design degree and certificate	30
• Post-associate certificate	27
• Publishing certificate.....	27
• Video Graphics certificate	29
• Web Design certificate	27
• CGT courses.....	128–132
English courses (ENG)	38, 142–143
English as a Second Language courses (ESL) ..	38, 143–144
Foreign Languages.....	38
• Arabic courses (ARB)	116
• Chinese courses (CHIN).....	126
• French courses (FR).....	146
• German courses (GER).....	147
• Italian courses (ITAL).....	152
• Spanish courses (SPAN).....	172
History courses (HIST).....	38, 150
Humanities courses (HUM)	38, 151–152
Liberal Arts transfer degree.....	37
Music	
• Foundations certificate	31
• Intermediate certificate	32
• Piano Teacher certificate	33
• MUSIC courses	158–165
Philosophy courses (PHIL).....	38, 167–168
Sound Recording Technology degree and certificate ..	34–35
• SRT courses	171
Theatre degree	36
• THEA courses	172–173
Welding Sculpture skills certificate.....	97

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BROADCAST COMMUNICATIONS

Credentials

Broadcast Communications AAS degree 60–62 cr.

Major Description

The broadcast arts are fast-paced and ever-changing. Where will you land—television, the radio, or online? Will be you be a reporter, director, web producer, video editor, or sound engineer?

Whatever your career destination, you'll benefit from a unique partnership between Schoolcraft and the Specs Howard School of Broadcast Arts leading to an industry-recognized associate degree in broadcast communications.

- Start the program at either school.
- Spend a year at the Specs Howard studios in Southfield honing your skills and earning credits toward your degree.
- Earn the balance of your credits at Schoolcraft.
- Get hands-on experience through Schoolcraft's Video Production Club, working broadcasts of Plymouth Whalers hockey games, Schoolcraft College athletics, and community events.
- Join the ranks of program graduates who have found work at local and national radio and television stations and in the film and television industries.

Job Titles & Median Salaries or Hourly Rates

- Announcer: \$27,010 (national)
- Newscaster: \$36,000 (national)
- Audio and Video Editors: \$45,489 (national)
- Broadcasting/Sound Technicians: \$39,873 (national)

Broadcast Communications AAS Degree

Students will develop the skills necessary to function as entry-level employees in radio, television, cable television or industrial television settings. The sixty-hour program is articulated with the Specs Howard School (SHS) of Broadcast Arts, Inc. located in Southfield, Michigan. Fifteen credit hours are awarded for completion of the SHS certificate program and the remaining credit hours are taken at Schoolcraft.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. The program can begin at either school. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Specs Howard School of Media Arts

Approved Articulation Credit 15

Total Credits 15

SCHOOLCRAFT COLLEGE College Requirements

Students are encouraged to take their college requirements early in their program. However, these courses are not required before beginning program courses.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

Mathematics	Select 1	3–4
MATH 101	Business Mathematics	
MATH 113	Intermediate Algebra for College Students	
BUS 101	Introduction to Business.....	3
COMA 103	Fundamentals of Speech	3
ENG 101	English Composition 1	3
THEA 208	Acting 1	3

Total Credits 15–16

First Year—Winter Semester

CIS 105	Computer Orientation.....	1
COMA 201	Discussion	3
GEOG 135	Earth Systems	4
PSYCH 201	Introductory Psychology.....	4
THEA 241*	Oral Interpretation of Literature	3

Total Credits 15

Second Year—Fall Semester

ENG 107	Introduction to Journalism.....	3
GEOL 133	Physical Geology.....	4
POLS 105	Survey of American Government.....	3
SOC 201	Principles of Sociology.....	3
Elective**	2–3

Total Credits 15–16

PROGRAM TOTAL 60–62 CREDITS

* This class is offered on a rotational basis.

Contact Liberal Arts office for current offerings.

** Any 100- or 200-level course not previously taken.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

COMPUTER GRAPHICS TECHNOLOGY

Credentials

Foundation skills certificate.....	18 cr.
3D Animation certificate.....	33 cr.
Digital Art certificate.....	28 cr.
Interactive Media and Game Design certificate.....	29 cr.
Publishing certificate.....	29–30 cr.
Video Graphics certificate.....	30 cr.
Web Design certificate.....	30 cr.
3D and Video Graphics AAS degree.....	65 cr.
Digital Art AAS degree.....	60 cr.
Graphic Design AAS degree.....	61–62 cr.
Interactive Media and Game Design AAS degree.....	61 cr.
Post-associate certificate	16–20 cr.

Major Description

If the prospect of a career that blends art and technology appeals to you, we have four options that will prepare you for work in the high-tech, high-style field of digital graphic design.

In each program you'll learn how to use professional level software, hardware and peripherals and to apply the principles of design, typography, and color theory to the creation of effective visual communication.

We have four options that can take you from novice to knowledgeable:

- Our foundation skills certificate will introduce you to the basics of art and design along with the latest graphics software.
- Our certificate programs allow you to select a specialty and focus on animation, digital art, video graphics, publishing, Web design, or interactive media and game design.
- Our associate in applied science degree—offered in 3D and video graphics, digital art, graphic design, and interactive media and game design—features three capstone courses for synthesizing what you've learned: a portfolio class, an internship working with area businesses, or an honors-level project.
- Already earned a degree but hungry for more? Our post-associate certificate program allows you to develop a computer graphics specialty while updating your knowledge of the newest techniques and technologies.

Job Titles & Median Salaries or Hourly Rates

- Graphic Designer: \$43,500 (national)
- Web Page Designer: \$55,068 (Michigan)

The computer graphics technology programs prepare students for a career in the fields of graphic design and computer graphics. Students learn how to use professional level software, hardware and peripherals, and to apply the principles of design, typography, and color theory to the creation of effective print- and electronic-based visual communication. It is highly recommended that students meet with faculty for advice in selecting their electives.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree. Students wishing to pursue a post-associate certificate must have a computer graphics technology associate degree or equivalent professional experience.

SAMPLE SCHEDULE OF COURSES

First Year—Fall semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3
ENG 101	English Composition 1	3
CGT 136	Web Design and Development 1	3

Total Credits 15

First Year—Winter Semester

MATH 113	Intermediate Algebra for College Students.....	4
CGT 127	Publishing—InDesign.....	3
CGT 163	Web Design and Development 2	3
ENG 102	English Composition 2.....	3
COMA 103	Fundamentals of Speech	3

Total Credits 16

Computer Graphics Technology: Graphic Design AAS Degree

Second Year—Fall Semester

CGT 161	History of Graphic Design	3
Track Option	Select 1	3
Publishing Track:	CGT 149 Typography	
Web Track:	CGT 211 Flash	
Track Option	Select 1	2–3
Publishing Track:	CGT 166 Photography	
	CGT 157 Prepress	
Web Track:	CGT 234 Web Design and Development 3	
CGT 226	Digital Imaging 2—Photoshop.....	3
BUS 122	Advertising.....	3

Total Credits 14–15

Second Year—Winter Semester

CGT 257	Portfolio Preparation.....	3
Track Option	Select 1	3
Publishing Track:	CGT 231 Electronic Publishing	
Web Track:	CGT 237 Dynamic Web Design With ColdFusion	
Science	Select 1	4
BIOL 101	General Biology	
CHEM 111	General Chemistry 1	
PHYS 104	Introduction to Astronomy	
Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
Capstone	Select 1	3
CGT 250	Practical Application	
CGT 270*	Internship	
CGT 298*	Honors Studies	

Total Credits 16**PROGRAM TOTAL 61–62 CREDITS**

* These classes are offered as independent learning.

Contact CGT faculty.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Computer Graphics Technology: Web Design Certificate

The technology of the Internet is constantly evolving both in terms of delivery infrastructure and website development tools. To stay abreast of these technological advances requires programming and design knowledge, skills and experience. A good site must include both quality visual communication design and functionality. Programming is needed for interactivity to search databases and track usage. Visual graphic design is needed to convey the content message and provide branding for products and services.

This certificate is designed to provide students with an overview of the technical programming and graphic design areas for web page development.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 136	Web Design and Development 1	3

Total Credits 12

First Year—Winter Semester

CGT 127	Publishing—InDesign	3
CGT 161	History of Graphic Design	3
CGT 163	Web Design and Development 2	3
CGT 211	Flash	3

Total Credits 12

Second Year—Fall Semester

CGT 234	Web Design and Development 3	3
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Total Credits 3

Second Year—Winter Semester

CGT 237	Dynamic Web Design With ColdFusion	3
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Total Credits 3

PROGRAM TOTAL 30 CREDITS

Computer Graphics Technology: Publishing Certificate

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 127	Publishing—InDesign	3
CGT 149	Typography	3

Total Credits 15

First Year—Winter Semester

CGT 161	History of Graphic Design	3
CGT 136	Web Design and Development 1	3
CGT 166 or	Photography	3
CGT 157	Prepress	2
CGT 226	Digital Imaging 2—Photoshop	3
CGT 231	Electronic Publishing	3

Total Credits 14–15

PROGRAM TOTAL 29–30 CREDITS

Computer Graphics Technology Foundation Skills Certificate

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 127	Publishing—InDesign	3

CGT 161 or	History of Graphic Design	3
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CGT 244	History of Animation	3
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CGT Elective	3
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PROGRAM TOTAL 18 CREDITS

Computer Graphics Technology Post-Associate Certificate

The post-associate certificate is for those students who have a degree in computer graphics and/or are working in the profession and wish to add an additional area of specialty to their portfolio. Students should take a combination of 6 courses based on the specific area of study. It is highly recommended that CGT faculty be consulted when selecting courses. Students can assemble courses to develop expertise in interactive media and game design, digital art, web design, publishing, video graphics, graphic design, or 3D animation.

ART 105	Basic Drawing	3
ART 115	Art History 1	4
ART 116	Art History 2	4
ART 125	Life Drawing 1	3
ART 243	Sculpture 1	3
CGT 136	Web Design and Development 1	3
CGT 141	Introduction to Interactive Media and Game Design	3
CGT 149	Typography	3
CGT 154	Sound Editing for Graphic Artists	2
CGT 157	Prepress	2
CGT 163	Web Design and Development 2	3
CGT 166	Photography	3
CGT 168	Storyboarding	3
CGT 206	Scripting for Interactive Media and Game Design	3
CGT 208	Digital Video Production	3
CGT 210	Visual Effects Production	3
CGT 211	Flash	3
CGT 212	Flash Action Scripting	3
CGT 215	Motion Graphics 1—After Effects	3
CGT 226	Digital Imaging 2—Photoshop	3
CGT 231	Electronic Publishing	3
CGT 234	Web Design and Development 3	3
CGT 237	Dynamic Web Design With ColdFusion	3
CGT 242	Advanced Interactive Media and Game Design	3
CGT 244	History of Animation	3
CGT 246	Motion Graphics 2—After Effects	3
CGT 247	3D Animation—Introduction	3
CGT 252	3D Animation—Animating	3
CGT 254	3D Animation—Advanced Models and Textures	3

PROGRAM TOTAL 16–20 CREDITS

Computer Graphics Technology: Digital Art AAS Degree**SAMPLE SCHEDULE OF COURSES****First Year—Fall Semester**

CGT 109	Design Concepts and Technology	3
ART 105	Basic Drawing.....	3
CGT 125	Digital Imaging 1—Photoshop.....	3
ENG 101	English Composition 1	3
MATH 113	Intermediate Algebra for College Students.....	4

Total Credits 16**First Year—Winter Semester**

CGT 123	Illustration—Illustrator	3
CGT 127	Publishing—InDesign.....	3
Science	Select 1	4
BIOL 101	General Biology	
CHEM 111	General Chemistry 1	
PHYS 104	Introduction to Astronomy	
ART 125	Life Drawing 1	3

Total Credits 13**Second Year—Fall Semester**

CGT 226	Digital Imaging 2—Photoshop.....	3
ENG 102	English Composition 2.....	3
ART 205	Life Drawing 2	3
Art	Select 1	4
ART 115	Art History 1	
ART 116	Art History 2	
COMA 103	Fundamentals of Speech	3

Total Credits 16**Second Year—Winter Semester**

ART 243	Sculpture 1	3
or		
WELD 112	Contemporary Metal Sculpture 1	3
Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
CGT 257	Portfolio Preparation.....	3
Capstone	Select 1	3
CGT 250	Practical Application	
CGT 270*	Internship	
CGT 298*	Honors Studies	
Elective	Any ART or CGT course not previously taken... 3	

Total Credits 15**PROGRAM TOTAL 60 CREDITS**

* These classes are offered as independent learning.
Contact CGT faculty.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection

**Computer Graphics Technology:
Digital Art Certificate****SAMPLE SCHEDULE OF COURSES****First Year—Fall Semester**

CGT 109	Design Concepts and Technology	3
ART 105	Basic Drawing.....	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3

Total Credits 12**First Year—Winter Semester**

CGT 127	Publishing—InDesign.....	3
ART 115	Art History 1	4
or		
ART 116	Art History 2	4
CGT 226	Digital Imaging 2—Photoshop.....	3
ART 125	Life Drawing 1	3
ART 243	Sculpture 1	3
or		
WELD 112	Contemporary Metal Sculpture 1	3

Total Credits 16**PROGRAM TOTAL 28 CREDITS**

Computer Graphics Technology: 3D and Video Graphics AAS Degree

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 166	Photography	3
ENG 101	English Composition 1	3

Total Credits 15

First Year—Winter Semester

CGT 168	Storyboarding	3
CGT 244	History of Animation	3
CGT 247	3D Animation—Introduction	3
ENG 102	English Composition 2	3
MATH 113	Intermediate Algebra for College Students	4

Total Credits 16

First Year—Spring Session

COMA 103	Fundamentals of Speech	3
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Total Credits 3

Second Year—Fall Semester

CGT 208	Digital Video Production	3
CGT 215	Motion Graphics 1—After Effects	3
Track Option	Select 1	3
3D Track:	CGT 254 3D Animation—Advanced Models and Textures	
Video Track:	CGT 226 Digital Imaging 2—Photoshop	
Science	Select 1	4
BIOL 101	General Biology	
CHEM 111	General Chemistry 1	
PHYS 104	Introduction to Astronomy	
BUS 122	Advertising	3

Total Credits 16

Second Year—Winter Semester

CGT 246	Motion Graphics 2—After Effects	3
Track Option	Select 1	3
3D Track:	CGT 252 3D Animation—Animating	
Video Track:	CGT 210 Visual Effects Production	
Capstone	Select 1	3
CGT 250	Practical Application	
CGT 270*	Internship	
CGT 298*	Honors Studies	
Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
CGT 256	Portfolio—3D Reel Development	3

Total Credits 15

PROGRAM TOTAL 65 CREDITS

* These classes are offered as independent learning.
Contact CGT faculty.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Computer Graphics Technology: Video Graphics Certificate

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 166	Photography	3

Total Credits 12

First Year—Winter Semester

CGT 168	Storyboarding	3
CGT 208	Digital Video Production	3
CGT 215	Motion Graphics 1—After Effects	3
CGT 247	3D Animation—Introduction	3

Total Credits 12

Second Year—Fall Semester

CGT 210	Visual Effects Production	3
CGT 246	Motion Graphics 2—After Effects	3

Total Credits 6

PROGRAM TOTAL 30 CREDITS

Computer Graphics Technology—3D Animation Certificate

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 166	Photography	3

Total Credits 12

First Year—Winter Semester

CGT 168	Storyboarding	3
CGT 244	History of Animation	3
CGT 247	3D Animation—Introduction	3
CGT 215	Motion Graphics 1—After Effects	3

Total Credits 12

First Year—Spring Session

CGT 254	3D Animation—Advanced Models and Textures	3
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Total Credits 3

Second Year—Fall Semester

CGT 246	Motion Graphics 2—After Effects	3
CGT 252	3D Animation—Animating	3

Total Credits 6

PROGRAM TOTAL 33 CREDITS

Computer Graphics Technology: Interactive Media and Game Design AAS Degree**SAMPLE SCHEDULE OF COURSES****First Year—Fall Semester**

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3
CGT 166	Photography.....	3
ENG 101	English Composition 1	3

Total Credits 15**First Year—Winter Semester**

CGT 149	Typography	3
CGT 168	Storyboarding	3
CGT 244	History of Animation	3
Track Option	Select 1	3
Director Track:	CGT 141 Introduction to Interactive Media and Game Design	
Flash Track:	CGT 211 Flash	
ENG 102	English Composition 2	3

Total Credits 15**Second Year—Fall Semester**

CGT 154	Sound Editing for Graphic Artists.....	2
Track Option	Select 1	3
Director Track:	CGT 206 Scripting for Interactive Media and Game Design	
Flash Track:	CGT 212 Flash Action Scripting	
COMA 103	Fundamentals of Speech	3
Science	Select 1	4
BIOL 101	General Biology	
CHEM 111	General Chemistry 1	
PHYS 104	Introduction to Astronomy	
BUS 122	Advertising.....	3

Total Credits 15**Second Year—Winter Semester**

CGT 242	Advanced Interactive Media and Game Design.....	3
CGT 256	Portfolio—3D Reel Development.....	3
Capstone	Select 1	3
CGT 250	Practical Application	
CGT 270*	Internship	
CGT 298*	Honors Studies	
Social Science	Select 1	3
	PSYCH 153 Human Relations	
	POLS 105 Survey of American Government	
MATH 113	Intermediate Algebra for College Students.....	4

Total Credits 16**PROGRAM TOTAL 61 CREDITS**

* These classes are offered as independent learning.
Contact CGT faculty.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Computer Graphics Technology: Interactive Media and Game Design Certificate**SAMPLE SCHEDULE OF COURSES****First Year—Fall Semester**

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3
Track Option	Select 1	3
Director Track:	CGT 141 Introduction to Interactive Media and Game Design	
Flash Track:	CGT 211 Flash	
CGT 166	Photography.....	3

Total Credits 15**First Year—Winter Semester**

CGT 149	Typography	3
CGT 168	Storyboarding.....	3
Track Option	Select 1	3
Director Track:	CGT 206 Scripting for Interactive Media and Game Design	
Flash Track:	CGT 212 Flash Action Scripting	
CGT 154	Sound Editing for Graphic Artists.....	2

Total Credits 11**First Year—Spring Session**

CGT 242	Advanced Interactive Media and Game Design.....	3
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Total Credits 3**PROGRAM TOTAL 29 CREDITS**

MUSIC

Credentials

Music Foundations certificate.....	29 cr.
Music Intermediate certificate	30 cr.

Major Description

Whether you love making music or just enjoy learning about it, Schoolcraft's music program has something for you. Examine the history of musical styles dating all the way back to the 1600s, or enhance your own vocal or instrumental abilities. Start with a music foundations certificate or take it up an octave with our music intermediate certificate.

- Gain performance experience through one of Schoolcraft's performance ensembles.
- Learn to appreciate music as a form of art through courses in music theory and history.
- Expand your horizons by attending one of the many recitals by professional performers held on campus each year.

The music foundations certificate is designed for students who want to build their musical abilities for personal growth and enjoyment. Students interested in transferring to a four-year institution as a music major or pursuing a career as a professional musician are advised to complete the music intermediate certificate* with the guidance of the Music Department faculty.

Successful students completing this certificate will be able to notate all intervals, simple rhythmic patterns and basic chord progressions. Students will have a good general knowledge of musical styles from the 1600s to the present day; will have gained experience in performing publicly in ensembles; and will also have developed elementary training as soloists in voice or as instrumentalists.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MUSIC 104	Basic Materials in Music Theory	3
Music	Select 1	2
MUSIC 121	Class Piano 1	
MUSIC 131	Applied Music—Piano 1	
MUSIC 105	Music Appreciation	3
Music	Select 1	2
MUSIC 133	Applied Music—Voice 1	
MUSIC 135	Applied Music—Instrumental 1	
MUSIC 164	Music History 1—17th and 18th Centuries.....	3
Music*	Select 1 Music course not already taken from the list below	minimum 1

Total Credits 14

Music: Foundations Certificate

First Year—Winter Semester

Music	Select 1	2
MUSIC 122**	Class Piano 2	
MUSIC 132	Applied Music—Piano 2	
Music	Select 1	2
MUSIC 134	Applied Music—Voice 2	
MUSIC 136	Applied Music—Instrumental 2	
HUM 106	Introduction to Art and Music	1
Electives	English Literature, Poetry or Art Appreciation Suggested	6
MUSIC 171	Music Technology 1	3
Music*	Select 1 Music course not already taken from the list below	minimum 1

Total Credits 15

PROGRAM TOTAL 29 CREDITS

* Number of credits may vary depending on the course selection.

** Requires audition.

Music courses:

MUSIC 117**	Choir 1	2
MUSIC 118**	Choir 2	2
MUSIC 124	Chamber Singers 1	1
MUSIC 127	Chamber Singers 2	1
MUSIC 133	Applied Music—Voice 1	2
MUSIC 134	Applied Music—Voice 2	2
MUSIC 135	Applied Music—Instrumental 1	2
MUSIC 136	Applied Music—Instrumental 2	2
MUSIC 141	Wind Ensemble 1	2
MUSIC 142	Jazz Band 1	2
MUSIC 143	Practice Teaching and Practicum in Piano Teaching 1	2
MUSIC 168	Synthesizer Ensemble 1	3
MUSIC 169	Synthesizer Ensemble 2	3

Music: Intermediate Certificate

The music intermediate certificate is designed for students who wish to transfer to a four-year institution as a music major and/or pursue music as a profession. Students in this program must consult with a Music Department faculty member before beginning this program. Faculty will provide information about expectations for appropriate course work and practice schedules for students intending to major in music. Completion of this certificate does not automatically qualify students for admission to a four-year music major program.

The quality of the student's musicianship and auditions are key factors in admission decisions.

Successful students completing this certificate will be able to notate moderately difficult rhythmic patterns and moderately difficult chord progressions. Students will have developed a more specific knowledge of music from the 1600s to the present day. Students will have gained experience in performing publicly in ensembles, and will have developed technical and musical skills as well as experience in performing as soloists in voice or as instrumentalists in public recitals and concerts.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

Students are advised to consult with Music Department faculty before beginning classes in this certificate.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MUSIC 137	Sight Singing and Ear Training 1.....	2
MUSIC 153	Music Theory 1	3
Music	Select 1	2
MUSIC 131***	Applied Music—Piano 1	
MUSIC 231***	Applied Music—Piano 3	
Music	Select 1	2
MUSIC 233***	Applied Music—Voice 3	
MUSIC 235***	Applied Music—Instrumental 3	
Music*	Select 1 or 2 Music courses not already taken from the list below	minimum 3

Total Credits 12

First Year—Winter Semester

Music	Select 1	2
MUSIC 132***	Applied Music—Piano 2	
MUSIC 232***	Applied Music—Piano 4	
Music	Select 1	2
MUSIC 234***	Applied Music—Voice 4	
MUSIC 236***	Applied Music—Instrumental 4	
MUSIC 138	Sight Singing and Ear Training 2.....	2
MUSIC 165	Music History 2— 19th and 20th Centuries	3
MUSIC 154	Music Theory 2	3
Music*	Select 1 or 2 Music courses not already taken from the list below	minimum 3

Total Credits 15

First Year—Spring/Summer Session

Elective	English Literature, Poetry, or Art Appreciation Suggested.....	3
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Total Credits 3

PROGRAM TOTAL 30 CREDITS

* Number of credits may vary depending on the course selection.

** Requires audition.

*** Course selection dependent on courses taken in the foundations certificate.

Music courses:

(Check course prerequisites before making selection)

MUSIC 117**	Choir 1.....	2
MUSIC 118**	Choir 2.....	2
MUSIC 217**	Choir 3.....	2
MUSIC 218**	Choir 4.....	2
MUSIC 124	Chamber Singers 1	1
MUSIC 127	Chamber Singers 2	1
MUSIC 224	Chamber Singers 3	1
MUSIC 227	Chamber Singers 4	1
MUSIC 133	Applied Music—Voice 1.....	2
MUSIC 134	Applied Music—Voice 2.....	2
MUSIC 233	Applied Music—Voice 3.....	2
MUSIC 234	Applied Music—Voice 4.....	2
MUSIC 135	Applied Music—Instrumental 1.....	2
MUSIC 136	Applied Music—Instrumental 2.....	2
MUSIC 235	Applied Music—Instrumental 3.....	2
MUSIC 236	Applied Music—Instrumental 4.....	2
MUSIC 141	Wind Ensemble 1	2
MUSIC 241	Wind Ensemble 2	2
MUSIC 142	Jazz Band 1	2
MUSIC 242	Jazz Band 2	2
MUSIC 168	Synthesizer Ensemble 1	3
MUSIC 169	Synthesizer Ensemble 2	3
MUSIC 268	Synthesizer Ensemble 3	3
MUSIC 269	Synthesizer Ensemble 4	3

Credentials

Piano Teacher certificate42 cr.

Major Description

If you dream of sharing your love for the piano with others, then Schoolcraft's unique piano teacher certificate is perfect for you. The program offers a thorough grounding in teaching materials and techniques along with music theory and history. You will also have the opportunity to practice your teaching skills right on campus in our group piano classes for children. Prepare for a career of teaching piano in music academies, community education programs, or out of your own home.

- All applicants must audition in order to enter the piano teacher certificate program.
- Challenge your own abilities and prepare to share your love of music with the next generation.
- Establish a foundation for state and national Music Teachers Association certification.

Job Titles & Median Salaries or Hourly Rates

- Piano Teacher: \$36,340 (national)

Music: Piano Teacher Certificate

The piano teacher certificate program is designed for pianists with sufficient background to pursue professional careers as private piano teachers. The curriculum is structured to provide instruction in piano teaching materials and techniques as well as music theory and history. In addition, students are given numerous opportunities to observe and teach children enrolled in group piano classes on campus. (Two supervised teaching sessions of children are required.)

In order to enter the piano teacher certificate program, each applicant must audition to demonstrate an appropriate level of musicianship.

All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. Students who satisfactorily complete the program requirements, and upon recommendation of the music faculty, qualify for a certificate of program completion. Applied Music has an added fee.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

MUSIC 131	Applied Music—Piano 1	2
MUSIC 143	Practice Teaching and Practicum in Piano Teaching 1	2
MUSIC 153	Music Theory 1	3
MUSIC 164	Music History 1—17th and 18th Centuries.....	3
MUSIC 201	Keyboard Skills for Piano Teachers 1	2

Total Credits 12**First Year—Winter Semester**

MUSIC 132	Applied Music—Piano 2	2
MUSIC 144	Practice Teaching and Practicum in Piano Teaching 2	2
MUSIC 154	Music Theory 2	3
MUSIC 165	Music History 2—19th and 20th Centuries.....	3
MUSIC 247*	Piano Teaching Techniques and Materials 1	3

Total Credits 13**Second Year—Fall Semester**

MUSIC 137	Sight Singing and Ear Training 1	2
MUSIC 202	Keyboard Skills for Piano Teachers 2	2
MUSIC 231	Applied Music—Piano 3	2
MUSIC 243	Practice Teaching and Practicum in Piano Teaching 3	2

Total Credits 8**Second Year—Winter Semester**

MUSIC 138	Sight Singing and Ear Training 2	2
MUSIC 232	Applied Music—Piano 4	2
MUSIC 244	Practice Teaching and Practicum in Piano Teaching 4	2
MUSIC 257*	Piano Teaching Techniques and Materials 2	3

Total Credits 9**PROGRAM TOTAL 42 CREDITS**

* These classes are offered on a rotational basis.
Contact Liberal Arts office for current offerings.

SOUND RECORDING TECHNOLOGY

Credentials

Sound Recording Technology certificate	32 cr.
Sound Recording Technology AAS degree	64–66 cr.

Major Description

Do you have an ear for music? Schoolcraft offers two programs that will help you build a career as a mixer, producer, audio equipment technician, or sound engineer. Our certificate program gives you the chance to improve your home studio skills or apprentice at a recording studio. Our associate degree pulls you even deeper into the understanding of all the latest and greatest technology and techniques of live concert and studio recordings. Keep up to date in this ever-changing field in a program that is committed to staying current.

- Explore the opportunity to apprentice at a recording studio or other media outlet.
- Check out basic courses in vocal and instrumental performance to help you understand music from the musicians' perspective.
- Credits earned in the certificate program may count toward a Schoolcraft associate in applied science degree and transfer toward a bachelor's degree at a four-year college or university.

Job Titles & Median Salaries or Hourly Rates

- Audio Equipment Technician: \$33,390 (national)
- Sound Engineering Technician: \$49,764 (Michigan)

The recording technology associate degree program is designed to prepare the student for transfer to institutions offering a bachelor's degree in recording engineering or for apprenticeships at recording studios and various media venues. The program will teach the student the fundamentals and techniques relative to live concert and studio recording.

Understanding the musical perspective is an important focus of the program. The required music courses will assist the recording engineer in better understanding what the performing musician is experiencing and will in turn improve the recording outcome.

Technological changes directly related to the recording industry are frequently introduced. The program is committed to staying current and will help the student understand new directions in the technology.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

HUM 106	Introduction to Art and Music	1
MUSIC 104	Basic Materials in Music Theory	3
MUSIC 121	Class Piano 1	2
SRT 121	Basic Sound and Recording Techniques 1	3
MATH 113	Intermediate Algebra for College Students.....	4
ENG 101	English Composition 1	3

Total Credits 16

Sound Recording Technology AAS Degree

First Year—Winter Semester

Music	Select 1	2–3
MUSIC 117	Choir 1	
MUSIC 168	Synthesizer Ensemble 1	
MUSIC 141	Wind Ensemble 1	
MUSIC 142	Jazz Band 1	
SRT 110	Keyboard Skills for Recording Engineers	1
SRT 122	Basic Sound and Recording Techniques 2	3
PHYS 123	Applied Physics.....	5
SRT 150	Ear Training for Recording Engineers	2

Total Credits 13–14

First Year—Spring/Summer Session

ENG 102	English Composition 2	3
COMA 103	Fundamentals of Speech	3

Total Credits 6

Second Year—Fall Semester

MUSIC 171	Music Technology 1.....	3
SRT 221	Advanced Audio Production 1	3
MUSIC 137	Sight Singing and Ear Training 1	2
ELECT 131	Basic Measurement and Reporting Skills	3
Social Science	Select 1	3–4
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	

Total Credits 14–15

Second Year—Winter Semester

MUSIC 138	Sight Singing and Ear Training 2.....	2
Music	Select 1	3
MUSIC 105	Music Appreciation	
MUSIC 149	Popular Music Culture in America	
MUSIC 172	Music Technology 2.....	3
SRT 222	Advanced Audio Production 2	3
GEOG 133	World Regional Geography.....	4

Total Credits 15

PROGRAM TOTAL 64–66 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Sound Recording Technology Certificate

The sound recording technology certificate will provide the student with skills important to the apprentice at recording studios and for quality home studio production. The program will prepare the student to understand the functions of audio signals and the sound reproduction equipment. The program will also acquaint the student with emerging audio formats.

Listening in the manner of a recording engineer will be stressed as well as some fundamental music skills important to the musician's point of view.

Technological changes directly related to the recording industry are frequently introduced. The program is committed to staying current and will help the student understand new directions in technology.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MUSIC 104	Basic Materials in Music Theory	3
MUSIC 105	Music Appreciation	3
MUSIC 121	Class Piano 1	2
SRT 121	Basic Sound and Recording Techniques 1	3
ELECT 131	Basic Measurement and Reporting Skills	3

Total Credits 14

First Year—Winter Semester

SRT 110	Keyboard Skills for Recording Engineers	1
MUSIC 171	Music Technology 1	3
MUSIC 172	Music Technology 2	3
SRT 122	Basic Sound and Recording Techniques 2	3
SRT 150	Ear Training for Recording Engineers	2

Total Credits 12

First Year—Spring Session

SRT 221	Advanced Audio Production 1	3
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Total Credits 3

First Year—Summer Session

SRT 222	Advanced Audio Production 2	3
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Total Credits 3

PROGRAM TOTAL 32 CREDITS

THEATRE

Credentials

Theatre Program AA degree60 cr.

Major Description

Whether you want to be in the spotlight or work behind the curtain, Schoolcraft offers an array of possibilities. Our theatre program balances live stage experience with liberal arts classes, and will provide you with a solid background of acting, stagecraft, lighting, stage makeup, and theatre history. Express yourself as you earn credits that may count toward an associate degree or transfer toward a bachelor's degree at a four-year institution. Embark on a career as a professional actor, director, producer, agent, announcer, makeup artist, set designer, or lighting designer.

- Take part in two on-campus theatre productions each year.
- Join the many Schoolcraft graduates who now work professionally in theatre, television, and film.
- Explore your options and expand your horizons.
- Credits may count toward a Schoolcraft associate in arts degree and transfer toward a bachelor's degree at a four-year college or university.

The theatre program is designed to provide students with a balanced curriculum of theatre and liberal arts courses that will prepare them to transfer to a four-year institution. This program includes performance and the technical aspects of theatre, including theory and practical experiences in theatre.

All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in arts degree.

Note: The Theatre Department has adopted a dinner-theatre format for production with two plays produced annually.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 101	English Composition 1	3
BIOL 101	General Biology	4
THEA 120	Theatre Activities 1	1
THEA 208	Acting 1	3
THEA 101*	Introduction to Theatre.....	3

Total Credits 14

First Year—Winter Semester

ENG 102	English Composition 2.....	3
THEA 121	Theatre Activities 2.....	1
THEA 207	Stagecraft and Lighting.....	3
THEA 209	Acting 2	3
MATH	Select any four-credit 100-level course	4

Total Credits 14

Theatre Program AA Degree

Second Year—Fall Semester

THEA 220	Theatre Activities 3.....	1
COMA 103	Fundamentals of Speech	3
HIST 153	Contemporary America—U.S. History.....	3
ENG 248	Introduction to Literature—Shakespeare	3
POLS 105	Survey of American Government.....	3
THEA 231*	History of Theatre 1.....	3

Total Credits 16

Second Year—Winter Semester

THEA 221	Theatre Activities 4.....	1
THEA 241*	Oral Interpretation of Literature	3
ENG 245	Introduction to Literature—Drama	3
PSYCH 201	Introductory Psychology.....	4
THEA 232*	History of Theatre 2.....	3
THEA 204	Stage Makeup.....	2

Total Credits 16

PROGRAM TOTAL 60 CREDITS

* These classes are offered on a rotational basis.

Contact Liberal Arts office for current offerings.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

ARTS, HUMANITIES & COMMUNICATIONS ADDITIONAL AREAS OF STUDY

FINE ARTS

Credentials

Associate in Fine Arts (AFA) degree60 cr.

Major Description

If you dream of embarking on a creative career, you can begin your journey at Schoolcraft.

Our fine arts degree allows you to take a concentration of courses in art, music or humanities and gives you the credentials for transfer to a four-year college or university.

Whether you love writing, drawing, design, playing a musical instrument or digging into humanity's artistic past, we've got a wide variety of courses to explore. And since Schoolcraft is a hub of culture for the entire region, there are plenty of opportunities to perform, create, publish or display your work.

- The specific courses required will be determined by the destination college or university and the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

LIBERAL ARTS

Credentials

Associate in Arts (AA) degree60 cr.

Major Description

An associate in arts degree with an emphasis in liberal arts can lay the groundwork for many different career paths. It demonstrates that you are an educated and well-rounded person with an aptitude for learning, and it sets the stage for success in a bachelor's degree program.

- The program provides breadth and depth of coursework, offering courses in a wide range of disciplines, including anthropology, art, biology, chemistry, communications, economics, English, foreign language, geography, geology, history, humanities, literature, mathematics, music, philosophy, physics, political science, psychology, sociology, and theatre.
- The specific courses required will be determined by the destination college or university and the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

Courses are offered in the following subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

ART AND DESIGN

Explore your artistic side in our drawing, painting, sculpture, ceramics, design, art history, art education and art appreciation classes. Earn credits that may count toward a Schoolcraft associate degree and transfer toward a bachelor's degree, and gain skills that can be applied to your career as an architect, painter, sculptor, illustrator, fashion designer, interior designer, photographer, graphic designer, Web designer, curator or art educator.

- Benefit from our talented teachers and modern classrooms.

COMMUNICATION ARTS

Good communication is crucial at work and in life. We offer speech, interpersonal communications, argumentation and persuasion, mass communications and communication for leaders.

Build a career in education, politics, marketing, publishing, broadcasting, writing, media, business, law or medicine.

- These courses can help you succeed in any career and are especially helpful if you are pursuing a future in education, business, or health care, or in one of the communication arts, such as broadcasting.
- Students have the opportunity for hands-on experience at local television stations.
- Scholarships are available through annual speech and essay competitions.

ARTS, HUMANITIES & COMMUNICATIONS ADDITIONAL AREAS OF STUDY

ENGLISH

Our diverse program invites you to discover the writer within yourself while exploring the great literary works of others. Courses cover everything from basic writing skills and creative writing to journalism, technical writing, and literature through the ages.

An education in English can help you pursue a life in letters as an author, editor, technical writer or screenwriter. It also offers a strong foundation for careers in public relations, advertising, law, education and more.

- Students who succeed in English courses can apply to be a Writing Fellow and help other students improve their writing skills.
- Students who seek to publish their work can apply for positions with the student newspaper, the *Schoolcraft Connection*, and can submit entries to *The MacGuffin* literary journal.

ENGLISH AS A SECOND LANGUAGE

At Schoolcraft we believe that everyone should have the opportunity to pursue their educational goals. For many individuals, building a strong foundation in the English language is the first step.

In our English as a Second Language courses, professional and compassionate instructors will help you develop strong communication, speaking, listening, reading and writing skills in the English language.

- All of the English as a Second Language courses require a placement test prior to registration.

FOREIGN LANGUAGES

- Arabic
- Chinese
- French
- German
- Italian
- Spanish

Whether you want to prepare for a trip abroad, or explore a different culture from your very own corner of the world, we can help you learn the language of your dreams.

Schoolcraft College offers courses in elementary and intermediate Arabic, Chinese, French, German, Italian and Spanish. A world of cosmopolitan career opportunities opens up to multi-lingual individuals, who may work as translators, interpreters, educators, international relations experts, or linguists.

HISTORY

Satisfy your curiosity about the region, nation, and world as you build a future as a researcher, journalist, documentary editor, archivist, librarian, or lawyer. Study the past to understand the future, because where we've been says a lot about where we're going. Build up a bank of useful knowledge about Michigan, America, and the world, all while earning credits that may count toward a Schoolcraft associate degree and transfer toward a bachelor's degree.

- Take a unique course on the Great Lakes, or take U.S. Business History to explore the ever-changing landscape of American business.

HUMANITIES

Dive deep into the realm of music, art, culture, and history to get a taste of the world outside of southeast Michigan and the United States. You will get the chance to explore courses on topics ranging from Western masterpieces to studies of popular culture, mass media, and the human condition. Earn credits that may count toward a Schoolcraft associate degree and transfer toward a bachelor's degree. Most importantly, you will have the chance to build a solid foundation for virtually any career, especially education, writing, marketing, regional planning, public relations, and the arts.

- Take part in field study courses that include trips to England, France, Italy, and Spain for hands-on experiences of foreign arts and cultures.
- Enhance your knowledge on classic Western painting, sculpting, symphonies, and architecture.

PHILOSOPHY

Our courses in philosophy will introduce you to basic questions in ethics, politics, religion, logic, and more. You will learn to think outside the box, and how to face today's world with a critical eye. Prepare yourself for a career in business, writing, teaching, communications, or public relations while earning credits that may count toward a Schoolcraft associate degree and transfer toward a bachelor's degree.

- Learn to think critically about contemporary social, moral, and ethical issues.
- Challenge yourself to discern valid arguments from invalid ones by applying abstract concepts to issues in today's society.

BUSINESS & INFORMATION TECHNOLOGY



Courses in Business and Information Technology provide an important foundation for a wide variety of careers in any number of industries and fields. Whether you are looking to be self-employed, work for a small or mid-sized company, or join a Fortune 500 firm, Schoolcraft can give you the skills and knowledge you need to be well on your way.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Accounting degree and certificate	41–42
• Accounting for Small Business skills certificate	42
• ACCT courses	115–116
Aviation Management degree and skills certificate ..	43–44
• AVM courses	118–119
Business	
• Business Administration degree	12, 58
• Basic certificate	46
• General degree	45
• Marketing and Applied Management degree	46
• Small Business for Entrepreneurs degree and certificate	47
• BUS courses	122–123
Business Information Technology degree and certificate	48–49
Computer Information Systems	
• Introductory certificate	50
• Microcomputer Support Technician degree	51
• Networking Technology Integration certificate	51
• Post-associate certificate	54
• Programming degree and certificate	52
• Web Specialist degree and certificate	53
• CIS courses	132–134
Computer Service Technician certificate	54
• COMPS courses	134
Cosmetology Management degree	55
Economics courses (ECON)	58, 139
Office Information Systems	
• Office Administration degree	56
• Office Specialist certificate and skills certificate	57
• OIS courses	166–167

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ACCOUNTING

Credentials

Accounting for Small Business skills certificate	17 cr.
Accounting certificate.....	33 cr.
Accounting AAS degree	62–65 cr.

Major Description

Every business needs someone to mind the money.

If you love numbers, accounting can be your key to working in virtually any industry.

Schoolcraft's accounting program will prepare you for a career as a bookkeeper or accountant. Where you work is up to you—retail, health, education, manufacturing, big business—or your own venture.

Classes cover principles of accounting, income tax preparation, payroll, current software and much more.

An eye for detail, a head for numbers and the motivation to be self-directed are critical in this field.

- Accounting associate in applied science degree: This program qualifies you for an AAS degree and prepares you for transfer to a four-year university.
- Accounting certificate: This program, which takes approximately three semesters to complete, will prepare you for a job as an entry-level bookkeeper.
- Accounting for small business skills certificate: This program is a good option if you're looking for an entry-level bookkeeping position in a specialized area, to enhance your credentials or manage a small business. A certificate of completion is granted after completion of required courses with a grade of 2.0 or better.

Job Titles & Median Salaries or Hourly Rates

- Clerks (accounting, billing, bookkeeping, data entry, finance, payroll): \$29,999–\$34,030 (national)
- Tax Preparer: \$34,030 (national)
- Accountant (requires bachelor's degree): \$60,670 (national)
- Auditor (requires bachelor's degree): \$61,690 (national)

The accounting program is designed to familiarize students with the work and challenges facing accountants. The program provides training for those planning to seek a career in accounting.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ACCT 201	Principles of Accounting 1.....	4
CIS 120	Software Applications	3
ENG 101	English Composition 1.....	3
Mathematics	Select 1	3–4
MATH 101	Business Mathematics	
MATH 113	Intermediate Algebra for College Students	

Total Credits 13–14

First Year—Winter Semester

ACCT 202	Principles of Accounting 2.....	4
CIS 180	Spreadsheet Applications—Current Software...	3
Elective	Select 1	3
ACCT 260	Computerized Accounting Using Peachtree	
ACCT 263	Computerized Accounting Using QuickBooks	
ECON 201	Principles of Macroeconomics	4

Total Credits 14

First Year—Spring/Summer Session

COMA 103	Fundamentals of Speech	3
ENG 106	Business English	3

Total Credits 6

Accounting AAS Degree

Second Year—Fall Semester

ACCT 221	Intermediate Accounting 1	4
ACCT 226	Cost Accounting	4
BUS 207	Business Law 1.....	3
Elective	Select 1	3–4
ACCT 262	Payroll Accounting	
BUS 101	Introduction to Business	
ECON 202	Principles of Microeconomics	

Total Credits 14–15

Second Year—Winter Semester

ACCT 222	Intermediate Accounting 2	4
Elective	Select 4 tax credit hours below	4
ACCT 238	Federal Tax Accounting	4
OR		
ACCT 138 and	Income Tax Preparation.....	2
ACCT 139	Michigan Taxes.....	2
Elective	Select 1	3–4
BUS 202	Business Ethics	
BUS 240	International Business	
PSYCH 153	Human Relations	
POLS 209	International Relations	
PHIL 247	Logic	
SOC 201	Principles of Sociology	
Science*	Select any General Education Science course ...	4

Total Credits 15–16

PROGRAM TOTAL 62–65 CREDITS

* Number of credits may vary depending on the General Education Science course selection.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Accounting Certificate

The accounting program is designed to familiarize students with the work and challenges facing accountants. This certificate program prepares the student for a job as an entry-level bookkeeper within an accounting department or firm.

All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. Students who successfully complete all program courses qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

ACCT 201	Principles of Accounting 1	4
CIS 120	Software Applications	3
ENG 101	English Composition 1	3
MATH 101	Business Mathematics	3

Total Credits 13**First Year—Winter Semester**

ACCT 202	Principles of Accounting 2	4
Elective	Select 4 tax credit hours below	4
ACCT 238	Federal Tax Accounting	4

OR

ACCT 138 and	Income Tax Preparation	2
ACCT 139	Michigan Taxes	2
BUS 207	Business Law 1	3
Elective	Select 1	3
ACCT 260	Computerized Accounting Using Peachtree	
ACCT 263	Computerized Accounting Using QuickBooks	

Total Credits 14**Second Year—Fall Semester**

COMA 103	Fundamentals of Speech	3
ACCT 262	Payroll Accounting	3

Total Credits 6**PROGRAM TOTAL 33 CREDITS****Accounting for Small Business Skills Certificate**

The accounting program is designed to familiarize students with the work and challenges facing accountants. This certificate program is designed for those: who seek entry-level bookkeeping positions in specialized areas; who seek a credential in order to receive pay raises, promotions, or benefits from employers; or who currently own or are starting a small business.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

ACCT 201	Principles of Accounting 1	4
CIS 120	Software Applications	3

Total Credits 7**First Year—Winter Semester**

ACCT 263	Computerized Accounting Using QuickBooks...	3
Elective	Select 4 tax credit hours below	4
ACCT 238	Federal Tax Accounting	4

OR

ACCT 138 and	Income Tax Preparation	2
ACCT 139	Michigan Taxes	2

Total Credits 7**Second Year—Fall Semester**

Elective	Select 1	3
CIS 180	Spreadsheet Applications—Current Software	
ACCT 262	Payroll Accounting	

Total Credits 3**PROGRAM TOTAL 17 CREDITS**

AVIATION MANAGEMENT

Notice: New students are not currently being admitted into the aviation management program. Program information is provided here for current students who are working toward completion of program requirements.

Credentials

Aviation Management skills certificate18 cr.
Aviation Management AAS degree..... 60–63 cr.

Major Description

The roar of jets, people from around the world, the promise of far-off lands...there's something magical about air travel. Let your career take flight with a job in aviation. Schoolcraft's program readies students for a wide variety of positions in the industry, from airport management and security to flight scheduling and cargo handling.

Courses include the basics of flight and navigation, the evolution of aviation, meteorology, aircraft maintenance, aviation law, airport management and more.

- Aviation management associate in applied science degree: Successful completion of all college requirements results in an AAS degree and prepares you for entry level jobs and transfer to a four-year college or university.
- Aviation management skills certificate: If you're already involved in the aviation industry but want the credentials to advance, this certificate—which provides exposure to key areas of aviation—is perfect for you.

Job Titles & Median Salaries or Hourly Rates

- Airline Cargo Handling Supervisor: \$42,016 (Michigan)
- Airfield Operations Specialist: \$44,454 (national)
payscale.com

Aviation Management AAS Degree

The aviation management program provides an excellent broad exposure to key areas of aviation leading to an associate degree. The nature of the program recognizes that there are many individuals working in the field of aviation who may wish to broaden their aviation knowledge. This program has been designed to prepare and/or enhance a student's readiness for growth in an aviation career or in further aviation education. Course content includes the basics of flight and airspace/navigation, the evolution of aviation through to the latest advancements, meteorology, a broad perspective of corporate operations and aircraft maintenance businesses, aviation regulations/legislation and law, and the planning and operations of airports.

Three student profiles were considered in the development of this program:

- 1) The person who is already involved in a career in aviation who wishes to obtain a certificate or degree to enhance career growth potential, or simply wishes to obtain more knowledge in a specific area of aviation.
- 2) The student just entering the college environment who wishes to explore aviation as a career possibility while obtaining initial college course credit OR who definitely wants to obtain a certificate or associate degree leading to an aviation career.
- 3) The student who wishes to obtain initial credit at the community college level for economical or convenience reasons and intends to transfer to a four-year aviation degree program with either a flight or non-flight focus.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 101	English Composition 1.....	3
CIS 120	Software Applications	3
AVM 101	Perspectives in Aviation.....	3
AVM 103	Aviation Meteorology.....	3
AVM 104	Aviation Legislation.....	3

Total Credits 15

First Year—Winter Semester

English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
AVM 102	Aviation History	3
AVM 201	Aviation Law	3
AVM 203	Airport Planning and Management.....	3

Total Credits 12

First Year—Spring Session

Elective	Select from the list below	6
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Total Credits 6

Second Year—Fall Semester

POLS 105	Survey of American Government.....	3
Social Science	Select 1	3–4
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	
HUM 106	Introduction to Art and Music	1
Elective	Select from the list below	6–7

Total Credits 13–15

Second Year—Winter Semester

PHYS 104	Introduction to Astronomy.....	4
COMA 103	Fundamentals of Speech.....	3
MATH 111	Applications—Utility of Math.....	4
Elective	Select from the list below	3–4

Total Credits 14–15

PROGRAM TOTAL 60–63 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

AVM 105	Private Pilot Ground School	3
AVM 202	Aviation Maintenance Management	3
AVM 204	Corporate Aviation Management	3
BUS 101	Introduction to Business.....	3
BUS 207	Business Law 1.....	3
BUS 217	Business Management	3
BUS 220	Supervision	3
BUS 230	Human Resource Management	3
GEOG 133	World Regional Geography.....	4
GEOG 135	Earth Systems	4
PHIL 243	An Introduction to Philosophy.....	3
SOC 201	Principles of Sociology.....	3
SOC 210	Cultural Diversity	3

Aviation Management Skills Certificate

This certificate has been designed to prepare and/or enhance career growth potential or simply provide more knowledge in a specific area of aviation. The certificate is appropriate for the student entering the college environment who wishes to explore aviation as a career possibility OR who definitely wants to obtain a certificate to enhance an aviation career.

The aviation management skills certificate provides excellent broad exposure to key areas of aviation. Course content includes basics of flight and airspace/navigation, the evolution of aviation through to the latest advancements, meteorology, a broad perspective of corporate operations and aircraft maintenance businesses, aviation regulations/legislation and law, and the planning and operations of airports.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

AVM 101	Perspectives in Aviation.....	3
AVM 104	Aviation Legislation.....	3
Elective	<i>Select from the list below</i>	3

Total Credits 9

First Year—Winter Semester

AVM 102	Aviation History	3
AVM 203	Airport Planning and Management	3
Elective	<i>Select from the list below</i>	3

Total Credits 9

PROGRAM TOTAL 18 CREDITS

Electives

AVM 103	Aviation Meteorology.....	3
AVM 105	Private Pilot Ground School	3
AVM 201	Aviation Law	3
AVM 202	Aviation Maintenance Management	3
AVM 204	Corporate Aviation Management.....	3

BUSINESS

Credentials

Business-Basic certificate	32 cr.
Small Business for Entrepreneurs certificate	30-31 cr.
Business-General AAS degree.....	62-64 cr.
Marketing and Applied Management AAS degree.....	62-64 cr.
Small Business for Entrepreneurs AAS degree.....	62-64 cr.

Major Description

Our business offerings prepare you to own your own business or work in the corporate world and also lay the foundation for education in a bachelor's degree program. Whether your goal is to own your own business or run someone else's, you'll get the tools and insights you need to succeed.

- Business general associate in applied science degree: Want to keep your options open? This general program lays a foundation for several entry-level jobs. Students considering transferring to a bachelor's degree program at another college should explore the associate in business administration degree as an option.
- Business basic certificate: In this program, which generally takes one year to complete, you'll earn a certificate of completion and be prepared for an entry-level job or continued education.
- Marketing and applied management associate in applied science degree: If selling has always come naturally to you, this program will give you the academic credentials to back up your skills.
- Small business for entrepreneurs associate in applied science degree: Whether you want to manage a small business or open your own, this degree will allow you to establish a solid foundation in entrepreneurship. It can also prepare you for transfer to a four-year university.
- Small business for entrepreneurs certificate: Ready yourself for the unique challenges small business owners and entrepreneurs face in today's competitive world with this skills certificate.

Job Titles & Median Salaries or Hourly Rates

- Manager Trainee: \$35,256 (Michigan)
 - Market Researcher: \$33,840 (national)
 - Sales Manager/Supervisor: \$55,900 (Michigan)
 - Business Manager/Owner: \$34,392–\$75,076 (national)
- Small Business Chronicle*

The general business program is intended to provide students with a balanced curriculum composed of liberal arts, general business, and technical skills to develop a unified awareness of the activities and operational setting of a business. The program is intended to lay a foundation for a variety of entry-level positions in business that may ultimately lead to specialized study in some area of management training.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BUS 101	Introduction to Business.....	3
MATH 101	Business Mathematics.....	3
BUS 122	Advertising.....	3
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	
Humanities*	Select any General Education Humanities course.....	3
COMA 103	Fundamentals of Speech (recommended)	

Total Credits 15

First Year—Winter Semester

BUS 120	Strategic Selling	3
Elective	Select 1	4
ACCT 103	Introduction to Accounting	
ACCT 201	Principles of Accounting 1	
English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
PSYCH 153	Human Relations.....	3
Science*	Select any General Education Science course ...	4

Total Credits 17

Business-General AAS Degree

Second Year—Fall Semester

BUS 217	Business Management	3
BUS 220	Supervision	3
ECON 201	Principles of Macroeconomics	4
BUS 202	Business Ethics	3
BUS 240	International Business	3

Total Credits 16

Second Year—Winter Semester

BUS 204	Personal Finance	3
BUS 207	Business Law 1	3
BUS 215	Business on the Web.....	3
BUS 226	Principles of Marketing.....	3
Electives	Select from the list below	2-4

Total Credits 14-16

PROGRAM TOTAL 62-64 CREDITS

*Number of credits may vary depending on the General Education course selection.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

ACCT 138	Income Tax Preparation.....	2
BUS 103	Organizing a Small Business.....	3
BUS 104	Operating a Small Business	3
BUS 123	Consumer Behavior.....	3
BUS 161	Retail Principles and Practices	3
BUS 205	Personal Investing	3
BUS 206**	Foundation of Business Information Technology.....	3
BUS 208	Business Law 2.....	3
BUS 221**	Statistical Inference for Management Decisions.....	3
BUS 230	Human Resource Management	3
CIS 120	Software Applications	3
CIS 215	Advanced Software Applications.....	3
ENG 116	Technical Writing	3
MATH 122	Elementary Statistics.....	4

** These courses are designed for students pursuing the Walsh College Honors Fast Track Program.

Business-Basic Certificate

The basic business program introduces students to accounting, economics and the basics of business. Completion of the program positions the student for pursuit of an associate degree or for transition into the business community.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

BUS 101	Introduction to Business.....	3
MATH 101	Business Mathematics.....	3
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	
COMA 103	Fundamentals of Speech	3
BUS 220	Supervision	3

Total Credits 15**First Year—Winter Semester**

English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
Accounting	Select 1	4
ACCT 103	Introduction to Accounting	
ACCT 201	Principles of Accounting 1	
ECON 201	Principles of Macroeconomics	4
PSYCH 153	Human Relations	3

Total Credits 14**First Year—Spring Session**

BUS 202	Business Ethics	3
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Total Credits 3**PROGRAM TOTAL 32 CREDITS****Marketing and Applied Management AAS Degree**

The Schoolcraft College marketing and applied management program produces well-trained individuals who work in the distribution of goods and services. These individuals serve the customer and represent the company to the consumer. Therefore, graduates must be able to think, communicate and apply knowledge of business.

Career opportunities are available in occupations ranging from buying and selling to distribution management.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

BUS 101	Introduction to Business.....	3
BUS 122	Advertising.....	3
BUS 123	Consumer Behavior.....	3
Elective	Select 1	4
ACCT 103	Introduction to Accounting	
ACCT 201	Principles of Accounting 1	
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	

Total Credits 16**First Year—Winter Semester**

MATH 101	Business Mathematics.....	3
BUS 120	Strategic Selling.....	3
English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
PSYCH 153	Human Relations	3
Science*	Select any General Education Science course ...	4

Total Credits 16**Second Year—Fall Semester**

BUS 217	Business Management	3
BUS 220	Supervision	3
BUS 240	International Business	3
HUM 106	Introduction to Art and Music	1
ECON 201	Principles of Macroeconomics	4

Total Credits 14**Second Year—Winter Semester**

BUS 226	Principles of Marketing.....	3
BUS 202	Business Ethics	3
BUS 204	Personal Finance	3
BUS 215	Business on the Web.....	3
Electives	Select from the list below	4–6

Total Credits 16–18**PROGRAM TOTAL 62–64 CREDITS**

* Number of credits may vary depending on the General Education course selection.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

BUS 103	Organizing a Small Business.....	3
BUS 104	Operating a Small Business	3
BUS 161	Retail Principles and Practices	3
BUS 206**	Foundation of Business Information Technology.....	3
BUS 205	Personal Investing	3
BUS 207	Business Law 1.....	3
BUS 208	Business Law 2.....	3
BUS 221**	Statistical Inference for Management Decisions	3
BUS 230	Human Resource Management	3
CIS 120	Software Applications	3
CIS 180	Spreadsheet Applications—Current Software...3	
CIS 215	Advanced Software Applications.....	3
COMA 103	Fundamentals of Speech	3
ENG 116	Technical Writing.....	3
MATH 122	Elementary Statistics.....	4
OIS 100	Keyboarding 1	2

** These courses are designed for students pursuing the Walsh College Honors Fast Track Program.

Small Business for Entrepreneurs AAS Degree

The small business for entrepreneurs curriculum offers a well-balanced program of liberal arts courses, general business subjects, electives and the necessary training to meet the challenge of today's highly competitive business world. The small business for entrepreneurs curriculum is designed for those who already own and operate a small business, who are contemplating starting their own small business, or who seek employment opportunities as managers in small business.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BUS 101	Introduction to Business.....	3
BUS 103	Organizing a Small Business.....	3
BUS 122	Advertising.....	3
MATH 101	Business Mathematics.....	3
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	

Total Credits 15

First Year—Winter Semester

BUS 104	Operating a Small Business	3
Elective	Select 1	4
ACCT 103	Introduction to Accounting	
ACCT 201	Principles of Accounting 1	
English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
Science*	Select any General Education Science course ...	4
BUS 120	Strategic Selling	3

Total Credits 17

Second Year—Fall Semester

BUS 204	Personal Finance	3
BUS 220	Supervision	3
BUS 202	Business Ethics	3
HUM 106	Introduction to Art and Music	1
BUS 215	Business on the Web.....	3
Elective	Select from the list below	3

Total Credits 16

Second Year—Winter Semester

BUS 207	Business Law 1.....	3
BUS 226	Principles of Marketing.....	3
BUS 230	Human Resource Management	3
PSYCH 153	Human Relations.....	3
Elective	Select from the list below	2–4

Total Credits 14–16

PROGRAM TOTAL 62–64 CREDITS

**Number of credits may vary depending on the General Education Science course selection.*

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

ACCT 138	Income Tax Preparation.....	2
ACCT 263	Computerized Accounting Using QuickBooks.....	3
BUS 123	Consumer Behavior.....	3
BUS 161	Retail Principles and Practices	3
BUS 205	Personal Investing	3
BUS 208	Business Law 2.....	3
BUS 217	Business Management	3
BUS 240	International Business	3
CIS 120	Software Applications	3
CIS 215	Advanced Software Applications.....	3
ECON 201	Principles of Macroeconomics	4
ENG 116	Technical Writing	3

Small Business for Entrepreneurs Certificate

The small business for entrepreneurs certificate is for individuals considering starting a small business, those who already own a business or students who seek employment opportunities managing a small business. The coursework prepares learners for the unique challenges small business owners and entrepreneurs routinely deal with in today's highly competitive business world.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BUS 103	Organizing a Small Business.....	3
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	
BUS 220	Supervision	3
Elective	Select 1	4
ACCT 103	Introduction to Accounting	
ACCT 201	Principles of Accounting 1	

Total Credits 13

First Year—Winter Semester

BUS 104	Operating a Small Business	3
BUS 122	Advertising.....	3
English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
PSYCH 153	Human Relations.....	3
Elective	Select from the list below	2–3

Total Credits 14–15

First Year—Spring Session

BUS 202	Business Ethics	3
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Total Credits 3

PROGRAM TOTAL 30–31 CREDITS

Electives

ACCT 138	Income Tax Preparation.....	2
ACCT 263	Computerized Accounting Using QuickBooks.....	3
BUS 120	Strategic Selling	3
BUS 123	Consumer Behavior.....	3
BUS 215	Business on the Web.....	3

BUSINESS INFORMATION TECHNOLOGY

Credentials

Business Information Technology certificate	33–35 cr.
Business Information Technology AAS degree	63–66 cr.

Major Description

Business is becoming more complex every day due to the high-tech hardware and software used behind the scenes. If you enjoy staying current on the latest technological advances and finding the right technology to meet business needs, you can find a niche in this fast-growing field.

Information technology (IT) professionals help organizations in virtually every industry determine the best use of automated systems to reach their goals.

This field requires analytical and problem solving skills, technical expertise, and the ability to juggle projects while meeting deadlines and quality standards. Excellent communication skills are also essential.

Today's employers are looking for people who have a sound business background combined with the ability to develop or manage business computer systems. The widespread use of computers in all areas of business has generated new positions and expanded opportunities.

- The associate in applied science degree program sets the stage for transfer to a four-year college or school.
- The certificate program provides students with an overview of business and computer systems and results in a certificate of program completion.

The business information technology program is designed to meet the growing needs of industry for a new category of information technology professional. Today's employers increasingly request graduates who have a sound business background combined with the ability to develop or manage business computer systems.

This is a fast growing field with continual changes in hardware, software and procedures. The widespread use of computers in all areas of businesses has generated new positions and expanded opportunities in information technology. Effective use of technology enables businesses to serve customers better, access more information, be more flexible in responding to business changes and increase employee productivity.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 101	English Composition 1	3
BUS 101	Introduction to Business	3
CIS 125	Principles of Information Security	3
CIS 120	Software Applications	3
Elective	Select from the list below	3

Total Credits 15

First Year—Winter Semester

English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
MATH 113	Intermediate Algebra for College Students	4
BUS 217	Business Management	3
CIS 129	Introduction to Programming Logic	3
CIS Elective	Select any CIS course from the list below	2–3

Total Credits 15–16

First Year—Spring/Summer Session

Social Science	Select 1	3–4
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
PYSCH 201	General Psychology	
COMA 103	Fundamentals of Speech	3

Total Credits 6–7

Business Information Technology AAS Degree

Second Year—Fall Semester

BUS 220	Supervision	3
CIS 250	Systems Development and Design	4
CIS Elective	Select any CIS course from the list below	2–3
Science*	Select any General Education Science course	4

Total Credits 13–14

Second Year—Winter Semester

CIS 251	IT Project Management	3
ACCT 201	Principles of Accounting 1	4
ECON 201	Principles of Macroeconomics	4
Elective	Select from the list below	3

Total Credits 14

PROGRAM TOTAL 63–66 CREDITS

* Number of credits may vary depending on the General Education Science course selection.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

BUS 207	Business Law 1	3
BUS 208	Business Law 2	3
BUS 215	Business on the Web	3
BUS 221**	Statistical Inference for Management Decisions	3
BUS 226	Principles of Marketing	3
CIS 170	Microsoft Windows	3
CIS 171	Introduction to Networking	3
CIS 176	Visual Basic.NET	3
CIS 185	Introduction to HTML	3
CIS 211	Introduction to C++	2
CIS 221	Advanced C++	2
CIS 223	Introduction to C#	3
CIS 225	Database Management Systems	3
CIS 235	Managing and Troubleshooting PCs	3
CIS 265	Networking 1	3
CIS 276	Networking 2	3
CIS 290	Object-Oriented Programming With Java	3

** This course is designed for students pursuing the Walsh College Honors Fast Track Program.

Business Information Technology Certificate

The business information technology program is designed to meet the growing needs of industry for a new category of information technology professional. Today's employers increasingly requests graduates who have of a sound business background combined with the ability to develop or manage business computer systems.

This is a fast growing field with continual changes in hardware, software and procedures. The widespread use of computers in all areas of business has generated new positions and expanded opportunities in Information Technology. Effective use of technology enables businesses to serve customers better, access more information, be more flexible in responding to business changes and increase employee productivity.

This certificate is designed to provide students with an overview of business and computer systems. All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BUS 101	Introduction to Business.....	3
CIS 120	Software Applications	3
CIS 129	Introduction to Programming Logic.....	3
CIS 125	Principles of Information Security.....	3
CIS Elective	Select any CIS course listed below.....	2–3

Total Credits 14–15

First Year—Winter Semester

ACCT 201	Principles of Accounting 1.....	4
CIS 251	IT Project Management	3
BUS 220	Supervision	3
CIS 250	Systems Development and Design	4

Total Credits 14

First Year—Spring Session

BUS 217	Business Management	3
Elective	Select from the list below	2–3

Total Credits 5–6

PROGRAM TOTAL 33–35 CREDITS

Electives

BUS 207	Business Law 1.....	3
BUS 208	Business Law 2.....	3
BUS 215	Business on the Web.....	3
BUS 226	Principles of Marketing.....	3
CIS 170	Microsoft Windows	3
CIS 171	Introduction to Networking	3
CIS 176	Visual Basic.NET	3
CIS 185	Introduction to HTML.....	3
CIS 211	Introduction to C++.....	2
CIS 221	Advanced C++.....	2
CIS 223	Introduction to C#.....	3
CIS 225	Database Management Systems	3
CIS 235	Managing and Troubleshooting PCs	3
CIS 265	Networking 1	3
CIS 276	Networking 2	3
CIS 290	Object-Oriented Programming With Java.....	3

COMPUTER INFORMATION SYSTEMS

Credentials

Programming skills certificate.....	16 cr.
Introductory certificate	27–28 cr.
Networking Technology Integration certificate.....	31 cr.
Web Specialist certificate.....	30 cr.
Microcomputer Support Technician AAS degree.....	60–61 cr.
Programming AAS degree	60–62 cr.
Web Specialist AAS degree.....	64 cr.
Post-associate certificate	16 cr.

Major Description

If you're a problem solver by nature with a love of computers, our computer information systems (CIS) programs offer many options for different levels of interest and ability. Just starting out in computing? Enroll in our introductory certificate program for the basics in software applications and programming. Or, take the next step with an associate degree and beyond.

- Computer information systems: The certificate program will introduce you to the operating system and concepts of programming logic. You'll also obtain a basic knowledge of software applications and programming languages. Start here and select a CIS associate degree option later, or, go straight from Schoolcraft to an entry-level job.
- Already have a degree? The post-associate certificate is designed for working professionals who have experience in the computer field but want to study the newest technology and keep up with the ever-changing field.
- Programming: Our associate degree and skills certificate programs will prepare you for a position as an entry-level computer programmer. You'll learn to analyze problems and write code to solve them.
- Microcomputer support technician: Technicians assist users by recommending hardware and software, interpreting manuals, organizing storage, networking workstations and creating systems solutions using the microcomputer.

- Networking technology integration: This program covers LANs, WANs, network architecture, processes, protocols and more. Upon completion you'll be ready to continue your studies for the Cisco Certified Entry Networking Technician (CCENT) or CompTIA Network+ certification.
- Web specialist: This certificate will provide you with the combination of technical programming knowledge and graphic design skills essential for a career in the ever-evolving world of the web.

Job Titles & Median Salaries or Hourly Rates

- Microcomputer Support Technician: \$37,280 (national)
- Programmer: \$71,380 (national)
- Computer Support Specialist: \$44,260 (national)
- Network and Computer Systems Administrator: \$69,160 (national)
- Web Page Designer: \$55,068 (Michigan)
- Web Developer: \$75,660 (national)

**Computer Information Systems
Introductory Certificate**

The computer information systems certificate program introduces students to the operating system and concepts surrounding programming logic. In addition, students obtain a basic knowledge of software applications and programming languages.

Students may select one of the computer information systems associate degree programs at anytime during or after the first year. However, all degree requirements must be fulfilled.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

CIS 115	Introduction to Computer Based Systems	3
CIS 120	Software Applications	3
CIS 129	Introduction to Programming Logic.....	3
CIS Elective	Select 1	3
CIS 170	Microsoft Windows	
CIS 178	Technical Microsoft Windows	

Total Credits 12**First Year—Winter Semester**

ENG 101	English Composition 1	3
MATH 113	Intermediate Algebra for College Students.....	4
CIS 176	Visual Basic.NET	3
CIS 225	Database Management Systems	3
Elective	Select from the list below	2–3

Total Credits 15–16**PROGRAM TOTAL 27–28 CREDITS****Electives**

CIS 122	Microsoft Outlook	2
CIS 125	Principles of Information Security.....	3
CIS 251	IT Project Management	3
CIS 255	Introduction to LINUX	3

Computer Information Systems: Microcomputer Support Technician AAS Degree

This program is designed to prepare the student for entry-level positions supporting users of microcomputer components of the operating system. Technicians will assist microcomputer users by recommending appropriate hardware and software, interpreting software manuals, organizing the disk storage, networking workstations and creating systems solutions using the microcomputer.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 115	Introduction to Computer Based Systems.....	3
CIS 171	Introduction to Networking.....	3
MATH 113	Intermediate Algebra for College Students.....	4
ENG 101	English Composition 1.....	3

Total Credits 13

First Year—Winter Semester

CIS 120	Software Applications.....	3
CIS Elective	Select 1.....	3
CIS 170	Microsoft Windows	
CIS 178	Technical Microsoft Windows	
ENG 102	English Composition 2.....	3
CIS 173	Wireless Local Area Networks.....	3
CIS 235	Managing and Troubleshooting PCs.....	3

Total Credits 15

First Year—Spring Session

Social Science	Select 1.....	3–4
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	

Total Credits 3–4

Second Year—Fall Semester

CIS 180	Spreadsheet Applications—Current Software....	3
CIS 225	Database Management Systems.....	3
CIS 265	Networking 1.....	3
COMA 103	Fundamentals of Speech.....	3
Science*	Select any General Education Science course ...	4

Total Credits 16

Second Year—Winter Semester

CIS 215	Advanced Software Applications.....	3
CIS 250	Systems Development and Design.....	4
CIS 276	Networking 2.....	3
Elective	Select from the list below.....	3

Total Credits 13

PROGRAM TOTAL 60–61 CREDITS

**Number of credits may vary depending on the General Education Science course selection.*

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection

Electives

CIS 125	Principles of Information Security.....	3
CIS 172	Network Security Fundamentals.....	3
CIS 251	IT Project Management.....	3
CIS 255	Introduction to LINUX.....	3
CIS 260	Introduction to UNIX.....	3
CIS 273	TCP/IP and Network Architectures.....	3

Computer Information Systems: Networking Technology Integration Certificate

The curriculum provides students with an in-depth understanding of the theory, hardware, and software of computer networking. This program provides a complete introductory program for students or adult learners who are new to the field. For students who have networking experience, this program also offers more advanced networking study.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 171	Introduction to Networking.....	3
CIS 170	Microsoft Windows.....	3
or		
CIS 178	Technical Microsoft Windows.....	3
CIS 235	Managing and Troubleshooting PCs.....	3
CIS 267	Home Technology Integration.....	4
ENGR 100	Introduction to Engineering and Technology....	3

Total Credits 16

First Year—Winter Semester

CIS 172	Network Security Fundamentals.....	3
CIS 173	Wireless Local Area Networks.....	3
CIS 251	IT Project Management.....	3
CIS 271	Local Area Networks.....	3
CIS 273	TCP/IP and Network Architectures.....	3

Total Credits 15

PROGRAM TOTAL 31 CREDITS

Computer Information Systems: Programming AAS Degree

As business and industry embrace new technology and procedures, the need for specially trained people accelerates. This program is designed to prepare the student for a position as an entry-level programmer. Students will learn to become proficient in following directions, analyzing problems, and writing step-by-step instructions so that the computer will efficiently process the data needed to solve these problems. Accuracy, persistence, patience, and the ability to communicate both orally and in writing are important characteristics a computer programmer should possess.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 115	Introduction to Computer Based Systems.....3
CIS 129	Introduction to Programming Logic.....3
MATH 113	Intermediate Algebra for College Students.....4
COMA 103	Fundamentals of Speech.....3
ENG 101	English Composition 1.....3

Total Credits 16

First Year—Winter Semester

ENG 102	English Composition 2.....3
CIS Elective	Select 1.....3
CIS 170	Microsoft Windows
CIS 178	Technical Microsoft Windows
CIS 225	Database Management Systems.....3
Science*	Select any General Education Science course...4
Elective	Select from the list below.....3

Total Credits 16

Second Year—Fall Semester

CIS 176	Visual Basic.NET.....3
CIS 211	Introduction to C++.....2
CIS Elective	Select 1.....3
CIS 255	Introduction to LINUX
CIS 260**	Introduction to UNIX
Elective	Select from the list below.....6

Total Credits 14

Second Year—Winter Semester

CIS 250	Systems Development and Design.....4
CIS 290	Object-Oriented Programming with Java.....3
CIS 221	Advanced C++.....2
Social Science	Select 1.....3–4
POLS 105	Survey of American Government
PSYCH 153	Human Relations
PSYCH 201	Introductory Psychology
Elective	Select from the list below.....2–3

Total Credits 14–16

PROGRAM TOTAL 60–62 CREDITS

* Number of credits may vary depending on the General Education Science course selection.

** CIS 260 is offered winter semester.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

CIS 120	Software Applications.....3
CIS 122	Microsoft Outlook.....2
CIS 125	Principles of Information Security.....3
CIS 185	Introduction to HTML.....3
CIS 223	Introduction to C#.....3
CIS 238	JavaScript.....3
CIS 251	IT Project Management.....3
CIS 255	Introduction to LINUX.....3
CIS 260	Introduction to UNIX.....3

Computer Information Systems: Programming Skills Certificate

The Microsoft .NET framework is a common environment for building, deploying, and running web services and web applications in the Windows environment. This certificate is designed to introduce the student to the top four programming languages used in software development today. The student will use the new Visual Studio.NET, which is a common development environment for the new .NET Framework. The .NET Framework provides a feature-rich application execution environment, simplified development, and easy integration between a number of different development languages.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 129	Introduction to Programming Logic.....3
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Total Credits 3

First Year—Winter Semester

CIS 176	Visual Basic.NET.....3
CIS 211	Introduction to C++.....2

Total Credits 5

Second Year—Fall Semester

CIS 221	Advanced C++.....2
CIS 223	Introduction to C#.....3

Total Credits 5

Second Year—Winter Semester

CIS 290	Object-Oriented Programming with Java.....3
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Total Credits 3

PROGRAM TOTAL 16 CREDITS

Computer Information Systems: Web Specialist AAS Degree

The technology of the Internet is constantly evolving both in terms of delivery infrastructure and website development tools. To stay abreast of these technological advances requires programming and design knowledge, skills and experience. A good site must include both quality visual communication design and functionality. Programming is needed for interactivity to search databases and track usage. Visual graphic design is needed to convey the content message and provide branding for products and services.

This degree is designed to prepare the Internet professional to design web pages and to program for the web. It provides the working knowledge of various programming languages, multimedia technologies, graphic development, and web design tools. The Internet professional may be involved with designing, developing, operating, maintaining and managing web-based publishing.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CIS 129	Introduction to Programming Logic	3
CGT 136	Web Design and Development 1	3

Total Credits 15

First Year—Winter Semester

MATH 113	Intermediate Algebra for College Students	4
ENG 101	English Composition 1	3
CIS 171	Introduction to Networking	3
COMA 103	Fundamentals of Speech	3
CGT 163	Web Design and Development 2	3

Total Credits 16

First Year—Spring Session

ENG 102	English Composition 2	3
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Total Credits 3

Second Year—Fall Semester

CIS 250	Systems Development and Design	4
CGT 234	Web Design and Development 3	3
CIS 238	JavaScript	3
Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
Elective	Select from the list below	3

Total Credits 16

Second Year—Winter Semester

HUM 106	Introduction to Art and Music	1
CGT 237	Dynamic Web Design With ColdFusion	3
CGT 211	Flash	3
Science*	Select any General Education Science course ...	4
Elective	Select from the list below	3

Total Credits 14

PROGRAM TOTAL 64 CREDITS

* Number of credits may vary depending on the General Education Science course selected.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

CIS 125	Principles of Information Security	3
CIS 176	Visual Basic.NET	3
CIS 185	Introduction to HTML	3
CIS 223	Introduction to C#	3
CIS 225	Database Management Systems	3
CIS 255	Introduction to LINUX	3
CGT 141	Introduction Interactive Media and Game Design	3
CGT 206	Scripting for Interactive Media and Game Design	3

Computer Information Systems: Web Specialist Certificate

The technology of the Internet is constantly evolving both in terms of delivery infrastructure and web site development tools. To stay abreast of these technological advances requires programming and design knowledge, skills and experience. A good site must include both quality visual communication design and functionality. Programming is needed for interactivity to search databases and track usage. Visual graphic design is needed to convey the content message and provide branding for products and services.

This certificate is designed to provide students with an overview of the technical programming and graphic design areas for web page development.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop	3
CGT 136	Web Design and Development 1	3

Total Credits 12

First Year—Winter Semester

CIS 129	Introduction to Programming Logic	3
CGT 163	Web Design and Development 2	3
CIS 238	JavaScript	3
CGT 211	Flash	3

Total Credits 12

Second Year—Fall Semester

CGT 234	Web Design and Development 3	3
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Total Credits 3

Second Year—Winter Semester

CGT 237	Dynamic Web Design With ColdFusion	3
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Total Credits 3

PROGRAM TOTAL 30 CREDITS

Computer Information Systems Post-Associate Certificate

This post-associate certificate in computer science information systems is designed for working professionals who have experience and/or training in the computer field. This certificate will provide study in the newest technology and will enhance students' ability to meet the needs of the ever changing computer information systems environment.

Prior to admission in this program, students must have already completed a minimum of an accredited associate degree in applied science. All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. The post-associate certificate is awarded upon successful completion of 16 credit hours (exact number may vary slightly due to credit value of courses).

Program Courses

CIS 185	Introduction to HTML.....	3
CIS 211	Introduction to C++.....	2
CIS 221	Advanced C++.....	2
CIS 223	Introduction to C#.....	3
CIS 235	Managing and Troubleshooting PCs.....	3
CIS 238	JavaScript	3
CIS 250	Systems Development and Design	4
CIS 251	IT Project Management	3
CIS 255	Introduction to LINUX.....	3
CIS 260	Introduction to UNIX	3
CIS 265	Networking 1	3
CIS 276	Networking 2	3
CIS 290	Object-Oriented Programming with Java.....	3

Completion of a minimum of 16 credit hours is required.

Courses can be taken through independent study.

COMPUTER SERVICE

Credentials

Computer Service Technician certificate30 cr.

Major Description

Computer service technicians are often the most important and appreciated employees in an organization. If you like the challenge of analyzing problems and finding solutions in the technical realm, this career could be your ticket. Schoolcraft's certificate program will prepare you for positions that provide technical support for computer systems, personal computers, networks, and peripheral devices.

Job Titles & Median Salaries or Hourly Rates

- Computer Service Technician: \$37,280 (national)

Computer Service Technician Certificate

Computer service technicians provide technical support for computer systems, PCs, networks and peripheral devices. The technician needs to be able to provide diagnostic analysis and solutions to hardware, software and network problems. A technician will need to have a broad background in the areas of PCs, as well as network wiring and standards. The technician will also assist in the installation and maintaining of computer systems, networks, and software.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 235	Managing and Troubleshooting PCs.....	3
COMPS 124	Introduction to Personal Computers and Software	3
ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling.....	5

Total Credits 14

First Year—Winter Semester

CIS 265	Networking 1	3
COMPS 126	Technical Programming	3
COMPS 147	Computer and Peripheral Maintenance and Management.....	4
CIS 120	Software Applications	3

Total Credits 13

First Year—Spring Session

Elective*	CIS	3
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Total Credits 3

PROGRAM TOTAL 30 CREDITS

* Any CIS course not previously taken.

COSMETOLOGY MANAGEMENT

Credentials

Cosmetology Management AAS degree.....37 cr.

Major Description

You received your cosmetologist license and put in your time working for someone else. Now you'd like to start your own salon, but you're not sure how to go about it.

Our associate degree program in cosmetology management is designed to give you a strong foundation in the essentials of organizing and operating a business, plus the communication and people skills to make you a first-rate manager. In three short semesters, you can be ready to set up shop and succeed.

Job Titles & Median Salaries or Hourly Rates

- Salon Manager: \$30,940 (Michigan)
- Salon Owner: \$41,000 (national)

This program is designed to give licensed, practicing cosmetologists an opportunity to develop special skills in business-related activities and to earn an associate degree in applied science from Schoolcraft College.

Schoolcraft College will grant credit equal to 30 semester credit hours upon receipt of current and proper evidence of license based upon the standards of the State Board of Cosmetology. These credits will not be entered into the student's transcript until a minimum of 15 semester credit hours has been earned with a grade-point average of 2.0 at Schoolcraft College.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BUS 101	Introduction to Business.....	3
BUS 103	Organizing a Small Business.....	3
MATH 101	Business Mathematics.....	3
ENG 100	Communication Skills.....	3
PSYCH 153	Human Relations.....	3

Total Credits 15

Cosmetology Management AAS Degree

First Year—Winter Semester

ACCT 103	Introduction to Accounting.....	4
BUS 104	Operating a Small Business	3
COMA 103	Fundamentals of Speech	3
ENG 116	Technical Writing	3
Social Science	Select 1	3
POLS 105	Survey of American Government	
SOC 201	Principles of Sociology	

Total Credits 16

First Year—Spring Session

BIOL 101	General Biology	4
CIS 105	Computer Orientation.....	1
HUM 106	Introduction to Art and Music	1

Total Credits 6

PROGRAM TOTAL 37 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

OFFICE INFORMATION SYSTEMS

Credentials

Office Specialist skills certificate.....	17–18 cr.
Office Specialist certificate	30 cr.
Office Administration AAS degree	62 cr.

Major Description

You love computers and enjoy the challenge of learning and using new software. You consider 'multitask' to be your middle name. And you can easily see yourself in an office, on top of every detail and making things run smoothly in an organized and systematic manner. It all adds up to you being a candidate for a career as an office professional or administrative assistant.

- Office administration associate in applied science degree: An AAS degree in office administration can help you advance your career by enhancing your technical, communication, and leadership/management skills.
- Office specialist skills certificate: Get the knowledge to succeed in a variety of entry-level positions in today's technologically driven work environment.
- Office specialist certificate: Focus on office application software for the administrative assistant. Successful completion provides you the foundation for taking the Microsoft Office Specialist certification exam. Credits can be applied toward Schoolcraft's associate degree in office administration.

Job Titles & Median Salaries or Hourly Rates

- Administrative Support Supervisor: \$65,884 (Michigan)
- Information Processing Coordinator: \$35,256 (Michigan)
- Legal/Medical Secretary: \$41,500/\$30,530 (national)
- Executive Secretary/Admin. Asst.: \$43,520 (national)

The office professional, as a member of the office information systems management team, plays an integral role in the successful operation of the organization. In today's information age, the OIS professional functions as the pivotal person in the office communications network.

The office administration curriculum is designed to offer courses that enhance students' technical skills, communication skills, and leadership/management skills with an emphasis on the professional work ethic.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

OIS 100	Keyboarding 1	2
OIS 102	Keyboarding 2	2
OIS 195	Time and Project Management	1
ENG 101	English Composition 1	3
BUS 101	Introduction to Business	3
OIS 105	Office Communications—Editing Skills	3

Total Credits 14

First Year—Winter Semester

CIS 120	Software Applications	3
OIS 255	Office Procedures	2
OIS 165	Microsoft Word for Windows	3
ENG 106	Business English	3
MATH 101	Business Mathematics	3

Total Credits 14

First Year—Spring/Summer Session

COMA 103	Fundamentals of Speech	3
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Total Credits 3

Office Administration AAS Degree

Second Year—Fall Semester

OIS 260	Office Administration	3
CIS 180	Spreadsheet Applications—Current Software	3
OIS 185	Business Presentation 1—Fundamental Concepts	3
ACCT 201	Principles of Accounting 1	4
CIS 225	Database Management Systems	3

Total Credits 16

Second Year—Winter Semester

CIS 122	Microsoft Outlook	2
OIS 265	Advanced Microsoft Word for Windows	3
Science*	Select any General Education Science course ...	4
CIS 215	Advanced Software Applications	3
PSYCH 153	Human Relations	3

Total Credits 15

PROGRAM TOTAL 62 CREDITS

* Number of credits may be higher dependent on the General Education Science course selected.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may be higher dependent on the course selection.

Office Specialist Certificate

This certificate program focuses on office application software for today's administrative assistant. Computers and software applications are the center of the technological revolution taking place in today's business offices.

Students enrolled in the office specialist program will be prepared to take on broader and more challenging responsibilities in the business world. Successful completion of these courses helps to prepare students for the Microsoft Office Specialist certification exam.

Individuals who successfully complete this program will be prepared to obtain employment as administrative or executive secretaries, software specialists, word processing supervisors and managers.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

OIS 100	Keyboarding 1	2
OIS 102	Keyboarding 2	2
OIS 105	Office Communications—Editing Skills	3
CIS 120	Software Applications	3
OIS 195	Time and Project Management	1

Total Credits 11

First Year—Winter Semester

OIS 165	Microsoft Word for Windows	3
CIS 122	Microsoft Outlook	2
OIS 255	Office Procedures	2
CIS 180	Spreadsheet Applications— Current Software	3
CIS 215	Advanced Software Applications	3

Total Credits 13

Second Year—Fall Semester

OIS 185	Business Presentation 1— Fundamental Concepts	3
OIS 265	Advanced Microsoft Word for Windows	3

Total Credits 6

PROGRAM TOTAL 30 CREDITS

Office Specialist Skills Certificate

This program is designed to help prepare students for today's technologically driven work environment. The program combines instruction in the most commonly used computer software packages as well as the critical areas of business communication and time and project management. Individuals who are already employed may find that the certificate increases their opportunity for promotion.

This certificate can be used as a building block toward the achievement of the office specialist certificate or the associate degree in applied science in office administration. Successful completion of these courses will also provide the foundation for the Microsoft Office Specialist certification examination.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 105	Computer Orientation	1
OIS 100*	Keyboarding 1	2
OIS 195*	Time and Project Management	1
OIS 105*	Office Communication—Editing Skills	3
CIS 120*	Software Applications	3

Total Credits 10

First Year—Winter Semester

OIS 165*	Microsoft Word for Windows	3
CIS 122*	Microsoft Outlook	2
Elective	Select from the list below	2–3

Total Credits 7–8

PROGRAM TOTAL 17–18 CREDITS

ELECTIVES

BUS 204	Personal Finance	3
CIS 180*	Spreadsheet Applications— Current Software	3
HDS 110	Career Decision Making	2
OIS 185*	Business Presentation 1— Fundamental Concepts	3
OIS 255*	Office Procedures	2
OIS 265*	Advanced Microsoft Word for Windows	3

** Courses are part of the office specialist certificate and/or the office administration associate degree.*

All courses may be applied toward the associate of general studies degree.

BUSINESS & INFORMATION TECHNOLOGY ADDITIONAL AREAS OF STUDY

BUSINESS ADMINISTRATION

Credentials

Associate in Business Administration (ABA) degree60 cr.

Major Description

Schoolcraft College's extensive course offerings in business provide tremendous opportunities to explore different aspects of the field. You can build a strong foundation for further study and pursue a career, and even begin to specialize in one or more areas. An associate in business administration degree is designed for students who plan to transfer to a four-year college or university. The ABA includes all of the general education and freshman and sophomore level courses a business major needs to prepare you for pursuit of a bachelor's degree or higher in one of many majors including, but not limited to:

- accounting
- business administration
- computer information systems
- finance
- human resource management
- international business
- management
- marketing

Opportunities abound in Schoolcraft business courses for practical application of classroom learning through group projects for area businesses, participation in business related student groups, and volunteering to provide tax assistance, just to name a few.

- The specific courses required will be determined by the destination college or university and the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

Courses are offered in the following subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

ECONOMICS

Economics drives society.

But what do terms like unemployment, inflation, recession, interest rates, supply and demand really mean? Find out at Schoolcraft, where you can get your foot in the door of the exciting world of finance.

Do you want to open your own business, work in finance, or just get a better understanding of how the world works? If so, you might start with a course in economics.

Whether you aspire to be an entrepreneur, major in business at a university or just satisfy your curiosity, taking economics courses is a great investment.

CULINARY ARTS



Schoolcraft's culinary arts programs have a national reputation for quality, creativity, and culinary excellence and produce chefs who distinguish themselves at some of America's and Europe's most-recognized restaurants.

Since 1964, the college has made a commitment to meeting the high expectations of our students and the high standards set by our faculty. This commitment is strengthened by our faculty of Certified Master Chefs and Certified Executive Chefs. We also made a commitment to provide the best learning environment possible in one of the most advanced teaching kitchens in the country. Today, seven full-time faculty members, and 13 adjunct faculty and culinary assistants, teach almost 150 students a year in programs that include a certificate and associate degree in culinary arts; a certificate in culinary baking and pastry; and courses in culinary management.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Culinary Arts degree and certificate.	60–61
• CAP courses.	136–137
Culinary Baking and Pastry Arts certificate.	62
• CBPA courses.	137–138
Culinary Management courses (CM)	60, 138

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ADMINISTRATOR

James Ryan
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CULINARY ARTS

Credentials

Culinary Arts certificate	35 cr.
Culinary Arts AAS degree	73–74 cr.

Major Description

If you long to create inspiring cuisine using classical techniques in one of the most celebrated culinary arts programs in the country, you've come to the right place.

Creative entrees, artisan breads, house-made charcuterie, French pastries—this is just the beginning of what students learn to do in Schoolcraft College's acclaimed culinary arts programs. Working under the direction of Certified Master Chefs and Certified Executive Chefs, students prepare gourmet meals for the dining public in the American Harvest Restaurant and the Main Street Cafe.

It all starts with the culinary arts certificate, which prepares you for immediate entry into the workplace and sets the stage for the completion of Schoolcraft's associate degree. The associate degree provides the skills necessary to obtain advanced-level jobs.

- A student/teacher ratio of 16:1 means individual attention in every class.
- Get hands-on experience at our American Harvest Restaurant, both in the kitchen and the dining room.
- With culinary management courses you explore the relationship between food and various cultures, the general concepts of law as it relates to the hospitality industry, and the importance of design and décor in the food industry.

Job Titles & Median Salaries or Hourly Rates

- Chef: \$46,384 (Michigan)
- Cook: \$29,224 (Michigan)
- Food and Beverage Manager: \$43,000–\$53,000 (national)
- Food Service Manager: \$48,130 (national)

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

Upon completion of the certificate program, students may select the associate degree as their second-year option. All the requirements of that associate degree must be fulfilled, including all of the college requirements.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Admission Prerequisites

These courses are pre-program requirements and not included in program totals.

CAP 102*	Culinary Sanitation	2
CAP 103	Introduction to Professional Cooking Skills and Technique	5

Total Credits 7

Culinary Arts Certificate

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CAP 144	Baking	4
CAP 124	Breakfast and Pantry	4
CAP 125	Pastries 1	4
MATH 101	Business Mathematics	3
ENG 100	Communication Skills	3

Total Credits 18

First Year—Winter Semester

CAP 142	Butchery	4
CAP 128	Introduction to Food Techniques	4
CAP 143	Dining Room Service	4
ENG 106	Business English	3
CAP 241**	Culinary Nutrition	2

Total Credits 17

PROGRAM TOTAL 35 CREDITS

* If student provides documentation of current ServSafe certification, CAP 102 is not required. This course is also open to any Schoolcraft student.

** Signifies culinary course is open to any Schoolcraft student.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor.

CULINARY ARTS ADDITIONAL AREA OF STUDY

Courses are offered in a number of subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

CULINARY MANAGEMENT

Simmering with entrepreneurial spirit? By taking courses in culinary management, you can take the first step toward becoming a restaurant or catering business owner or manager; a sommelier; or a personal chef, to name just a few options.

Classes explore food and culture, hospitality law, restaurant design, and wine and spirits. Earn credits that may count toward an associate degree or transfer to a four-year college.

Culinary Arts AAS Degree

The culinary arts associate degree program provides the skills necessary to enter food service occupations at advanced levels. The technical portion of the curriculum prepares students in quality food preparation, advanced food preparation, cost control, portion control, quantity baking, quantity pastry, advanced pastry, meat cutting, garde manger, dining room operation and classical cooking techniques. Food purchasing and storage functions, menu formulation, terminology, and decorative culinary skills are also covered.

This program contains some courses restricted to students officially admitted to this program. Additionally, CAP 102, Culinary Sanitation or proof of current ServSafe certification as well as CAP 103, Introduction to Professional Cooking Skills and Techniques are pre-program requirements. The college requirements portion of the curriculum is vital to students' development.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites

These courses are pre-program requirements and not included in degree program totals.

CAP 102*	Culinary Sanitation	2
CAP 103	Introduction to Professional Cooking Skills and Technique	5
Total Credits 7		

First Year—Fall Semester

CAP 144	Baking	4
CAP 124	Breakfast and Pantry.....	4
CAP 125	Pastries 1	4
ENG 100	Communication Skills.....	3

Total Credits 15

First Year—Winter Semester

CAP 142	Butchery	4
CAP 128	Introduction to Food Techniques.....	4
CAP 143	Dining Room Service	4
MATH 101	Business Mathematics.....	3

Total Credits 15

First Year—Spring/Summer Session

CHEM 100	Introduction to the Chemistry of Food for Culinary Arts	4
ENG 106	Business English	3
HUM 106	Introduction to Art and Music	1
CAP 241**	Culinary Nutrition.....	2
Elective***	Select one course from the list below.....	3–4

Total Credits 13–14

Second Year—Fall Semester

CAP 227	Restaurant Cooking and Preparation.....	4
CAP 215	Charcuterie	4
CAP 244	International and American Cuisine.....	8

Total Credits 16

Second Year—Winter Semester

CAP 240	Pastries 2	4
CAP 242	À la Carte	4
CAP 243	Storeroom Operations.....	3
PSYCH 153	Human Relations.....	3

Total Credits 14

PROGRAM TOTAL 73–74 CREDITS

* If student provides documentation of current ServSafe certification, CAP 102 is not required.
This course is also open to any Schoolcraft student.

** Signifies culinary course is open to any Schoolcraft student.

*** If BUS 217 or BUS 226 is selected, student must first complete the prerequisite course of BUS 101.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection

Electives

Select one course (3–4 credit hours) from the classes listed below to fulfill the elective requirement:

ART 105	Basic Drawing 1	3
BUS 122	Advertising.....	3
BUS 207	Business Law 1	3
BUS 217***	Business Management	3
BUS 220	Supervision	3
BUS 226***	Principles of Marketing.....	3
CIS 120	Software Applications	3
CM 107**	Culinary Management—Food and Culture.....	3
CM 109**	Hospitality Law.....	3
CM 203	Restaurant Concepts and Design	3
CM 210**	Wine and Spirits	3
CAP 191	Externship	3
CAP 247**	Banquets and Catering.....	3
CAP 260**	Competitive Ice Carving	3
CAP 265**	Advanced Competitive Ice Carving.....	3
CAP 267	Chocolatier.....	4
CAP 295	Salon Competition 1.....	3
CAP 297	Salon Competition 2.....	4

The culinary arts program is certified by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). Accreditation assures that a program is meeting standards and competencies set for faculty, curriculum and student services.

For more information on accreditation please contact:

American Culinary Federation
180 Center Place Way
St. Augustine, FL 32095
904-824-4468
Candice Childers, Assistant Director of Accreditation,
cchilders@acfcchefs.net

CULINARY BAKING AND PASTRY ARTS

Credentials

Culinary Baking and Pastry Arts certificate35 cr.

Major Description

Our 30-week baking and pastry arts certificate program will provide you with the skills necessary to begin a career in a bakery, pastry shop, restaurant, or hotel bakery and pastry kitchen. Study professionalism, safety and sanitation, dietetic baking, baking processes and techniques, and learn to create all manner of baked goods from artisan breads to delicate puff pastry. Receive intensive training, beginning with the fundamentals and building up through the most refined and advanced skills and techniques.

- Learn in the most advanced instructional kitchens in the nation under the guidance of Certified Master, Certified Master Pastry, and Certified Executive Chefs.
- Study under a faculty that travels the world to experience new foods and techniques to share in the classroom.
- Expand your horizons and explore your talents.

Job Titles & Median Salaries or Hourly Rates

- Baker: \$29,484 (Michigan)
median entry-level salary
- Pastry Chef: \$29,484 (Michigan)

Culinary Baking and Pastry Arts Certificate

The baking and pastry arts certificate program provides the skills necessary to enter bakeries, pastry shops, restaurants and hotel bakery and pastry kitchens.

The curriculum prepares students in quality baking and pastry preparation. The two core courses start with the fundamental skills and build gradually to the more advanced and refined skills. Topics covered include professionalism, safety and sanitation, dietetic baking, baking processes and techniques, pies, tarts, contemporary tortes, French pastry, cold and frozen desserts, chocolates, cake decoration, breads, cookies, and many other related nutritional desserts.

This program contains some courses restricted to students officially admitted to this program. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Admission Prerequisites

These courses are pre-program requirements and not included in program totals.

CAP 102*	Culinary Sanitation	2
CBPA 103	Introduction to Baking and Pastry Skills and Techniques.....	2

Total Credits 4

First Year—Fall Semester

CBPA 125	Pastries	20
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Total Credits 20

First Year—Winter Semester

CBPA 144	Baking	15
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Total Credits 15

PROGRAM TOTAL 35 CREDITS

**If student provides documentation of current ServSafe certification, CAP 102 is not required. This course is also open to any Schoolcraft student.*

EDUCATION & HUMAN SERVICES



How often have you heard it said, “Our children are the future?” It may sound a bit cliché, but what better foundation can we provide for our children than a quality education? For those who have a desire to play an important role in preparing the next generation for the brightest possible future, Schoolcraft College offers the excellent education and training that is needed for success in this ever-changing field.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Child and Family Services

- Child Care and Development degree and certificate 64–65
- Child Care-Special Needs Paraprofessional degree and certificate 66–67
- Child Development Associate (CDA) skills certificate .. 65
- CCD courses 124–126

Education

- Education transfer degree 67
- EDUC courses 139

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CHILD AND FAMILY SERVICES—CHILD CARE AND DEVELOPMENT

Credentials

Child Development Associate (CDA) skills certificate	19 cr.
Child Care and Development certificate	33 cr.
Child Care and Development AAS degree	61–63 cr.

Major Description

As a student in this program, you will learn through a combination of online, traditional and direct classroom instruction and immediate experience with children in the college's lab school, the Children's Center.

- Get involved with the Metro Detroit student chapter of the National Association for the Education of Young Children.
- Earn a certificate or associate degree.
- Your career opportunities include teaching in an early childhood program or owning and operating your own child care center.
- You also have the option of transferring to a bachelor's degree program at another college or university.

Job Titles & Median Salaries or Hourly Rates

- Child Care Worker: \$19,300 (national)
- Child Care Director: \$42,960 (national)

To work effectively with children, early childhood educators must be sensitive to and understand the developmental stages of children. This curriculum contains theoretical and practical experiences to prepare students to work in early childhood programs in a variety of settings.

The required practicum experiences at the college's lab school, the Children's Center, expose students to best practices in early childhood.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 100	Communication Skills.....	3
CCD 116	Child Development	3
CCD 100	Introduction to Child Welfare Services.....	3
CCD 102	Foundations of Early Childhood Education	3
PSYCH 153	Human Relations.....	3

Total Credits 15

First Year—Winter Semester

ENG 106	Business English	3
CCD 118	Infant and Toddler Care.....	3
CCD 101	Preschool Child Care.....	3
CCD 115	School-Age Child Care	3
CCD 150*	Child Care Practicum 1	3
COLLS 111	Electronic Portfolio	1

Total Credits 16

Second Year—Fall Semester

Mathematics	Select any General Education Mathematics course	3–4
CCD 126	Creative Activities.....	3
CCD 200*	Child Care Practicum 2.....	3
Sciences	Select 1	4–5
BIOL 101	General Biology	
CHEM 111	General Chemistry 1	
GEOG 105	Earth Science for Elementary Teachers	
GEOL 133	Physical Geology	
PHYS 104	Introduction to Astronomy	
PHYS 123	Applied Physics	
HUM 106	Introduction to Art and Music	1

Total Credits 14–16

Child Care and Development AAS Degree

Second Year—Winter Semester

CCD 211	Children and Youth in Groups.....	3
CCD 214	Operation and Maintenance of a Child Care Facility	3
CCD 216	The Child with Special Needs	3
CCD 121	The Adolescent	3
CCD 221	Early Literacy and Numerical Thinking	3
CCD 224	Emerging Educator	1

Total Credits 16

PROGRAM TOTAL 61–63 CREDITS

* Students in the child and family services program must adhere to the Code of Ethics of the National Association for the Education of Young Children and or the Council for Exceptional Children along with the child and family services program policies. For practicum courses, students must earn a minimum grade of 2.5 to pass the course. Students may only have two attempts at completing CCD 150 Practicum 1 and CCD 200 Practicum 2. Students that are not successful with the second attempt are not eligible to remain in the program. Child and family services program policies are provided from the department to the student in their practicum courses.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

The Children's Center at Schoolcraft College is accredited by the National Association for the Education of Young Children (NAEYC—the foremost authority in the care of children, birth through age eight). The accreditation we earned is held by only 3 percent of centers in Michigan and 7 percent of centers in the United States.

For more information about accreditation please contact: National Association for the Education of Young Children (NAEYC)

1313 L. Street N.W., Suite 500
Washington, DC 2005-4101
1-800-424-2460
www.naeyc.org/accreditation

Child Care and Development Certificate

The child care and development certificate program provides an educational foundation for understanding children's development and children's needs. The program emphasizes helping students acquire the knowledge and skills needed to plan developmentally appropriate learning environments, nurturing strategies and activities for children which promote their physical, intellectual, social and emotional growth and well-being.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CCD 116	Child Development	3
CCD 126	Creative Activities.....	3
CCD 214	Operation and Maintenance of a Child Care Facility	3
CCD 216	The Child With Special Needs	3
CCD 100	Introduction to Child Welfare Services.....	3

Total Credits 15

First Year—Winter Semester

CCD 101	Preschool Child Care.....	3
CCD 102	Foundations of Early Childhood Education	3
CCD 118	Infant and Toddler Care.....	3
CCD 150*	Child Care Practicum 1	3

Total Credits 12

First Year—Spring Session

CCD 200*	Child Care Practicum 2.....	3
CCD 211	Children and Youth in Groups.....	3

Total Credits 6

PROGRAM TOTAL 33 CREDITS

* Students in the child and family services program must adhere to the Code of Ethics of the National Association for the Education of Young Children and or the Council for Exceptional Children along with the child and family services program policies. For practicum courses students must earn a minimum grade of 2.5 to pass the course. Students may only have two attempts at completing CCD 150 Practicum 1 and CCD 200 Practicum 2. Students that are not successful with the second attempt are not eligible to remain in the program. Child and family services program policies are provided from the department to the student in their practicum courses.

Child Development Associate (CDA) Skills Certificate

The child development associate (CDA) program represents a national effort to credential qualified caregivers who work with children from birth to age five. At Schoolcraft College, CDA preparation consists of meeting the objectives and requirements of six courses in the child care and development curriculum that address the Competency Goals in 13 Functional Areas identified by the CDA Professional Preparation program. Candidates must also document 480 hours of experience working with children within the past five years, prepare a professional resource file, and be formally observed working with children.*

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. The following are the required courses necessary to meet CDA competencies.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CCD 102	Foundations of Early Childhood Education	3
CCD 116	Child Development	3
CCD 221	Early Literacy and Numerical Thinking	3

Total Credits 9

First Year—Winter Semester

CCD 118	Infant and Toddler Care.....	3
OR**		
CCD 101	Preschool Child Care.....	3
CCD 150***	Child Care Practicum 1	3
CCD 126	Creative Activities.....	3

Total Credits 9

First Year—Spring Session

CCD 155	CDA Assessment Preparation.....	1
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Total Credits 1

PROGRAM TOTAL 19 CREDITS

* Upon successful completion of the required courses, students earn a Schoolcraft College certificate. To earn the CDA, candidates may then apply to the Council for Early Childhood Professional Recognition. The Council charges an application fee, assigns a representative to assess the candidate and awards this national credential.

** Choose course depending upon the type of CDA Credentials the student is pursuing. Check with the Child Care Department for more information.

*** Students in the child and family services program must adhere to the Code of Ethics of the National Association for the Education of Young Children and or the Council for Exceptional Children along with the child and family services program policies. For practicum courses students must earn a minimum grade of 2.5 to pass the course. Students may only have two attempts at completing CCD 150 Practicum 1. Students that are not successful with the second attempt are not eligible to remain in the program. Child and family services program policies are provided from the department to the student in their practicum courses.

CHILD AND FAMILY SERVICES—SPECIAL NEEDS PARAPROFESSIONAL

Credentials

Special Needs Paraprofessional certificate30 cr.

Special Needs Paraprofessional AAS degree 61–63 cr.

Major Description

As a student in this program, you will learn through a combination of online, traditional and direct classroom instruction and immediate experience with children in the college's lab school, the Children's Center.

- Get involved with the Metro Detroit student chapter of the National Association for the Education of Young Children.
- Earn a certificate or associate degree.
- After Schoolcraft, begin working immediately in the field or transfer to a bachelor's degree program at another college or university.

Job Titles & Median Salaries or Hourly Rates

- Special Needs Paraprofessional: \$23,220 (national)

Working with disabled children and adults requires sensitivity to individual needs and an ability to help identify and develop the strengths of each individual. This curriculum contains theoretical and practical experience designed to prepare students to work in public school special education classrooms, inclusive classrooms and resource rooms, institutional settings, sheltered workshops, job coaching programs, group homes, or supported-living programs. Students learn to work effectively as members of professional special needs teams. Students who successfully complete the program will meet the requirements of the No Child Left Behind legislation.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 100	Communication Skills.....	3
CCD 116	Child Development	3
CCD 100	Introduction to Child Welfare Services.....	3
Social Science	Select 1	3–4
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	
CCD 216	The Child with Special Needs	3

Total Credits 15–16

First Year—Winter Semester

ENG 106	Business English	3
CCD Elective	Select 1	3
CCD 101	Preschool Child Care	
CCD 115	School-Age Child Care	
CCD 105	Introduction to Developmental Disabilities	3
SOC 201	Principles of Sociology	3
CCD 150**	Child Care Practicum 1	3
COLLS 111	Electronic Portfolio	1

Total Credits 16

Child Care-Special Needs Paraprofessional AAS Degree

Second Year—Fall Semester

BIOL 101	General Biology	4
Mathematics	Select any General Education Mathematics course	3–4
CCD 215	Methods and Curricula for Persons with Developmental Disabilities	3
CCD 211	Children and Youth in Groups.....	3
HUM 106	Introduction to Art and Music	1

Total Credits 14–15

Second Year—Winter Semester

CCD 113*	Special Educational Programs and Supported Living	3
CCD 126	Creative Activities.....	3
CCD 130*	Learning Disabilities	3
CCD 140*	Emotional Impairment	3
CCD 218**	Practicum 2—Special Education Focus	3
CCD 224	Emerging Educator	1

Total Credits 16

PROGRAM TOTAL 61–63 CREDITS

* These classes are offered on a rotational basis.

** Students in the child and family services program must adhere to the Code of Ethics of the National Association for the Education of Young Children and or the Council for Exceptional Children along with the child and family services program policies. For practicum courses students must earn a minimum grade of 2.5 to pass the course. Students may only have two attempts at completing CCD 150 Practicum 1 and CCD 218 Practicum 2 Special Needs Focus. Students that are not successful with the second attempt are not eligible to remain in the program. Child and family services program policies are provided from the department to the student in their practicum courses.

Contact Child Care faculty for current and projected offerings.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Child Care-Special Needs Paraprofessional Certificate

The child care special needs paraprofessional certificate program provides an educational foundation for understanding normal human development and the special needs of individuals who have mental, physical and/or emotional disabilities. The program emphasizes helping students develop the sensitivity and skills to identify and promote the potential of each individual regardless of the handicap.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CCD 116	Child Development	3
CCD 216	The Child with Special Needs	3
CCD 215	Methods and Curricula for Persons with Developmental Disabilities	3
CCD 113*	Special Educational Programs and Supported Living	3
CCD 211	Children and Youth in Groups	3

Total Credits 15

First Year—Winter Semester

CCD 105	Introduction to Developmental Disabilities	3
CCD 150**	Child Care Practicum 1	3
CCD 140*	Emotional Impairment	3
CCD 130*	Learning Disabilities	3
CCD 218**	Practicum 2—Special Education Focus	3

Total Credits 15

PROGRAM TOTAL 30 CREDITS

* These classes are offered on a rotational basis.

** Students in the child and family services program must adhere to the Code of Ethics of the National Association for the Education of Young Children and or the Council for Exceptional Children along with the Child and Family Services Program Policies. For practicum courses students must earn a minimum grade of 2.5 to pass the course. Students may only have two attempts at completing CCD 150 Practicum 1 and CCD 218 Practicum 2 Special Needs Focus. Students that are not successful with the second attempt are not eligible to remain in the program. Child and family services program policies are provided from the department to the student in their practicum courses.

Contact Child Care faculty for current and projected offerings.

EDUCATION & HUMAN SERVICES ADDITIONAL AREA OF STUDY

EDUCATION

Credentials

Associate in Arts (AA) or Associate in Science (AS) degree..... 60 cr.

Major Description

Planning on pursuing a career in teaching? Save thousands in tuition and housing costs by starting your bachelor's degree at Schoolcraft, completing your general education and foundation courses, and transferring the credits to a four-year college or university. Prepare for a rewarding career in an area such as elementary education or special education and learn how to make a difference in the life of a child.

- Earn all freshman and sophomore credits an education major must have before earning a bachelor's degree at a four-year institution.
- Receive an introduction to the profession through the required courses EDUC 101 and EDUC 201.
- The specific courses required will be determined by the destination college or university and the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

HEALTHCARE & HEALTH SCIENCES



Access to quality healthcare is one of the most important issues of our time. With an aging population and advances in medicine that allow us to live even longer than our ancestors, the demand for services is increasing. Schoolcraft offers a number of programs to prepare you for a career in healthcare, and with our state-of-the-art educational facilities, including the Health Professions Simulation Lab (HPSL), you'll learn the latest techniques and technology.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/cte). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Allied Health Education courses	83, 116
Biomedical Engineering Technology degree and post-associate certificate	86–87
• BMET courses	121
Emergency Medical Technology Paramedic degree and certificate	70–71
• EMT courses	141
Health Information Technology	
• Health Information Technology degree	73
• Coding Specialist certificate	72
• HIT courses	147–148
Health transfer degree	83
Massage Therapy degree and certificate	74–75
• MAS courses	153–154
Medical Assisting	
• Medical Assisting certificate	76
• Medical Biller/Receptionist skills certificate	77
• Phlebotomy skills certificate	77
• Physician Office Medical Transcription skills certificate	77
• MA courses	156–157
Nursing	78–81
• Registered (ADN) degree	79
• Licensed Practical certificate	80
• Advanced Placement Option for LPNs	80
• NURS courses	165–166
Nursing Assistant Training Program skills certificate	81
• NATP courses	166
Pharmacy—Pre-Pharmacy degree	82
• PHARM courses	167
Physical Education courses (PE)	83, 168–169

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EMERGENCY MEDICAL TECHNOLOGY

Credentials

Paramedic certificate	48.5 cr.
Paramedic AAS degree	66.5 cr.

Major Description

Do you have what it takes to save a life? Our emergency medical technology paramedic certificate will prepare you for employment as a pre-hospital emergency medical provider, while our associate degree program helps you take it up a notch and qualify for an associate in applied science degree. A combination of lecture, laboratory, clinical, and internship experience will help you fulfill all training requirements. Students achieving an 80 percent or higher in required courses will receive a certificate of completion and be eligible to test for state licensure.

Students should note that they will be required to purchase liability insurance, which is valid for one year.

- Every course offered is approved by the Michigan Department of Community Health EMS and Trauma Systems Section.
- Completing all courses and passing the related national exams results in the eligibility to serve at any level of emergency medical services, anywhere in Michigan.
- Credits earned in the certificate program may count toward a Schoolcraft AAS degree and transfer toward a bachelor's degree at a four-year college or university.

Job Titles & Median Salaries or Hourly Rates

- Emergency Medical Technician (EMT), Paramedic: \$30,360 (national)

The emergency medical technology paramedic program prepares students for employment as emergency providers. A combination of lecture, laboratory, clinical and internship will be utilized to help fulfill all training requirements.

All courses are approved by the Michigan Department of Community Health EMS and Trauma Systems Section. Students achieving an 80 percent or higher in required courses will receive a certificate of completion and be eligible to test for state licensure.

Students will be evaluated in the following core competency areas: didactic, practical, clinical and internship performance. Practical skills are graded on a pass/fail basis, and students will be required to pass all skills examinations to successfully complete the program. All clinical and internship rotations will be graded on attendance, attitude and skills performance which will be evaluated by field mentors, clinical coordinator and/or the course instructor. All students will be required to purchase liability insurance which is valid for one year.

Students are admitted twice a year into the paramedic program; once in the fall and again in the winter semesters. All emergency medical technology courses must be taken in sequence.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

First Year—Fall Semester

BIOL 101	General Biology	4
ENG 100	Communication Skills.....	3
MATH 101	Business Mathematics.....	3
HIT 100	Introduction to Medical Terminology	2

Total Credits 12**First Year—Winter Semester**

EMT 115	Emergency Medical Technology—Basic	10
BIOL 236	Human Anatomy and Physiology.....	5

Total Credits 15**Emergency Medical Technology: Paramedic AAS Degree****First Year—Spring Session**

HIT 114	Pharmacology for Health Professionals.....	2
PSYCH 153	Human Relations.....	3

Total Credits 5**First Year—Summer Session**

CIS 105	Computer Orientation.....	1
ENG 116	Technical Writing.....	3
HUM 106	Introduction to Art and Music	1

Total Credits 5**Second Year—Fall Semester**

EMT 210	Paramedic Technology 1	10
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Total Credits 10**Second Year—Winter Semester**

EMT 220	Paramedic Technology 2	10.5
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Total Credits 10.5**Second Year—Spring Session**

EMT 230	Paramedic Technology 3	9
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Total Credits 9**PROGRAM TOTAL 66.5 CREDITS****Electives (Optional)**

EMT 120	Emergency Medical Technology—Specialist...	5.5
HIT 113	Human Diseases	3
MA 110	Phlebotomy.....	4

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

For more information on certification, please contact:
Michigan Department of Community Health
Bureau of Health Policy Planning Access
EMS & Trauma Systems Section
Capitol View Building, 6th Floor
201 Townsend Street
Lansing, Michigan 48913
517-335-1825
goddet@michigan.gov
www.michigan.gov/ems

Emergency Medical Technology: Paramedic Certificate

The emergency medical technology paramedic certificate program prepares students for employment as pre-hospital emergency medical providers. A combination of lecture, laboratory, clinical and internship will be utilized to help fulfill all training requirements.

All courses are approved by the Michigan Department of Community Health EMS and Trauma Systems Section. Upon successful completion, students will be eligible to take the National Registry Certification test as required by the State of Michigan for licensure. Students will be evaluated in the following core competency areas: didactic, practical, clinical and internship performance. Students achieving an 80 percent or higher will receive a certificate of completion and be eligible for State licensure. Practical skills are graded on a pass/fail basis and students will be required to pass all practical examinations to successfully complete the program.

All clinical and internship rotations will be graded on attendance, attitude and skills performance which will be evaluated by field mentors, clinical coordinator and/or the course instructor. All students will be required to purchase liability insurance which is valid for one year.

The emergency medical technology certificate program will be awarded to students who successfully complete: EMT 115, 210, 220 and 230 with 80 percent or higher in addition to successfully passing all prerequisite/supportive courses as outlined.

All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them.

The special nature of the emergency medical technology coursework precludes concurrent enrollment in the courses for this certificate, thus necessitating additional time to complete the requirements for this certificate. Historically, individuals who take all three courses have done so over a two-year period.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES

First Year—Winter Semester

EMT 115	Emergency Medical Technology—Basic	10
BIOL 101	General Biology	4

Total Credits 14

First Year—Spring Session

BIOL 236	Human Anatomy and Physiology.....	5
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Total Credits 5

Second Year—Fall Semester

EMT 210	Paramedic Technology 1	10
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Total Credits 10

Second Year—Winter Semester

EMT 220	Paramedic Technology 2	10.5
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Total Credits 10.5

Second Year—Spring Session

EMT 230	Paramedic Technology 3	9
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Total Credits 9

PROGRAM TOTAL 48.5 CREDITS

Elective (Optional)

EMT 120	Emergency Medical Technology—Specialist....	5.5
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HEALTH INFORMATION TECHNOLOGY

Credentials

Health—Coding Specialist certificate	35 cr.
Health Information Technology AAS degree.....	68 cr.

Major Description

This program will prepare you to be a health information technician, responsible for healthcare data in all its forms. At Schoolcraft, you'll have classroom, laboratory and off-campus experiences in a variety of healthcare facilities, with supervised professional practice assignments. In recent years nearly every medical care facility has moved to electronic medical record keeping and our faculty is trained in the latest technology along with state and federal legislation standards regarding medical recordkeeping. They are recognized leaders and experts in this rapidly changing field. If you're detail oriented, like to collect, analyze and organize data and want to work in the business side of healthcare, this major is for you.

- Associate of applied science degree graduates are eligible to take the Registered Health Information Technician (RHIT) examination.
- Many graduates seek additional certifications in cancer registry, trauma registry, quality management and as coding specialists.
- Our coding specialist certificate prepares you to review and analyze health records to identify relevant diagnoses and procedure for patient services. You'll translate diagnostic and procedural phrases utilized by healthcare providers into coded form.

A minimum grade of 2.0 is required in all classes; full and part-time programs available. The program has transfer agreements with many state universities.

Job Titles & Median Salaries or Hourly Rates

- Coding Specialist: \$32,350 (national)
- Medical Records Technician: \$32,350 (national)

Health: Coding Specialist Certificate

The coding specialist program will prepare a student to review and analyze health records to identify relevant diagnoses and procedure for patient services in the inpatient, ambulatory and/or ancillary setting. The student will practice translating diagnostic and procedural phrases utilized by healthcare providers into coded form.

In the program, students apply the following skills:

- Coding of inpatient diagnoses and procedures using International Classification of Diseases (ICD-10-CM/PCS).
- Coding of ambulatory setting procedures and services using Current Procedural Terminology (CPT).
- Reading and interpreting health record documentation to identify all diagnoses and procedures that affect the current inpatient stay/outpatient encounter visit.
- Applying approved coding guidelines to assign and sequence the correct diagnosis; applying procedure codes for hospital inpatient and outpatient services.

Minimum grade of 2.0 is required for progression to the next health information technology course. A minimum grade of 2.0 is required for the basic science course.

The coder can be employed in hospital departments such as health information services (medical records), quality management, professional fee services, radiology, emergency room, outpatient/ambulatory surgery, ancillary services, and specialty physician clinics.

Coding specialists also work as independent contractors, consultants and trainers as well as for insurance companies, government agencies, health maintenance organizations and other facilities involved with the healthcare reimbursement process.

The curriculum in the coding specialist program will allow the student to select the health information technology associate degree program as a career path. All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

BIOL 236*	Human Anatomy and Physiology.....	5
HIT 104	Medical Terminology	4
HIT 109	Principles of Health Information Management	3

Total Credits 12**First Year—Winter Semester**

HIT 113	Human Diseases	3
HIT 117	ICD-10-CM/PCS Classification	3

Total Credits 6**Second Year—Fall Semester**

HIT 112	Basic Laboratory and Diagnostic Tests	2
HIT 114	Pharmacology for Health Professionals.....	2
HIT 222	Basic Ambulatory Coding.....	3

Total Credits 7**Second Year—Winter Semester**

HIT 235	Intermediate ICD-10-CM/PCS Coding.....	3
HIT 234	Intermediate Ambulatory Coding.....	3

Total Credits 6**Second Year—Spring Session**

HIT 236	ICD-10-CM/PCS Coding Practicum	2
HIT 231	Ambulatory Coding Practicum	2

Total Credits 4**PROGRAM TOTAL 35 CREDITS**

* Students desiring transfer credit should substitute BIOL 237 & BIOL 238. BIOL 101 is a prerequisite to BIOL 236 and the BIOL 237–238 sequence. Please review and follow all course prerequisites.

All courses may be applied toward the associate of general studies degree.

The health information technology program will prepare the student to be a health information technician. The technician is responsible for performing tasks related to the use, analysis, validation, presentation, abstracting, coding, storage, security, retrieval, quality measurement and control of healthcare data in paper-based, hybrid and/or electronic health record systems.

The program coordinates classroom, laboratory and off-campus experience in a variety of healthcare facilities, such as acute care hospital, ambulatory care center, mental health facility and other health related facilities. The off-campus activities include supervised, professional practice assignments. The student gains experience in applying knowledge to technical procedures in health information systems.

The health information technician is detail oriented and recognizes the business aspects of healthcare. The technician will have a strong interest in activities, such as assisting medical staff in evaluating the quality of healthcare, protecting the privacy and confidentiality of patient information and utilizing healthcare data.

Health information technology courses should be taken in accordance with prerequisites; a minimum grade of 2.0 in each course is required. Graduates are eligible to take the Registered Health Information Technician (RHIT) examination. The program is designed for the full-time or part-time student.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Health Information Technology AAS Degree

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites

BIOL 236*	Human Anatomy and Physiology.....	5
HIT 104	Medical Terminology	4
CIS 120	Software Applications	3
HIT 109	Principles of Health Information Management	3

Total Credits 15

First Year—Fall Semester

HIT 113	Human Diseases	3
HIT 112	Basic Laboratory and Diagnostic Tests	2
HIT 114	Pharmacology for Health Professionals.....	2
ENG 101	English Composition 1.....	3
MATH 101	Business Mathematics.....	3

Total Credits 13

First Year—Winter Semester

HIT 117	ICD-10-CM/PCS.....	3
HUM 106	Introduction to Art and Music	1
ENG 102	English Composition 2.....	3
HIT 158	Clinical Affiliation 1	2
HIT 116	Legal Aspects of Health Information	2

Total Credits 11

First Year—Spring/Summer Session

PSYCH 153	Human Relations.....	3
HIT 216	Healthcare Delivery Systems	2

Total Credits 5

Second Year—Fall Semester

HIT 210	Healthcare Statistics for Health Information Management.....	3
HIT 217	Quality Management in Health Care	2
HIT 222	Basic Ambulatory Coding.....	3
HIT 232	Computer Applications in Healthcare.....	2
HIT 255	Health Information Technology Practicum.....	2

Total Credits 12

Second Year—Winter Semester

HIT 240	Healthcare Reimbursement Methodologies.....	2
HIT 219	Organization and Management.....	2
HIT 235	Intermediate ICD-10-CMPCS.....	3
HIT 234	Intermediate Ambulatory Coding.....	3
HIT 256**	Clinical Affiliation 2	2

Total Credits 12

PROGRAM TOTAL 68 CREDITS

Elective (Optional)

HIT 213	Health Information Technology Seminar	1
HIT 236**	ICD-10-CM/PCS Coding Practicum	2
HIT 231**	Ambulatory Coding Practicum	2

* Students desiring transfer credit should substitute BIOL 237 & BIOL 238. BIOL 101 is a prerequisite to BIOL 236 and the BIOL 237-238 sequence. Please review and follow all course prerequisites. Students planning to transfer should take the following courses: POLS 105, PSYCH 201, HUM 106 and MATH 111.

** Contact HIT faculty to consider substitution.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

The Associate Degree Program in Health Information Technology at Schoolcraft College is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). For additional information, contact CAHIIM at 233 N. Michigan Ave., 21st Floor Chicago, Illinois 60611-5800 info@cahiim.org www.cahiim.org

MASSAGE THERAPY

Credentials

Massage Therapy certificate	36.5 cr.
Massage Therapy AAS degree	62.5 cr.

Major Description

Opportunities continue to grow in the field of massage therapy with more and more people seeking preventative health-care solutions and massage in rehabilitation and treatment.

Schoolcraft offers both an associate in applied science degree and a certificate in massage therapy. Each provides students with the knowledge and skills to work in group and private practices, spas, and a variety of healthcare settings including hospitals, managed care centers, and rehabilitation and sports medicine clinics.

- Courses in bodywork and therapy skills are developed to meet the expanding requirements of allied and complementary healthcare systems and to prepare students to take the national certification exam.
- Students receive real life experience by participating in community service activities such as providing massages at marathons and fund-raising walks.

Job Titles & Median Salaries or Hourly Rates

- Massage Therapist: \$34,900 (national)

Massage therapy is the systematic manipulation of the soft tissues of the body for the purpose of increased circulation of blood and lymph, pain reduction, relaxation and restoration of health and well-being of the client. The massage therapy program is designed to prepare an individual in the field of soft tissue manipulation and is taught from a clinical perspective. Massage therapists may be employed in a private practice, a spa, or a variety of healthcare settings including hospitals and managed care centers, rehabilitation and sports medicine clinics and group and private practices.

The massage therapy associate degree is offered to meet the expanding needs of both the allied and integrative health care systems. Those students who are interested in additional education and wish to enter either field with a broad background and the ability to work with a diverse group of clients and practitioners will do well to add the general education courses. This associate degree program integrates traditional and non-traditional knowledge bases regarding massage therapy and bodywork. Course work includes anatomy and physiology, a variety of massage and bodywork techniques and practices, and general education courses. Massage therapists who attain this degree may also plan to pursue a baccalaureate degree in a health or medical program, or an individualized area of study.

The massage therapy program is dedicated to advancing the science and art of massage therapy. This program has been approved by the State of Michigan Department of Licensing and Regulatory Affairs and allows students to apply for licensure to practice massage therapy.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Massage Therapy AAS Degree

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MAS 112	Massage Techniques 1	5.5
MAS 113	Comprehensive Study of Human Body Systems 1... 3	
MAS 114	Clinical Foundations	1.5
MAS 115	Business and Professionalism 1	2

Total Credits 12

First Year—Winter Semester

MAS 122	Massage Techniques 2	4
MAS 123	Comprehensive Study of Human Body Systems 2 ... 4	
MAS 124	Student Clinic 1	1
MAS 125	Business and Professionalism 2	3

Total Credits 12

First Year—Spring/Summer Session

MAS 132	Massage Techniques 3	3
MAS 133	Comprehensive Study of Human Body Systems 3... 5	
MAS 134	Student Clinic 2	1.5
MAS 135	Business and Professionalism 3	3

Total Credits 12.5

Second Year—Fall Semester

ENG 100	Communication Skills	3
CIS 120	Software Applications	3
BIOL 101	General Biology	4

Total Credits 10

Second Year—Winter Semester

ENG 116	Technical Writing	3
MATH 111	Applications—Utility of Math	4
HUM 106	Introduction to Art and Music	1
BIOL 236*	Human Anatomy and Physiology	5

Total Credits 13

Second Year—Spring/Summer Session

PSYCH 153	Human Relations	3
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Total Credits 3

PROGRAM TOTAL 62.5 CREDITS

** Students who may transfer to a baccalaureate program should elect the BIOL 237–238 sequence. BIOL 101 is a prerequisite to BIOL 236 and the BIOL 237–238 sequence. Please review and follow all course requirements.*

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Massage Therapy Certificate

Massage therapy is the systematic manipulation of the soft tissues of the body for the purpose of increased circulation of blood and lymph, pain reduction, relaxation and restoration of health and well-being of the client. The massage therapy program is designed to prepare an individual in the field of soft tissue manipulation and is taught from a clinical perspective. It offers the opportunity to earn a certificate in massage therapy. The certificate is granted after the successful completion of 36.5 credit hours of designated course work.

Massage therapists may be employed in private practice, spa, or a variety of healthcare settings including hospitals and managed care centers, rehabilitation and sports medicine clinics and group and private practices. This program has been approved by the State of Michigan Department of Licensing and Regulatory Affairs and allows students to apply for licensure to practice massage therapy. Successful completion of the certificate readies the individual to sit for exams approved by the State of Michigan massage licensure.

The massage therapy program is dedicated to advancing the science and art of massage therapy. Students who successfully complete all program courses qualify for a certificate of program completion.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MAS 112	Massage Techniques 1	5.5
MAS 113	Comprehensive Study of Human Body Systems 1	3
MAS 114	Clinical Foundations	1.5
MAS 115	Business and Professionalism 1	2

Total Credits 12

First Year—Winter Semester

MAS 122	Massage Techniques 2	4
MAS 123	Comprehensive Study of Human Body Systems 2	4
MAS 124	Student Clinic 1	1
MAS 125	Business and Professionalism 2	3

Total Credits 12

First Year—Spring/Summer Session

MAS 132	Massage Techniques 3	3
MAS 133	Comprehensive Study of Human Body Systems 3	5
MAS 134	Student Clinic 2	1.5
MAS 135	Business and Professionalism 3	3

Total Credits 12.5

PROGRAM TOTAL 36.5 CREDITS

MEDICAL ASSISTING

Credentials

Medical Biller/Receptionist skills certificate.....	16 cr.
Physician Office Medical Transcription skills certificate	17 cr.
Phlebotomy skills certificate	16 cr.
Medical Assisting certificate	35 cr.

Major Description

Are you a people person and a born organizer with an interest in healthcare? You may have the skills it takes to excel at a career in medical assisting. Schoolcraft's programs prepare you to handle both the care-giving and administrative aspects of the growing healthcare field

- Medical assisting certificate will prepare you for entry-level employment as a medical assistant, who perform a wide range of roles in physician's offices, clinics and other healthcare settings.
- Medical biller/receptionist skills certificate will prepare you for employment in a variety of healthcare facilities providing organizational support and ensuring their smooth operation and patient satisfaction.
- Phlebotomy skills certificate will get you ready for employment as a phlebotomist in a medical office, clinic or healthcare facility, drawing blood through a method called venipuncture.
- Physician office medical transcription skills certificate will prepare you for employment as a transcriptionist, responsible for typing medical letters, chart notes, consultations, history, physicals, discharge notes and initial office evaluations.

Job Titles & Median Salaries or Hourly Rates

- Medical Assistant: \$28,860 (national)
- Medical Biller/Receptionist: \$33,710 (national)
- Phlebotomist: \$36,280 (national)

The medical assisting program is designed to prepare the student for entry-level employment as a medical assistant. The curriculum is designed to prepare the student to acquire knowledge, skills and behavior necessary for a competent entry-level medical assistant in a healthcare setting. The program is designed to coordinate classroom and laboratory experience with practical experience in a healthcare facility such as the physician's office. Medical assistants are multi-skilled allied health professionals who perform a wide range of roles in physicians' offices, clinics and other healthcare settings. They are proficient in a multitude of clinical and administrative tasks and are widely viewed by doctors as vital members of the healthcare delivery team. Students are required to achieve a grade of 2.0 or better for all HIT and MA courses. Academic and medical assisting courses must be completed by the end of the winter semester to be eligible for placement in the Office Practicum offered in the spring. The Office Practicum is an externship that is structured to provide experiences in applying knowledge, in performing administrative and clinical procedures and in developing professional attitudes for interacting with other professionals and consumers in a healthcare facility.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

The medical assisting program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE). Graduates are eligible to take the Certified Medical Assistant (CMA) examination conducted by the certifying board of the American Association of Medical Assistants.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

Medical Assisting Certificate

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites

BIOL 105	Basic Human Anatomy and Physiology.....	4
HIT 104	Medical Terminology	4

Total Credits 8

First Year—Fall Semester

MA 134	Medical Insurance Coding.....	3
MA 140	Medical Office Procedures	3
MA 110	Phlebotomy	4
CIS 120	Software Applications	3

Total Credits 13

First Year—Winter Semester

MA 174*	Medical Laboratory Techniques	4
MA 180*	Medical Office Clinical Procedures	4
MA 155	Medical Insurance Billing	3

Total Credits 11

First Year—Spring Session

MA 195	Office Practicum	3
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Total Credits 3

PROGRAM TOTAL 35 CREDITS

** Courses open only to students who are officially admitted to the medical assisting program.*

For more information about accreditation please contact:
Commission on Accreditation of Allied Health
Education Programs (CAAHEP)
1361 Park Street
Clearwater, FL 33756
727-210-2350
mail@caahep.org
www.caahep.org

Medical Biller/Receptionist Skills Certificate

The medical biller/receptionist certificate prepares the student to answer telephones, route calls, greet visitors, respond to inquiries from the public, perform medical insurance billing and provide information about the healthcare facility. Job opportunities are in medical offices, hospitals, clinics, health-related facilities, urgent care centers, and surgical centers.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 120	Software Applications	3
HIT 104*	Medical Terminology	4
MA 134*	Medical Insurance Coding.....	3

Total Credits 10

First Year—Winter Semester

MA 155*	Medical Insurance Billing	3
MA 140*	Medical Office Procedures	3

Total Credits 6

PROGRAM TOTAL 16 CREDITS

* Courses apply to the medical assisting program.

Phlebotomy Skills Certificate

The phlebotomy certificate prepares the student for employment as a phlebotomist with job opportunities in a medical office, clinic or healthcare facility. The phlebotomist is trained to draw blood through a method called venipuncture. A venipuncture is performed when a large specimen of blood is needed for testing.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BIOL 105*	Basic Human Anatomy and Physiology.....	4
CIS 105	Computer Orientation.....	1
HIT 104*	Medical Terminology	4

Total Credits 9

First Year—Winter Semester

MA 110*	Phlebotomy	4
MA 140*	Medical Office Procedures	3

Total Credits 7

PROGRAM TOTAL 16 CREDITS

* Courses apply to the medical assisting program.

All courses may be applied toward the associate in general studies degree.

Physician Office Medical Transcription Skills Certificate

The physician office medical transcription certificate prepares the student for employment as a transcriptionist with job opportunities in a medical office, clinic, or physician office. The physician office transcriptionist is responsible for typing medical letters, chart notes, consultations, history, physicals, discharge notes, and initial office evaluations.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

BIOL 105*	Basic Human Anatomy and Physiology.....	4
HIT 104*	Medical Terminology	4
OIS 100	Keyboarding 1	2

Total Credits 10

First Year—Winter Semester

HIT 114*	Pharmacology for Health Professionals.....	2
MA 140*	Medical Office Procedures	3
MT 108	Physician Office Transcription.....	2

Total Credits 7

PROGRAM TOTAL 17 CREDITS

* Courses apply to the medical assisting program.

All courses may be applied toward the associate in general studies degree.

NURSING

Credentials

Nursing—Licensed Practical certificate	47 cr.
Nursing—Registered AAS degree (ADN)	71 cr.

Major Description

Schoolcraft offers three nursing education options.

The first, a certificate program, can generally be completed in one year. It prepares you to take the National Council Licensure Examination for Practical Nursing (NCLEX-PN). The second, leading to an associate in applied science degree, qualifies you to take the National Council Licensure Examination for Registered Nursing (NCLEX-RN), providing you the academic background you'll need to enter a bachelor of science in nursing (BSN) degree program. The third option allows licensed practical nurses (LPNs) advanced placement into the associate degree nursing program.

Our nursing programs are approved by the Michigan Board of Nursing and the National League for Nursing Accrediting Commission (NLNAC). The programs provide nursing theory and clinical practice in caring for adults, children and families to prepare you for entry-level positions in hospitals, long-term care facilities, medical offices, home health and other community settings.

- Nursing courses must be taken in sequence and a minimum grade of 80% in each nursing course is required for progression to the next course. Academic courses other than nursing must be completed according to program requirements.
- Students are admitted once a year in the fall semester.

Job Titles & Median Salaries or Hourly Rates

- Licensed Practical Nurse: \$40,380 (national)
- Registered Nurse: \$62,690 (national)

Nursing Career Ladder Curriculum

The nursing career ladder curriculum (NCLC) is designed to improve nursing career mobility and provide seamless progression from practical nursing (PN) to associate degree nursing (ADN) education. The NCLC contains both the PN and the ADN Programs. Following successful completion of the PN program requirements, students may apply for licensure as a licensed practical nurse (LPN) and have the option of continuing into the ADN program without further application or admission requirements. Upon successful completion of the ADN program, graduates may apply for licensure as a registered nurse (RN).

The nursing associate degree and practical programs are approved by the Michigan Board of Nursing. For more information on MI-Board of Nursing approval and licensure please contact:

LARA Department of Licensing and Regulatory Affairs
Bureau of Health Care Services

Board of Nursing
611 West Ottawa Street
P.O. Box 30670
Lansing, MI 48909-8170
517-335-0318

bhcsinfo@michigan.gov
www.michigan.gov/LARA

The nursing associate degree and practical programs are accredited by the National League for Nursing Accrediting Commission (NLNAC). For further information, please contact:

National League for Nursing Accrediting Commission, Inc.
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
404-975-5000
www.nlnac.org

Nursing: Registered AAS Degree (ADN)

Nursing courses are open only to students who are officially admitted to the nursing career ladder curriculum.

The associate degree nursing program is approved by the Michigan Board of Nursing and the National League for Nursing Accrediting Commission (NLNAC). This program provides advanced nursing theory and clinical practice in caring for adults, children and families to prepare graduates for entry-level positions in hospitals, long-term care facilities, medical offices, home health and other community settings.

Students who satisfactorily complete the associate degree nursing program are eligible to apply to take the National Council Licensure Examination-Registered Nurse (NCLEX-RN) as a step in obtaining licensure as a registered nurse (RN).

The nursing program has pre-admission and admission requirements that are reviewed annually. It is essential to contact the Admissions and Welcome Center for a copy of the current requirements.

Courses must be taken in sequence. A minimum grade of 80% in each nursing course is required for progression to the next course. Academic courses other than nursing must be finished according to program requirements. Computer lab use is required in this program. See “Academic Computing Labs” in this catalog for policy requirements.

This program is offered at the Livonia Campus.

Students are admitted once a year, at the beginning of the fall semester.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites and Supportive Courses*

BIOL 114	Basic Human Nutrition	1
BIOL 236**	Human Anatomy and Physiology	5
PSYCH 201	Introductory Psychology	4

Total Credits 10

First Year—Fall Semester

NURS 102	Nursing Informatics	1
NURS 104	Pharmacology for Nurses	3
NURS 110	Fundamentals of Nursing	9
PSYCH 239	Abnormal Psychology	3

Total Credits 16

First Year—Winter Semester

NURS 124	Medical Nursing	5
NURS 125	Surgical Nursing	5
ENG 101	English Composition 1	3

Total Credits 13

First Year—Spring Session

NURS 128	Maternal-Child Nursing 1	5
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Total Credits 5

First Year—OPTIONAL Summer Session

NURS 139	Advanced Concepts in Practical Nursing	3
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Total Credits 3

Second Year—Fall Semester

NURS 245	Advanced Medical-Surgical Nursing	5
NURS 246	Psychiatric Mental Health Nursing	4
MATH 113	Intermediate Algebra for College Students	4

Total Credits 13

Second Year—Winter Semester

NURS 248	Maternal-Child Nursing 2	5
NURS 259	Advanced Concepts in Registered Nursing	5
HUM 106	Introduction to Art and Music	1
ENG 102	English Composition 2	3

Total Credits 14

PROGRAM TOTAL 71 CREDITS

* COLLS 130 *Applied Learning Theory for Nursing Majors* is a suggested elective for pre-nursing students to develop study skills and success strategies.

** Students who may transfer to a baccalaureate program should elect the BIOL 237–238 sequence.

Nursing: Licensed Practical Certificate (Practical Nursing Program)

Nursing courses are open only to students who are officially admitted to the nursing career ladder curriculum.

The practical nursing program is approved by the Michigan Board of Nursing and accredited by the National League for Nursing Accrediting Commission (NLNAC). This program provides basic nursing theory and clinical practice in caring for adults, children and families to prepare graduates for entry-level positions in long-term care facilities, medical offices, hospitals, home health and other community settings.

Students who satisfactorily complete the practical nursing program are eligible to apply to take the National Council Licensure Examination-Practical Nurse (NCLEX-PN) as a step in obtaining licensure as a licensed practical nurse (LPN).

The nursing program has pre-admission and admission requirements that are reviewed annually. It is essential to contact the Admissions and Welcome Center for a copy of the current requirements.

Courses must be taken in sequence. A minimum grade of 80% in each nursing course is required for progression to the next course. Academic courses other than nursing must be finished by the completion of the nursing courses. Computer lab use is required in this program. See "Academic Computing Labs" in this catalog for policy requirements. Students must furnish and maintain uniforms and supplies as required by the department and clinical facilities.

This program is offered at the Livonia Campus.

Following successful completion of the Schoolcraft College PN program, students may continue into the ADN program without further application or admission requirements.

Students are admitted once a year, at the beginning of the fall semester.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES

Admission Prerequisites and Supportive Courses*

BIOL 114	Basic Human Nutrition	1
BIOL 236**	Human Anatomy and Physiology	5
PSYCH 201	Introductory Psychology	4

Total Credits 10

First Year—Fall Semester

NURS 102	Nursing Informatics	1
NURS 104	Pharmacology for Nurses	3
NURS 110	Fundamentals of Nursing	9
PSYCH 239	Abnormal Psychology	3

Total Credits 16

First Year—Winter Semester

NURS 124	Medical Nursing	5
NURS 125	Surgical Nursing	5
ENG 101	English Composition 1	3

Total Credits 13

First Year—Spring Session

NURS 128	Maternal-Child Nursing 1	5
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Total Credits 5

First Year—Summer Session

NURS 139	Advanced Concepts in Practical Nursing	3
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Total Credits 3

PROGRAM TOTAL 47 CREDITS

* COLLS 130 *Applied Learning Theory for Nursing Majors* is a suggested elective for pre-nursing students to develop study skills and success strategies.

** Students who may transfer to a baccalaureate program should elect the BIOL 237–238 sequence.

Advanced Placement Option for LPNs

The associate degree nursing (ADN) program offers an advanced placement option for licensed practical nurses (LPNs) who are interested in becoming registered nurses (RNs). When program space is available, LPN candidates are placed in the ADN program sequence based on a thorough review of their academic record and nursing experience/employment background. Students interested in this option should contact the Nursing office at 734-462-4400, ext. 5150 for detailed admission requirement and application information.

Credentials

Nursing Assistant Training Program skills certificate.....16 cr.

Major Description

Schoolcraft's nursing assistant training program (NATP) skills certificate will prepare you for entry-level positions, primarily in extended care facilities such as nursing homes and rehabilitation centers with some application to hospitals, clinics, doctors' offices and patients' homes. In lecture, lab and clinical sessions, students explore areas such as communication and interpersonal skills, infection control, safety/emergency procedures, and basic assistant nursing skills.

- Coursework includes hands-on practice of skills and supervised experiences in an extended care facility in addition to traditional classroom lectures and labs.
- Students who satisfactorily complete NATP 110 are eligible to apply to take the State of Michigan written and clinical skills certification evaluations to become CENA certified (competency evaluated nursing assistant).
- Students must meet health and clinical requirements and be able to pass a criminal background check and urine drug screen.
- Graduates may wish to consider completing an associate in general studies degree, the practical nursing certificate, or the associate degree nursing program at Schoolcraft College.*

**Students may also take the Nursing Assistant Preparation course without completing the other skills certificate courses. These students will still qualify to take the CENA exam.*

- Students are admitted several times each year.

Job Titles & Median Salaries or Hourly Rates

- Nursing Assistant: \$24,010 (national)

Nursing: Nursing Assistant Training Program Skills Certificate

The Nursing Assistant Preparation course is open only to students who are officially admitted to the nursing assistant training program.

Students may take the Nursing Assistant Preparation course (NATP 110) alone or may complete the course along with the other courses listed if a Schoolcraft skills certificate is desired. Both options provide students with eligibility to take the state CENA (competency evaluated nursing assistant) exam. The state of Michigan exam is comprised of written and clinical skills evaluations.

This curriculum is designed to prepare the student for an entry-level nursing assistant position with potential for employment opportunities primarily in extended care facilities with some application to hospitals, clinics, doctors' offices, and patients' homes. Classroom lectures, hands-on practice of skills as well as supervised experience in an extended care facility are provided. This program meets federal and state requirements and is offered at the Livonia campus.

The nursing assistant training program has pre-admission requirements that are reviewed each year. Students must also meet health and clinical requirements and be able to pass a criminal background check and urine drug screen. It is essential to contact the Admissions and Welcome Center for a current copy of the requirements to enter the program. Students are admitted several times each year.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

NATP 110	Nursing Assistant Preparation.....	10
BIOL 236*	Human Anatomy and Physiology.....	5
HUM 106	Introduction to Art and Music	1

PROGRAM TOTAL 16 CREDITS

** Students who may transfer to a baccalaureate program should elect the BIOL 237–238 sequence.*

All courses may be applied toward the associate in general studies degree.

PHARMACY

Credentials

Pre-Pharmacy AS degree 76–80 cr.

Major Description

In addition to dispensing medications, pharmacists are knowledgeable about drug interactions and use their medical expertise to monitor patient care and therapies. If you have a mind for math and science, especially biology and chemistry, and a strong desire to help people, a career in pharmacy is a great option. Schoolcraft's program is designed for you to start here and transfer into a university pharmacy program.

- In addition to working in retail pharmacies, pharmacists work in hospitals, clinics, long-term care facilities and the armed services.
- Pharmacists also find employment in academic, research, and public health service organizations.
- Consult with an academic advisor or counselor to ensure that your Schoolcraft courses will transfer to the specific university program you wish to transfer to.

Job Titles & Median Salaries or Hourly Rates

- Pharmacist: \$111,570 (national)

The pre-pharmacy transfer program is designed for students interested in a transferable degree that provides appropriate science content and competencies that will help them as they pursue further study in the field of pharmacy. Students will be introduced to the roles, job opportunities, and some of the timely and important issues in the field of pharmacy.

The pre-pharmacy program provides general education courses at the freshman and sophomore level, with an emphasis on the sciences, in preparation for admission to a university doctoral pharmacy program. Admission to university doctoral pharmacy programs is highly competitive and the transferring institution must be consulted for additional pre-admission requirements.

This program outline provides the framework for a pre-pharmacy program, but it does not represent a final academic plan for any specific four-year college or university. Students need to be aware that many health profession educational programs require background screening. Students who satisfactorily complete all college and program requirements qualify for an associate in science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

PHARM 101	Introduction to Pharmacy	3
MATH 150	Calculus with Analytic Geometry 1	5
BIOL 120	Principles of Biology 1	5
CHEM 111	General Chemistry 1	4

Total Credits 17

First Year—Winter Semester

ENG 101	English Composition 1	3
BIOL 130	Principles of Biology 2	5
CHEM 117	General Chemistry 2 and Qualitative Analysis	5
Social Science*	Select one General Education Social Science course.....	3–4

Total Credits 16–17

First Year—Spring Session

Humanities*	Select one General Education Humanities course	3–4
Social Science*	Select one General Education Social Science course.....	3–4

Total Credits 6–8

Pre-Pharmacy AS Degree

Second Year—Fall Semester

CHEM 213	Organic Chemistry 1	5
BIOL 237	Principles of Human Anatomy and Physiology 1	4
ENG 102	English Composition 2	3
PHYS 181	General Physics 1	4

Total Credits 16

Second Year—Winter Semester

CHEM 214	Organic Chemistry 2	5
BIOL 238	Principles of Human Anatomy and Physiology 2	4
PHYS 182	General Physics 2	4
Humanities*	Select one General Education Humanities course.....	3–4

Total Credits 16–17

Second Year—Spring Session

BIOL 243	Microbiology	4
PHARM 201	Capstone—Portfolio Preparation	1
Select Social Science or Humanities courses if needed to fulfill MACRAO*		

Total Credits 5

PROGRAM TOTAL 76–80 CREDITS

* MACRAO transfer agreement requires a minimum of 8 credits in more than one discipline for both Social Science and Humanities distribution areas. When completing MACRAO, 80 credits will be the minimum program total required.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Completion of the pre-pharmacy program does not guarantee admission into a transfer institution's pharmacy program.

HEALTHCARE & HEALTH SCIENCES ADDITIONAL AREA OF STUDY

PRE-PROFESSIONAL HEALTH

Credentials

Associate in Arts (AA) or Associate in Science (AS) degree..... 60 cr.

Major Description

If you are interested in an advanced degree in the field of healthcare and are looking for an affordable alternative to completing academic foundation and general education courses, Schoolcraft College is the answer.

Our health transfer program is intended for you if you plan to further your education at a four-year college or university in pre-dental hygiene, pre-dentistry, pre-medicine, pre-mortuary science, pre-nursing, pre-occupational therapy, pre-optometry, pre-physical therapy, and pre-veterinary programs.

- The specific courses required will be determined by the destination college or university and the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

Courses are offered in the following subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

ALLIED HEALTH EDUCATION

This one-credit course provides a comprehensive overview of the healthcare industry. It can be very helpful in making decisions about a particular area in which to concentrate your studies. The extensive exploration of current issues and trends in healthcare, including emergence and use of technology in the field, provides you with a distinctive advantage as you prepare to enter the workforce.

PHYSICAL EDUCATION

Interested in exploring your career options in physical education, health and recreation? Schoolcraft College offers courses in fitness and conditioning, wellness, aerobic dance fitness, first aid and personal safety, swimming, tennis, paddleball/raquetball, basketball, weight training, and physical education for elementary teachers.

- Some courses may apply as elective credit toward a Schoolcraft associate degree.
- Play for the Ocelots, or just root for them! Our women's intercollegiate program includes basketball, bowling, cross country, soccer and volleyball. The men's intercollegiate program includes basketball, bowling, cross country, golf and soccer.
- Students currently enrolled in at least one credit class or continuing education and professional development class can register to become members of Schoolcraft College's new Fitness Center. The 11,000-square-foot facility features state-of-the-art fitness equipment and is staffed by degreed, certified professionals.

MANUFACTURING & TECHNOLOGY



Keeping abreast of the continuous changes in the world of industry and technology is a high priority for Schoolcraft College, which has been located in the center of the manufacturing world since the 1960s. Our programs integrate the leading computer technology with state-of-the-art labs and introduce students to new ways of thinking about manufacturing processes in an age where there is an emphasis on quality and sustainability.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Biomedical Engineering Technology degree and post-associate certificate 86–87

- BMET courses 121

Computer Aided Design

- Mechanical degree 88
- Technical certificate 89
- CAD courses 127–128

Design courses (DSGN) 98, 138

Electronic Technology degree, certificate and

skills certificate 90–91

- ELECT courses 139–140

Engineering degree 13, 98

- ENGR courses 141–142

Manufacturing: Advanced Manufacturing degree, certificate and skills certificate 92–93

- MFG courses 153

Metallurgy and Materials Science degree 94

- Metallurgy: Applied Physical certificate 95
- Materials Science post-associate certificate 95
- MET courses 157–158

Quality Management courses (QM) 98, 170

Welding Technology

- Fabrication certificate 96
- Joining Technology degree 97
- Welding Sculpture skills certificate 97
- WELD courses 173–174

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BIOMEDICAL ENGINEERING TECHNOLOGY

Credentials

Biomedical Engineering Technologist AAS degree..... 66–67 cr.
Biomedical Applications post-associate certificate16 cr.

Major Description

Does the idea of working on sophisticated diagnostic equipment and medical devices in a health care setting excite you? If so, the field of biomedical engineering technology could be for you.

Schoolcraft offers a biomedical engineering technologist associate in applied science degree that teaches students to maintain and repair medical electronic equipment in hospitals, labs and industries engaged in the manufacture and sale of these products. For those already working in the field, the biomedical applications post-associate certificate can help you advance in your career by providing you with the knowledge and skills needed to meet the demands of the rapidly changing biomedical field.

- Our state-of-the-art lab enables you to troubleshoot equipment and design prototypes.
- You can apply your skills in the program's two-semester-long internship, which gives you hands-on, in-the-field training in one of the area's most respected hospitals.
- Students must complete internships to be eligible to fulfill program requirements.

Job Titles & Median Salaries or Hourly Rates

- Biomedical Engineering Technician: \$45,864 (Michigan)

Biomedical Applications Post-Associate Certificate

This post-associate certificate in biomedical applications is designed to provide working professionals who have experience and/or training in biomedical engineering opportunities to study new technologies and innovations.

Completion of this program will enhance a professional's ability to meet the demands of rapidly changing technologies in the biomedical field. These courses are also intended to meet requirements for current and future professional certification.

Prior to admission to this program, students must have completed a minimum of an accredited associate degree in biomedical engineering technology. All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. The post-associate certificate is awarded upon successful completion of 16 credit hours (exact number may vary slightly due to credit value or content of course).

Program Courses

A student is required to choose the two courses listed below:

CIS 171	Introduction to Networking	3
CIS 235	Managing and Troubleshooting PCs	3

A student may choose from any of the courses listed below:

BUS 220	Supervision	3
CIS 125	Principles of Information Security	3
CIS 172	Network Security Fundamentals	3
CIS 173	Wireless Local Area Networks	3
CIS 178	Technical Microsoft Windows	3
CIS 250	Systems Development and Design	4
CIS 251	IT Project Management	3
CIS 271	Local Area Networks	3
CIS 273	TCP/IP and Network Architectures	3
ELECT 144	Introduction to Microcontrollers	3
QM 107	Quality Planning and Team Building	3

Completion of a minimum of 16 credit hours is essential.

Courses can be taken through independent study.

Students may choose an applicable 200-level elective.

Biomedical Engineering Technologist AAS Degree

The biomedical engineering technologist (BMET) program is designed to develop technicians able to maintain and service medical electronic equipment in hospitals, pathological and hematological laboratories, and industries engaged in the manufacture and sale of medical electronic equipment. The program is divided into two components. The first year (three semesters) culminates in an electronic technology certificate. In order for candidates to be eligible to apply for the second year of the program they must meet the following qualifications:

1. Have an overall GPA of 2.5.
2. Achieve a minimum GPA of 2.5 in each electronics course.
3. Achieve a minimum GPA of 3.0 in Biology 105.

Candidates who have met these conditions must be approved by the BMET Internship Coordinator before registering in BMET 116, BMET 204, BMET 254 or BMET 255. Due to the limited availability of worksites, candidates who have met these conditions will be prioritized for admission into the BMET sequence based on the following elements: BMET application date, overall GPA, position in the sequence of program courses. Students must complete internships to be eligible to fulfill program requirements.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

This program requires a special admissions process. Contact the Admissions and Welcome Center at 734-462-4426 or admissions@schoolcraft.edu to complete an application.

SAMPLE SCHEDULE OF COURSES**Admission Prerequisites****First Year—Fall Semester**

ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling.....	5
ENG 101	English Composition 1.....	3
BIOL 105	Basic Human Anatomy and Physiology.....	4

Total Credits 15**First Year—Winter Semester**

ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors.....	3
ELECT 180	LabVIEW Programming CORE 1 and 2	5

Total Credits 13**First Year—Spring/Summer Session**

ELECT 215	Operational Amplifiers and Linear Integrated Circuits.....	4
ELECT 219	Digital Logic Circuits	4

Total Credits 8**Admission to the Biomedical Program Internship Sequence****Second Year—Fall Semester**

BMET 116	Biomedical Instrumentation Terminology and Safety 1.....	3
Mathematics	Select 1	4
MATH 111	Applications—Utility of Math	
MATH 113	Intermediate Algebra for College Students	
Social Science	Select 1	3
POLS 209	International Relations	
PSYCH 153	Human Relations	
SOC 210	Cultural Diversity	
English	Select 1	3
ENG 102	English Composition 2	
ENG 116	Technical Writing	

Total Credits 13**Second Year—Winter Semester**

BMET 204	Biomedical Instrumentation Terminology and Safety 2.....	4
BMET 254	Biomedical Equipment Internship 1	3
Elective*	Select from the list below	3–4
Elective*	Select from the list below	3–4
HUM 106	Introduction to Art and Music	1

Total Credits 14–16**Second Year—Spring/Summer Session**

BMET 255	Biomedical Equipment Internship 2	3
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Total Credits 3**PROGRAM TOTAL 66–68 CREDITS**

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with an academic advisor or counselor.

** Number of credits may vary depending on the course selection.*

Electives

BMET 125	Laser Safety Concepts	3
CIS 171	Introduction to Networking	3
CIS 235	Managing and Troubleshooting PCs	3
COMPS 124	Introduction to Personal Computers and Software	3
COMPS 126	Technical Programming	3
ELECT 144	Introduction to Microcontrollers	3
ELECT 145	Fluid Power	4
ELECT 218	AC/DC Motors	3
ELECT 228	Electronic Troubleshooting	3
ELECT 251	Programmable Logic and Industrial Controls...4	
MET 102	Introduction to Materials Science	3

COMPUTER AIDED DESIGN/DRAFTING (CAD)

Credentials

CAD: Drafting-Technical certificate.....	28 cr.
CAD: Mechanical AAS degree	65 cr.

Major Description

Computer-aided design (CAD) is the use of computer systems to assist in the creation, modification, analysis, or optimization of a design. Schoolcraft College offers both a CAD drafting-technical certificate and a CAD mechanical associate degree.

- Our CAD mechanical program results in an associate in applied science degree which focuses on design and project management.
- The CAD drafting technical certificate will prepare you for employment as a CAD drafter or detailer. You may transfer into the CAD associate degree program at any time.

Job Titles & Median Salaries or Hourly Rates

- Mechanical Designer: \$50,110 (national)
- Tool Designer: \$58,032 (national)
- Technical Drafter: \$47,880 (national)

Technology improvements have moved the world of design from the drafting arena to the data management and design world. The designer now must produce multiple design proposals through a process which includes modeling, simulation, performance analysis and free form fabrication. Product life cycle management concepts are ingrained into this program addressing the management of all data related to the design, production and support of manufactured goods.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CAD 103	Engineering Graphics.....	3
ENGR 100	Introduction to Engineering and Technology ...	3
MET 102	Introduction to Materials Science	3
MATH 113**	Intermediate Algebra for College Students.....	4
HUM 106*	Introduction to Art and Music	1

Total Credits 14

First Year—Winter Semester

MET 114	Engineering Materials.....	3
CAD 106	Advanced Drawing Views and Descriptive Geometry	4
MFG 105	Manufacturing Processes	4
Elective	Select 1	4
CAD 211	CATIA—Level 1	
CAD 221	SolidWorks—Level 1	

Total Credits 15

First Year—Spring/Summer Session

MATH 119	Trigonometry.....	3
ENG 100*	Communication Skills.....	3

Total Credits 6

CAD: Mechanical AAS Degree

Second Year—Fall Semester

DSGN 180	Machine Elements and Design	4
ENG 106*	Business English	3
MFG 102	Basic Machining Processes	3
CAD 107	Detailing.....	4

Total Credits 14

Second Year—Winter Semester

DSGN 250	Tool, Die, and Fixture Design	4
DSGN 280	Capstone Project.....	4
PHYS 123	Applied Physics.....	5
PSYCH 153*	Human Relations.....	3

Total Credits 16**PROGRAM TOTAL 65 CREDITS**

* Other courses meeting the college requirements may be substituted.

** MATH 113 may be waived if student has successfully completed high school Algebra II or based on student's placement test score.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

CAD: Drafting-Technical Certificate

Skills developed in these courses prepare the student for employment as a CAD drafter or detailer. Students at any time may transfer into the computer aided design associate degree program.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CAD 103	Engineering Graphics.....	3
MET 102	Introduction to Materials Science.....	3
MFG 102	Basic Machining Processes	3
MATH 113*	Intermediate Algebra for College Students.....	4

Total Credits 13

First Year—Winter Semester

CAD 106	Advanced Drawing Views and Descriptive Geometry	4
MATH 119	Trigonometry.....	3
MFG 105	Manufacturing Processes.....	4
Elective	Select 1	4
CAD 211	CATIA—Level 1	
CAD 221	SolidWorks—Level 1	

Total Credits 15

PROGRAM TOTAL 28 CREDITS

*MATH 113 may be waived if student has successfully completed high school Algebra II or based on student's placement test score.

ELECTRONIC TECHNOLOGY

Credentials

Electronic Technology skills certificate.....	16 cr.
Electronic Technology certificate	33–34 cr.
Electronic Technology AAS degree	60–62 cr.

Major Description

Are you known for your troubleshooting talent? Put your skills to work in a career as an electronics repairer or electronics engineering technician.

After just two semesters of study here, you can go out in the work world and get a job as an electronics repairer. After four semesters you'll qualify as an electronics engineering technician, able to work side-by-side with engineers to design and test computers, electronic devices and appliances, and medical and industrial equipment.

- Our labs will enhance your basic knowledge of microcontrollers, programmable logic controllers, and digital and analog circuits, while lectures will teach you how to take measurements and report your findings in a clear and concise manner.
- We'll also introduce you to simulation software that significantly streamlines the design process.
- The electronics technology certificate is also required to apply for and enter Schoolcraft's biomedical engineering technology associate degree program.

Job Titles & Median Salaries or Hourly Rates

- Electronics Repairer: \$49,170 (national)
- Electronics Engineering Technician: \$47,632 (Michigan)

This electronics program is designed to give students a strong background in the fundamentals of electricity, electronic devices and basic circuits (digital and linear). The curriculum includes laboratory demonstration of the principles taught in class affording practical experience in fabrication, instrumentation and presentation.

The program is not directly aimed at specific products. With the multiplicity of equipment presently in use and the rapid advance and change in technology, the department stresses the development of a broad background that will enable students to find employment and be able to further their skills in a diversified number of industries.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling	5
ENG 101	English Composition 1	3
Science	Select 1	4–5
BIOL 105	Basic Human Anatomy and Physiology	
CHEM 111	General Chemistry 1	
PHYS 123	Applied Physics	

Total Credits 15–16

First Year—Winter Semester

ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors.....	3
ELECT 180	LabVIEW Programming CORE 1 and 2	5

Total Credits 13

First Year—Spring/Summer Session

ELECT 215	Operational Amplifiers and Linear Integrated Circuits.....	4
ELECT 219	Digital Logic Circuits	4

Total Credits 8

Electronic Technology AAS Degree

Second Year—Fall Semester

ELECT 144	Introduction to Microcontrollers	3
ELECT 218	AC/DC Motors	3
Social Science	Select 1	3
POLS 209	International Relations	
PSYCH 153	Human Relations	
SOC 210	Cultural Diversity	
English	Select 1	3
ENG 102	English Composition 2	
ENG 116	Technical Writing	

Total Credits 12

Second Year—Winter Semester

ELECT 251	Programmable Logic and Industrial Controls...	4
Elective*	Select from the list below	3–4
Mathematics	Select 1	4
MATH 111	Applications—Utility of Math	
MATH 113	Intermediate Algebra for College Students	
HUM 106	Introduction to Art and Music	1

Total Credits 12–13

PROGRAM TOTAL 60–62 CREDITS

* Number of credits may vary depending on the course selection.

Electives

BMET 125	Laser Safety Concepts	3
CIS 171	Introduction to Networking	3
CIS 235	Managing and Troubleshooting PCs	3
COMPS 124	Introduction to Personal Computers and Software	3
COMPS 126	Technical Programming	3
ELECT 133	Introduction to Battery Technology.....	3
ELECT 145	Fluid Power	4
ELECT 228	Electronic Troubleshooting	3
ELECT 252	Programmable Logic System Design	4
MET 102	Introduction to Materials Science	3

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electronic Technology Certificate

The certificate for electronics provides the student with a solid foundation for many jobs that require a thorough understanding of electronic fundamentals. Completion of the certificate program also offers the student the opportunity to pursue advanced technical credentials in health care, in manufacturing, or in computer systems.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling.....	5
ELECT 180	LabVIEW Programming CORE 1 and 2	5
Science	Select 1	4–5
BIOL 105	Basic Human Anatomy and Physiology*	
CHEM 111	General Chemistry 1	
PHYS 123	Applied Physics	

Total Credits 17–18

Winter Semester

ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors.....	3

Total Credits 8

First Year—Spring/Summer Session

ELECT 215	Operational Amplifiers and Linear Integrated Circuits	4
ELECT 219	Digital Logic Circuits	4

Total Credits 8

PROGRAM TOTAL 33–34 CREDITS

* BIOL 105 is required for the BMET program internship sequence.

Electronic Technology Skills Certificate

The electronic technology certificate is intended for students wishing to gain the basic skills needed for entry-level jobs in electronics. Completion of the skills certificate permits the student to take electrical measurements, understand DC and AC signals, and apply solid-state troubleshooting techniques used in modern jobs involving electronics.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ELECT 131	Basic Measurement and Reporting Skills	3
ELECT 137	DC Circuits and Mathematical Modeling.....	5

Total Credits 8

First Year—Winter Semester

ELECT 138	AC Circuits and Mathematical Modeling	5
ELECT 139	Diodes and Transistors.....	3

Total Credits 8

PROGRAM TOTAL 16 CREDITS

MANUFACTURING

Credentials

Advanced Manufacturing skills certificate	18 cr.
Advanced Manufacturing certificate	31 cr.
Advanced Manufacturing AAS degree	61–67 cr.

Major Description

Today's manufacturing professionals not only need to know the fundamentals of production, they must be able to think critically, solve problems and have a thorough understanding of the technology they can use to manufacture products efficiently and with the highest quality. Our program will expose you to manufacturing processes, materials, methods of production and quality systems and tools.

- Our associate degree will give you the know-how to program CNC machines, work as a production manager or quality technician, or further your education.
- Our instructors have years of experience in the field of manufacturing and know how to teach from the employer's perspective.
- Protective shop clothing and eye protection supplies are required to be purchased.

Job Titles & Median Salaries or Hourly Rates

- Production Manager: \$57,096 (Michigan)
- Quality Assurance Specialist: \$33,030 (national)
- CNC Programmer: \$49,036 (Michigan)

The advanced manufacturing program is designed to provide learners with growth and development in a variety of manufacturing processes, to expose them to materials and methods of production and make them aware of quality systems and tools. While this program offers an entry level certification for individuals pursuing a career in manufacturing, it has been designed to enable individuals the opportunity to continually expand and upgrade their applied skills as well as to maintain a thorough mastery of evolving manufacturing technologies.

Protective shop clothing and eye protection supplies required for the program will be purchased by the student.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MFG 101	Geometric Dimensioning and Tolerance, with Inspection.....	3
MFG 102	Basic Machining Processes	3
ENGR 100	Introduction to Engineering and Technology ...	3
CAD 103	Engineering Graphics.....	3
ENG 100*	Communication Skills.....	3

Total Credits 15

First Year—Winter Semester

MFG 103	Basic Computer Numerical Control (CNC)	3
MFG 106	Basic Mastercam.....	3
QM 107	Quality Planning and Team Building.....	3
MFG 105	Manufacturing Processes.....	4

Total Credits 13

First Year—Spring Session

Elective	Select from the list below	3
Science	General Education Science course	3–5

Total Credits 6–8

Advanced Manufacturing AAS Degree

Second Year—Fall Semester

MFG 203	Advanced Computer Numerical Control (CNC)...	3
MFG 206	Advanced Mastercam.....	3
MET 102	Introduction to Materials Science	3
ENG 106*	Business English	3
Social Science	General Education Social Science course	3–4

Total Credits 15–16

Second Year—Winter Semester

MFG 211	3D Computer Numerical Control (CNC) Machining.....	3
MET 114	Engineering Materials.....	3
Mathematics	General Education Mathematics course	3–5
Humanities	General Education Humanities course	3–4

Total Credits 12–15

PROGRAM TOTAL 61–67 CREDITS

* Other courses meeting the college requirements may be substituted.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

WELD 110	Introduction to Welding—Fabrication Basics...	3
WELD 115	Gas Metallic Arc Welding (G.M.A.W./M.I.G.)...	3
WELD 119	Gas Tungsten Inert Arc Welding (G.T.A.W./T.I.G.).....	3

Advanced Manufacturing Certificate

The advanced manufacturing certificate addresses basic competency in skills needed for employment in today's highly technical manufacturing environments. The certificate is designed to train those new to manufacturing, but also serves to update the skills of seasoned manufacturing workers with the most current technology and techniques. These classes all apply to the advanced manufacturing associate degree.

Protective shop clothing and eye protection supplies required for the program will be purchased by the student.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MFG 101	Geometric Dimensioning and Tolerance, with Inspection.....	3
MFG 102	Basic Machining Processes	3
CAD 103	Engineering Graphics.....	3
ENGR 100	Introduction to Engineering and Technology ...	3

Total Credits 12

First Year—Winter Semester

MFG 103	Basic Computer Numerical Control (CNC)	3
MFG 106	Basic Mastercam.....	3
QM 107	Quality Planning and Team Building.....	3
MFG 105	Manufacturing Processes.....	4

Total Credits 13

First Year—Spring Session

MFG 203	Advanced Computer Numerical Control (CNC)...	3
MFG 206	Advanced Mastercam.....	3

Total Credits 6

PROGRAM TOTAL 31 CREDITS

Advanced Manufacturing Skills Certificate

The advanced manufacturing skills certificate introduces learners to advanced skills and techniques in manufacturing. It provides the basic skills needed for employment in today's highly technical manufacturing environments. These classes all apply to the advanced manufacturing associate degree.

Protective shop clothing and eye protection supplies required for the program will be purchased by the student.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MFG 101	Geometric Dimensioning and Tolerance, with Inspection.....	3
MFG 102	Basic Machining Processes	3
ENGR 100	Introduction to Engineering and Technology ...	3

Total Credits 9

First Year—Winter Semester

MFG 103	Basic Computer Numerical Control (CNC)	3
MFG 106	Basic Mastercam.....	3
QM 107	Quality Planning and Team Building.....	3

Total Credits 9

PROGRAM TOTAL 18 CREDITS

METALLURGY AND MATERIALS SCIENCE

Credentials

Metallurgy: Applied Physical certificate	30 cr.
Metallurgy and Materials AAS degree	63–64 cr.
Materials Science post-associate certificate	16 cr.

Major Description

In an era of increased emphasis on sustainability and quality assurance, knowledge about metals and other materials used in products, manufacturing processes and construction is invaluable.

Established in 1966, our metallurgy and materials science department is one of the longest continually running programs at Schoolcraft and is the only two-year program of its type offered in Michigan.

Schoolcraft College can help prepare you for positions ranging from technician to plant manager.

- You'll learn on an array of testing equipment including computers, microscopes and a state-of-the-art Scanning Electron Microscope (SEM) used for compositional and image analysis of materials.
- You'll have the opportunity to publish and present a technical paper to a panel of experts at a technical seminar.
- If you already work in the profession, build your knowledge of the newest materials and technologies with our post-associate certificate.

Job Titles & Median Salaries or Hourly Rates

- Metallurgical Engineering Technician: \$47,632 (Michigan)

The metallurgy and materials science program has been specifically designed to accommodate most areas of industry associated with research, development, manufacturing and materials control. Carefully selecting electives will prepare students for specialization. Students interested in the laboratory control of processing may wish to select electives in welding, fabrication, manufacturing processes or quality control. Likewise, students interested in development or industrial research may wish to complete electives in materials or physical science, design or computer technology.

Metallurgy and materials science graduates have knowledge of the philosophy of metallic and nonmetallic materials used in industry and can apply principles basic to scientific laboratory investigation, research, product development and process control.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Students seeking transfer to a baccalaureate program should request transfer guides provided by the department.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MET 102	Introduction to Materials Science	3
MET 120*	Hazardous Materials Management	2
ENGR 100	Introduction to Engineering and Technology ...	3
MET 152	Structure and Properties Laboratory	3
MATH 113	Intermediate Algebra for College Students	4
HUM 106	Introduction to Art and Music	1

Total Credits 16

First Year—Winter Semester

English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	
CAD 103	Engineering Graphics	3
MET 114	Engineering Materials	3
BIOL 140	Scanning Electron Microscopy	4
MET 211*	Physical Metallurgy Structures	3

Total Credits 16

Metallurgy and Materials Science AAS Degree

First Year—Spring/Summer Session

Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
SOC 201	Principles of Sociology	
English	Select 1	3
ENG 102	English Composition 2	
ENG 106	Business English	
ENG 116	Technical Writing	

Total Credits 6

Second Year—Fall Semester

MET 215*	Mechanical Properties of Metals	3
MET 217*	Computer Applications in Materials Science	3
MFG 102	Basic Machining Processes	3
WELD 113	Shielded Metallic Arc Welding (S.M.A.W.)	3

Total Credits 12

Second Year—Winter Semester

MET 248*	Electron Microscopy and Image Analysis	3
MET 280*	Special Problems in Materials Science	4
WELD 262	Welding Metallurgy	3
Elective	Select from the list below	3–4

Total Credits 13–14

PROGRAM TOTAL 63–64 CREDITS

* These classes are offered on a rotational basis. Contact Metallurgy faculty for current and projected offerings.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

BUS 103	Organizing a Small Business	3
MET 160*	Composite Materials	3
MET 271*	Corrosion and Corrosion Analysis	4
MFG 105	Manufacturing Processes	4

Metallurgy: Applied Physical Certificate

The applied physical metallurgy certificate program is designed to provide people currently employed in the field with an opportunity to reinforce skills and acquire the academic foundations necessary for advancement in the laboratory and related process situations. The program is oriented to property, process and structure areas of study and is designed and scheduled with consideration for part-time students.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MET 102	Introduction to Materials Science.....	3
MFG 102	Basic Machining Processes	3
MET 120*	Hazardous Materials Management	2
MET 152	Structure and Properties Laboratory	3

Total Credits 11

First Year—Winter Semester

MET 114	Engineering Materials.....	3
WELD 113	Shielded Metallic Arc Welding (S.M.A.W.)	3
Elective**	MET	3

Total Credits 9

Second Year—Fall Semester

MET 211*	Physical Metallurgy Structures.....	3
MET 215*	Mechanical Properties of Metals	3

Total Credits 6

Second Year—Winter Semester

MET 280*	Special Problems in Materials Science.....	4
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Total Credits 4

PROGRAM TOTAL 30 CREDITS

* These classes are offered on a rotational basis. Contact Metallurgy faculty for current and projected offerings.

** Any Metallurgy course not previously taken.

Materials Science Post-Associate Certificate

This post-associate certificate in materials science is designed for working professionals who have industrial experience and/or training in the materials science field and who wish to study current technologies applied to laboratory practice and other materials-related endeavors.

Completion of this program will enhance students' abilities to meet the needs of current and changing industrial technologies in metallurgical and materials science applications, processing, and control environments. It will also provide support background for managerial and technical personnel who have direct responsibilities in industrial materials operations and planning. These courses are also intended to meet requirements for current and future professional certification.

Prior to admission students must have earned a minimum of an accredited associate degree in applied science.

All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. The post-associate certificate is awarded upon successful completion of 16 credit hours (exact number may vary slightly due to credit value or content of courses).

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

MET 211*	Physical Metallurgy Structures	3
MET 215*	Mechanical Properties of Metals	3
Elective	Select any applicable MET 200-level course	3–4

Total Credits 9–10

First Year—Winter Semester

MET 280*	Special Problems in Materials Science.....	4
Elective	Select any applicable MET 200-level course	3–4

Total Credits 7–8

Completion of a minimum of 16 credit hours is required.

Courses can be taken through independent study.

* These classes are offered on a rotational basis. Contact Metallurgy faculty for current and projected offerings.

WELDING TECHNOLOGY

Credentials

Welding Sculpture skills certificate	19 cr.
Fabrication certificate	33 cr.
Joining Technology AAS degree	60–62 cr.

Major Description

Our welding program will provide you with both hands-on welding skills and vital knowledge of metallurgy and other materials. Today's quality-focused manufacturing world demands highly-skilled fabricators and welders. Schoolcraft offers a welding fabrication certificate that will prepare you for jobs involving metal inert gas (MIT) and tungsten inert gas (TIG) welding as well as plasma, arc and oxy-gas cutting technologies. The welding sculpture skills certificate program helps the professional sculptor or the aspiring welder gain the knowledge and skills needed in today's art world and welding industry.

- The welding joining technology associate in applied science degree program will prepare you for a job in industrial, prototype and machine tool building, heavy equipment, construction and emerging green and sustainable technologies.
- Courses in manufacturing and metallurgy provide a better understanding of the process and allow students to become a highly skilled welder.
- Our state-of-the-art welding lab features 12 booths for M.I.G., T.I.G. and Stick, plus five for oxy-acetylene welding.
- Class sizes are limited so instructors are able to work individually with you as you perform hands-on and analytical tasks required by modern industrial technology.

Job Titles & Median Salaries or Hourly Rates

- Cutter, Solderer, Brazer: \$36,800 (national)
- Welder: \$43,420 (Michigan)

Welding: Fabrication Certificate

The welding fabrication program prepares students for employment under classifications such as welders and/or industrial fabrications. The program includes joining materials, using weldments, special techniques, equipment and other recognized fastening methods. Students acquire skills in the broad categories of welding and fabrication with added emphasis upon support technical subjects.

Students are required to purchase protective clothing, protective (safety) shoes and eye protection equipment.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES**First Year—Fall Semester**

WELD 113	Shielded Metallic Arc Welding (S.M.A.W.)	3
WELD 115	Gas Metallic Arc Welding (G.M.A.W./M.I.G.)	3
WELD 119	Gas Tungsten Inert Arc Welding (G.T.A.W./T.I.G.)	3

Total Credits 9**First Year—Winter Semester**

WELD 111	Project Mathematics	4
WELD 120	Advanced Processes—Stick Electrode and M.I.G. Welding	3
WELD 130	Advanced Processes—Gas Tungsten	3
MET 102	Introduction to Materials Science	3

Total Credits 13**First Year—Spring Session**

WELD 205	Welder's Print Reading	2
WELD 210-214*	Exam Preparation— <i>Select from the list below</i>	3

Total Credits 5**First Year—Summer Session**

WELD 206	Welding Inspection and Qualification	2
WELD 223	Fabrication	4

Total Credits 6**PROGRAM TOTAL 33 CREDITS****Elective (Optional)**

WELD 111	Project Mathematics	4
WELD 112	Contemporary Metal Sculpture 1	3

***Exam Preparation: (Select one)**

WELD 210	Preparation for Welder Certification in Shielded Metallic Arc Welding (S.M.A.W.)	3
WELD 211	Preparation for Welder Certification in Gas Metallic Arc Welding (G.M.A.W./M.I.G.)	3
WELD 212	Preparation for Welder Certification in G.T.A.W./T.I.G.	3
WELD 214	Preparation for Welder Certification in Pipe Welding	3

Exams for above certificate will also be provided on an individual basis.

Welding: Joining Technology AAS Degree

There is an ever increasing need for persons today that possess skills, both in welding and metallurgy. Materials of industry and new technology require highly skilled persons that understand material sciences, metallurgy, and the joining processes used to produce optimum quality fabrications. The quality conscience industry of today demands certified people that can perform tasks from the simplest, to more complex technical applications. The courses selected in this program will give the student the required skills needed to perform, both hands on and analytical tasks required by modern industrial technology.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Students seeking transfer to a baccalaureate program should request transfer guides provided by the department.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 100	Communication Skills.....	3
MET 102	Introduction to Materials Science.....	3
WELD 113	Shielded Metallic Arc Welding (S.M.A.W.)	3
WELD 115	Gas Metallic Arc Welding (G.M.A.W./M.I.G.).....	3
HUM 106	Introduction to Art and Music	1

Total Credits 13

First Year—Winter Semester

ENG 106	Business English.....	3
Mathematics	Select 1	3–4
MATH 101	Business Mathematics	
MATH 111	Applications—Utility of Math	
WELD 119	Gas Tungsten Inert Arc Welding (G.T.A.W./T.I.G.)	3
WELD 120	Advanced Processes—Stick Electrode and M.I.G. Welding	3

Total Credits 12–13

First Year—Spring Session

WELD 205	Welder's Print Reading	2
Social Science	Select 1	3
PSYCH 153	Human Relations (recommended)	
POLS 105	Survey of American Government	
SOC 201	Principles of Sociology	

Total Credits 5

First Year—Summer Session

WELD 206	Welding Inspection and Qualification	2
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Total Credits 2

Second Year—Fall Semester

MFG 102	Basic Machining Processes	3
MET 114	Engineering Materials.....	3
MET 152	Structure and Properties Laboratory	3
WELD 130	Advanced Processes—Gas Tungsten	3

Total Credits 12

Second Year—Winter Semester

WELD 118	Adhesive Joining Technology	4
WELD 262	Welding Metallurgy.....	3
Science*	Select any General Education Science course.....	3–5
MET 211	Physical Metallurgy Structures.....	3

Total Credits 13–15

Second Year—Spring Session

WELD 210-214**	Exam Preparation— Select from the list below	3
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Total Credits 3

Second Year—Summer Session

WELD 223	Fabrication	4
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Total Credits 4

PROGRAM TOTAL 64–67 CREDITS

Elective (Optional)

WELD 111	Project Mathematics	4
WELD 112	Contemporary Metal Sculpture 1	3

*Number of credits may vary depending on the General Education Science course selection.

** Exam Preparation: (Select One)

WELD 210	Preparation for Welder Certification in Shielded Metallic Arc Welding (S.M.A.W.)	3
WELD 211	Preparation for Welder Certification in Gas Metallic Arc Welding (G.M.A.W./M.I.G.)	3
WELD 212	Preparation for Welder Certification in G.T.A.W./T.I.G.	3
WELD 214	Preparation for Welder Certification in Pipe Welding.....	3

Exams will also be provided on an individual basis.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Welding Sculpture Skills Certificate

The focus of both the welding industry and sculpture is fabrication. Because sculpture requires artists to use materials, tools, and skills, it is natural for artists and the welding industry to merge. This welding sculpture skills certificate helps the professional sculptor or the aspiring welder gain the knowledge and skills needed in today's art world and welding industry.

Students learn basic and advanced skills in welding with the MIG and TIG welding processes as well as many fabrication techniques used in today's industry. They learn how to think and work creatively with these processes and how to conceptually and objectively discuss their work. New fabrication processes are explored to give the student an understanding of how alternative methods of fabrication satisfy different needs. This certificate creates an artistic option for entry into the welding fabrication certificate and the welding joining technology associate degree.

Students are required to purchase protective clothing, protective (safety) shoes and eye protection equipment.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

WELD 112	Contemporary Metal Sculpture 1	3
WELD 115	Gas Metallic Arc Welding (G.M.A.W./M.I.G.).....	3
WELD 119	Gas Tungsten Inert Arc Welding (G.T.A.W./T.I.G.).....	3

Total Credits 9

First Year—Winter Semester

WELD 120	Advanced Processes—Stick Electrode and M.I.G. Welding	3
WELD 130	Advanced Processes—Gas Tungsten	3

Total Credits 6

First Year—Spring Session

WELD 208	Advanced Metal Sculpture.....	4
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Total Credits 4

PROGRAM TOTAL 19 CREDITS

MANUFACTURING & TECHNOLOGY ADDITIONAL AREAS OF STUDY

ENGINEERING

Credentials

Associate in Engineering (AE) degree.....60 cr.

Major Description

This program is designed for students who intend to pursue a bachelor's degree in engineering. It allows the student to establish a strong academic foundation in mathematics and science, complete courses to fulfill general education requirements, and enroll in engineering courses—all before moving on to a bachelor's degree program at another college or university.

- Civil, chemical, computer systems, electrical, environmental, industrial, and mechanical engineering are among the most popular bachelor's degrees, although there are more than 25 recognized specialties.
- Schoolcraft's program can prepare the student for transfer into any engineering specialty.
- The specific courses required will be determined by the destination college or university and/or the student's intended major.
- Students must work with an academic advisor or counselor to ensure that their courses transfer.

Courses are offered in the following subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

DESIGN

Design is at the heart of manufacturing, where skilled professionals develop specifications, manage the development life cycle process, and apply their knowledge of application and material properties.

Schoolcraft College offers several courses that allow you to explore your interests, like descriptive geometry; geometric dimensioning and tolerancing; and tool, die and fixture design. You'll gain knowledge that applies to any number of manufacturing fields, while earning credits that may apply toward an associate in applied science degree in computer aided design/ mechanical.

QUALITY MANAGEMENT

Quality planning and team building are essential to manufacturing. As part of the associate degree and certificate programs in manufacturing and technology, Schoolcraft offers a course in management that explores quality systems, quality planning and team building, statistical methods, Six Sigma Methods, and new programs used in process/product development validation. Control plans and teamwork are used to demonstrate the dynamics of group synergism.

NATURAL SCIENCES

The natural sciences encompass the studies of our world and all its phenomena. The ability to think analytically gives us the power to observe our surroundings, come up with original hypotheses, make new discoveries, and solve the world's problems. Beneath the umbrella of natural sciences, Schoolcraft College offers seven different areas of study that will open up new doors and prepare you for entry into a wide range of careers.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/ctc). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Biology courses (BIOL)	103, 119–121
Chemistry courses (CHEM)	103, 123–124
Environmental Studies degree and certificate	101–102
• ENVR courses	144
Geography courses (GEOG)	103, 146–147
Geology courses (GEOL)	103, 147
Mathematics courses (MATH)	103, 155–156
Physics courses (PHYS)	103, 169



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ENVIRONMENTAL STUDIES

Credentials

Environmental Science Technician certificate.....	31 cr.
Environmental Studies AAS degree	60 cr.

Major Description

Everyone's going "green." Join the forefront of this rising movement with a career in environmental studies. Study the environment, related sciences, communication, and geographic information systems while pursuing an environmental science technician certificate or associate in applied science degree. Prepare yourself for immediate entry into this fast-growing field and gain a higher understanding of the complex interactions between the human population and the earth.

- Complete a spring co-op experience in your final semester that lets you apply your knowledge and practice your skills in a real-world situation.

Job Titles & Median Salaries or Hourly Rates

- Environmental Science Technician: \$41,380 (national)

The environmental studies program is an interdisciplinary program that concentrates on the identification of environmental problems and the analysis of the complex interactions of human populations with the earth. The program includes discussions of technology and how it impacts the environment. Program courses incorporate the concept of sustainable development, a form of economic development that encourages economic growth while at the same time improving quality of life and preserving the environment. The capstone course is a Field Experience course where students apply classroom knowledge to a field environmental issue. Students in the environmental studies program can transfer to a four-year environmental studies or environmental science program, or complete an environmental technician certificate.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Students seeking transfer to a baccalaureate program should request transfer guides provided by the department.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

ENG 101	English Composition 1.....	3
COMA 103	Fundamentals of Speech	3
MATH 113	Intermediate Algebra for College Students.....	4
GEOG 135	Earth Systems	4

Total Credits 14

First Year—Winter Semester

ENG 102	English Composition 2.....	3
GEOG 212	Environmental Science	3
ENVR 107	Soil Mechanics.....	4
ART 115	Art History 1	4

Total Credits 14

Environmental Studies AAS Degree

Second Year—Fall Semester

POLS 105	Survey of American Government.....	3
CIS 225	Database Management Systems	3
ENVR 230	Energy Resources	3
GEOG 225	Introduction to Geographic Information Systems—GIS	4

Total Credits 13

Second Year—Winter Semester

CHEM 111	General Chemistry 1	4
GEOG 217	Water Resources	3
ENVR 206	Environmental Law	3
GEOG 203	Weather and Climate.....	3
ENVR 235	Geographic Methods Applied to Environmental Problems	3

Total Credits 16

Second Year—Spring Session

ENVR 232	Field Experience	3
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Total Credits 3

PROGRAM TOTAL 60 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Environmental Science Technician Certificate

Environmental science technicians provide technical assistance to engineers and scientists by performing tasks such as sample collection, laboratory tests, monitoring, and data management. The environmental science technician applies scientific and technical skills and knowledge to specific tasks. Technicians have strong written and oral communication skills, computer skills, and practical hands on training in the field and laboratory. Technicians can problem solve quickly and apply their classroom knowledge to real world situations. The environmental science technician program provides students with the necessary background to be successful technicians.

Upon completion of this certificate program, it is highly recommended that students complete the 40 hour Hazardous Waste Operations and Emergency Response (Hazwoper) training from any certified location.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

GEOG 135	Earth Systems	4
MATH 113	Intermediate Algebra for College Students.....	4
GEOG 225	Introduction to Geographic Information Systems—GIS	4

Total Credits 12

First Year—Winter Semester

ENVR 107	Soil Mechanics	4
ENVR 206	Environmental Law.....	3
GEOG 212	Environmental Science	3
GEOG 217	Water Resources	3
ENVR 235	Geographic Methods Applied to Environmental Problems.....	3

Total Credits 16

First Year—Spring Session

ENVR 232	Environmental Field Experience.....	3
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Total Credits 3

PROGRAM TOTAL 31 CREDITS

NATURAL SCIENCES ADDITIONAL AREAS OF STUDY

Courses are offered in a number of subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

BIOLOGY

Schoolcraft offers courses in biology, conservation, health education, human anatomy, natural resources, microbiology, and nutrition. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for science into rewarding and challenging career and academic pursuits.

- Learn in state-of-the-art facilities inside the Biomedical Technology Center, including the Anatomy and Physiology Lab, the Cellular and Molecular Biology Lab, and the Imaging and Analysis Lab, which houses the college's state-of-the-art Scanning Electron Microscope.
- Get valuable lab experience with DNA biotechnology equipment, protocols, field research and the use of plastinated cadavers and organs.

CHEMISTRY

Schoolcraft offers courses in chemistry, organic chemistry, biochemistry, and food chemistry. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for science into rewarding and challenging career and academic pursuits.

Enjoy our newly renovated state-of-the-art chemistry laboratories, which have chemical preparation areas, as well as balance and instrument rooms.

- Students have access to new and updated laboratory instrumentation, including gas chromatography, infrared and UV-Visible spectroscopy, and in-lab computers for experimental data acquisition.

GEOGRAPHY

Schoolcraft offers courses in environmental science, physical and world geography, and Geographic Information Systems that give you a higher understanding of climates, cultures, ecology, economics, population studies, and more. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for science into rewarding and challenging career and academic pursuits.

Take courses on topics ranging from the study of human impact on the natural environment to the study of water resources and economic policies around the world.

GEOLOGY

Schoolcraft's geology courses address plate tectonics, earthquakes, volcanic eruptions, glaciers, rivers, and more. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for science into rewarding and challenging career and academic pursuits.

- Participate in labwork that concentrates on the methods used to identify more than 100 different minerals.
- Embark on an exploratory field trip to one of Michigan's many geological landmarks.

MATHEMATICS

Schoolcraft offers an extensive array of mathematics courses. They cover basic math, intermediate algebra, trigonometry, statistics, precalculus (with and without trigonometry), calculus, calculus with analytic geometry, linear algebra, and differential equations. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for mathematics into rewarding and challenging career and academic pursuits.

- Join the Math and Physics club, which offers challenging activities and an annual competition.
- Compete for the Pythagorean Prize, which honors two top winners each year with cash prizes and recognition.
- Publish student-authored articles and research, along with information about trends and careers in mathematics, in *The Right Angle*.

PHYSICS

Schoolcraft offers courses in basic, applied, general, and engineering physics. You can take courses ranging from Introduction to Astronomy to Physics for Scientists and Engineers. Courses are designed for transfer into a bachelor's degree program and are intended for students who want to apply their aptitude for science into rewarding and challenging career and academic pursuits.

- Labwork and lectures cover optics, harmonics, magnetism, and momentum.
- Physics for Scientists and Engineers builds a solid foundation for advanced study in both physics and engineering.



PUBLIC SAFETY

Public safety is a vital part of today's world. Whether we like it or not, emergencies happen, and the brave men and women who come to our aid need to be well-trained, alert, and responsible. Schoolcraft College offers four areas of study to prepare students for a variety of careers in public safety, ranging from police officers and security personnel to EMTs and fire fighters.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

Unless otherwise specified, salary data is sourced from the Bureau of Labor Statistics (www.bls.gov/) or Open Options, an online resource available through our Career Services office (www.schoolcraft.edu/cte). Earnings may vary based on experience, education and location.

AREAS OF STUDY

Correctional Science courses (COR)	135
Criminal Justice degree and degree with academy...105–106	
• CJ courses	135
Emergency Medical Technology Paramedic degree and certificate	70–71
• EMT courses	141
Fire Technology	
• Degree and degree with Academy.....	107–108
• Fire Fighter Technology certificate.....	108
• FIRE courses.....	144–145
Homeland Security degree	109
• HS courses	150–151

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CRIMINAL JUSTICE

Credentials

Criminal Justice AAS degree.....	62 cr.
Criminal Justice AAS degree with Academy.....	64 cr.

Major Description

If you have strong morals, self-discipline, and a commitment to public safety, one of Schoolcraft's two criminal justice associate in applied science degrees can help you prepare for quick advancement in the field. The first degree is geared toward working professionals looking to enhance their on-the-job training with specialized criminal justice courses and classwork in communications, computing, health, and human relations. This degree will help you develop the skills needed to investigate human behaviors and take the appropriate measures to ensure the safety of society.

The second degree is aimed at students aspiring to law enforcement careers and who want police academy experience, in addition to the academic credentials. After completing the academy, you will be eligible to take the Michigan Commission on Law Enforcement Standards (MCOLES) Certification Exam, which is a prerequisite for employment in this state.

Students pursuing a career as a law enforcement officer should review "Employment Standards for Michigan Law Enforcement Officers" at www.michigan.gov/mcoles prior to beginning this area of study, to ensure that they meet certain psychological and physical requirements.

- Expand your knowledge of the criminal justice system, including criminal law, police field operations, criminal investigation, and human relations.
- Gain an understanding of the sociological, psychological, biological, and environmental factors that inspire deviant or criminal behavior.

Job Titles & Median Salaries or Hourly Rates

- Detective or Criminal Investigator: \$42,870 (national)
- Police or Sheriff's Patrol Officer: \$55,224 (Michigan)

The criminal justice system is a complex system of thousands of federal, state, and local agencies interconnected by the individuals that work in this field. Employment at any level in criminal justice requires an understanding of the sociological, psychological, biological, and environmental factors that may influence deviant or criminal behavior. Employees of the criminal justice system use developed skills to investigate human behaviors and take the appropriate measures to ensure the safety of society. The criminal justice associate in applied science degree program objectives assists existing employees of the criminal justice system and prepares students for full employment in this field.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CJ 113	Introduction to Criminal Justice System	3
CJ 102	Organization and Administration of Law Enforcement Agencies	3
POLS 105	Survey of American Government.....	3
COMA 103	Fundamentals of Speech	3
ENG 101	English Composition 1.....	3

Total Credits 15

First Year—Winter Semester

HUM 106	Introduction to Art and Music	1
COR 110	Introduction to Corrections.....	3
CJ 104	Introduction to Security	3
PSYCH 153	Human Relations.....	3
English	Select 1	3
ENG 116	Technical Writing	
ENG 102	English Composition 2	
CJ 107	Police Field Operations	3

Total Credits 16

Criminal Justice AAS Degree

Second Year—Fall Semester

CJ 209	Basic Criminalistics.....	3
CJ 211	Criminal Law and Procedure.....	3
BIOL 103	Health Education.....	3
CIS 105*	Computer Orientation.....	1
MATH 101	Business Mathematics.....	3
Elective**	3

Total Credits 16

Second Year—Winter Semester

CJ 201	Criminal Investigation	3
CJ 212	Criminology.....	3
CJ 221	Juvenile Justice.....	3
SOC 201	Principles of Sociology.....	3
CIS 115	Introduction to Computer Based Systems.....	3

Total Credits 15

PROGRAM TOTAL 62 CREDITS

* CIS 105 may be waived if student has successfully completed a high school computer course or equivalent within the past five years.

** Any 100- or 200-level course not previously taken.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

For more information about certification please contact:
Michigan Commission on Law Enforcement Standards (MCOLES)
106 W. Allegan Street, Suite #600, Lansing, MI 48933
517-322-1417
www.michigan.gov/mcoles

Criminal Justice AAS Degree with Academy

In this program, the criminal justice courses are restricted to students who are officially admitted to this program.

The criminal justice system is a highly specialized field. Law enforcement officers are employed by 40,000 local police agencies nationwide as well as county sheriffs' departments. Law enforcement officers must be prepared to interact with the public in a position of responsibility and authority. Knowledge of the criminal justice system, including criminal law, police field operations, criminal investigation, and human relations enhances the professionalism of the criminal justice system.

Candidates for employment as law enforcement officers must be certified by the Michigan Commission on Law Enforcement Standards (MCOLES). After completing the Police Academy (CJ 287), students may become certifiable by passing the MCOLES Certification Exam. Certification is valid for one year. Pre-service students, who are not employed by a law enforcement agency, must complete 41 credit hours of course work for the associate degree before taking CJ 287.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Becoming a law enforcement officer requires candidates to meet certain psychological and physical requirements. Please review "Employment Standards for Michigan Law Enforcement Officers" available at www.michigan.gov/mcoles prior to beginning this area of study.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CJ 102	Organization and Administration of Law Enforcement Agencies	3
POLS 105	Survey of American Government.....	3
COMA 103	Fundamentals of Speech	3
ENG 101	English Composition 1	3
BIOL 103	Health Education.....	3

Total Credits 15

First Year—Winter Semester

COR 110	Introduction to Corrections.....	3
CJ 211	Criminal Law and Procedure.....	3
PSYCH 153	Human Relations.....	3
English	Select 1	3
ENG 116	Technical Writing	
ENG 102	English Composition 2	
CIS 105*	Computer Orientation.....	1

Total Credits 13

Second Year—Fall Semester

MATH 101	Business Mathematics.....	3
CJ 209	Basic Criminalistics.....	3
CJ 212	Criminology.....	3
CJ 221	Juvenile Justice.....	3
SOC 201	Principles of Sociology.....	3

Total Credits 15

Second Year—Winter Semester

CJ 287**	Police Academy.....	21
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Total Credits 21

PROGRAM TOTAL 64 CREDITS

* CIS 105 may be waived if student has successfully completed a high school computer course or equivalent within the past five years.

** CJ 287 requires a special admissions process. Contact the Public Safety Education office at 734-462-4747 for application requirements.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

FIRE TECHNOLOGY

Credentials

Fire Fighter Technology certificate.....	30 cr.
Fire Technology AAS degree.....	66 cr.
Fire Technology with Academy AAS degree.....	66 cr.

Major Description

Today's fire fighter assumes a wide range of responsibilities, from rescuing victims, fighting fires, and salvaging the contents of buildings to providing medical services at the scene of a traffic accident or other emergency. Schoolcraft College offers three ways to work your way into this field.

Our certificate program provides career training for fire protection technicians. It is designed for students who are currently employed by Michigan Fire Marshal recognized fire departments, volunteer in recognized fire districts, or currently seeking employment. The program works in cooperation with the Michigan Fire Fighters Training Council and can prepare you to take the state exam for certification as an entry-level fire fighter.

Our fire technology associate in applied science program is geared toward students wishing to attend part-time. A combination of lectures and hands-on activities can prepare you to respond in a variety of emergencies. Our fire technology with academy degree program contains the same courses, but is focused on students wishing to attend full-time.

- Participate in courses that utilize Schoolcraft's state-of-the-art Public Safety Training Complex. It includes a four-story burn tower that simulates a variety of fire fighting and rescue situations, including high-angle approaches.
- Credits may transfer toward a bachelor's degree at a four-year college or university.

Job Titles & Median Salaries or Hourly Rates

- Fire Fighter: \$45,250 (national)

Recognizing the need for more highly skilled fire fighters, many municipalities now require additional education for their employees. The curriculum developed for the associate in applied science degree program combines lecture with hands-on activities to prepare the student to respond to a variety of emergencies. Specialists in the field provide valuable input on both content and methodology.

The fire technology associate degree program is designed for students who wish to attend part time. All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Contact the Fire Technology office at 734-462-4745 for additional information.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

FIRE 112	Fire Fighter 1—Basic Fire Suppression.....	10
ENG 100	Communication Skills.....	3
MATH 101	Business Mathematics.....	3

Total Credits 16

First Year—Winter Semester

FIRE 119	Fire Fighter 2—Advanced Fire Suppression....	10
BIOL 101	General Biology	4
PE 202	Lifestyle Fitness—Wellness	2

Total Credits 16

First Year—Spring/Summer Session

FIRE 125	Building Construction for the Fire Service.....	3
HUM 106	Introduction to Art and Music	1

Total Credits 4

Fire Technology AAS Degree

Second Year—Fall Semester

ENG 116	Technical Writing	3
EMT 115	Emergency Medical Technology—Basic	10
FIRE 130	Fire Fighting—Tactics and Strategy.....	3

Total Credits 16

Second Year—Winter Semester

FIRE 128	Fire Fighting—Hydraulics and Water Supply ...	4
PSYCH 153	Human Relations.....	3
FIRE 200	Fire and Arson Investigation	4
Elective	Select from the list below	3

Total Credits 14

PROGRAM TOTAL 66 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

FIRE 135	Fire Protection Systems.....	3
FIRE 205	Fire Department Organization and Administration	3
FIRE 207	Fire Company Officer	3
BIOL 236	Human Anatomy and Physiology.....	5

The Fire Technology Fire Fighter 1, 2 and fire academy programs are certified by the Michigan Office of Fire Fighter Training. For more information regarding certification please contact:

Bureau of Fire Services/OFFT
PO Box 30700
Lansing, MI 48909
616-447-2689
www.michigan.gov

The fire technology associate degree with academy is designed for students who wish to attend full time.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Contact the Fire Technology office at 734-462-4745 for additional information.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

FIRE 124	Fire Academy.....	20
Total Credits 20		

First Year—Winter Semester

ENG 100	Communication Skills.....	3
MATH 101	Business Mathematics.....	3
FIRE 200	Fire and Arson Investigation	4
BIOL 101	General Biology	4
Total Credits 14		

Fire Technology AAS Degree with Academy

First Year—Spring/Summer Session

FIRE 125	Building Construction for the Fire Service.....	3
HUM 106	Introduction to Art and Music	1
Total Credits 4		

Second Year—Fall Semester

ENG 116	Technical Writing.....	3
EMT 115	Emergency Medical Technology—Basic	10
FIRE 130	Fire Fighting—Tactics and Strategy.....	3
Total Credits 16		

Second Year—Winter Semester

FIRE 128	Fire Fighting—Hydraulics and Water Supply ...	4
PSYCH 153	Human Relations.....	3
PE 202	Lifestyle Fitness—Wellness	2
Elective	Select from the list below	3
Total Credits 12		

PROGRAM 66 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

FIRE 135	Fire Protection Systems.....	3
FIRE 205	Fire Department Organization and Administration	3
FIRE 207	Fire Company Officer	3
BIOL 236	Human Anatomy and Physiology.....	5

The Fire Technology Fire Fighter 1, 2 and fire academy programs are certified by the Michigan Office of Fire Fighter Training. For more information regarding certification please contact:

Bureau of Fire Services/OFFT
PO Box 30700
Lansing, MI 48909
616-447-2689
www.michigan.gov

Fire Fighter Technology Certificate

The fire fighter technology program provides career training for fire protection technicians. The program is offered in cooperation with the Michigan Fire Fighters Training Council and focuses on meeting the needs of fire service personnel. It is designed for students who are currently employed by Michigan Fire Marshal/recognized fire departments, currently seeking employment, and/or volunteer in recognized fire districts. All courses meet the state-mandated requirements for preparing students to take the state exam for certification as entry-level fire fighters.

Fire Fighter 1, 2, and/or Academy courses require students to attain an average of 70 percent or better on test scores and to score at least 70 percent on their final exam to receive a passing grade of 2.0. The Emergency Medical Technology—Basic course requires an average of 80 percent on tests and an 80 percent on the final for a grade of 2.7. Students achieving an 80 percent or higher in Emergency Medical Technology—Basic course will receive a certificate of completion and be eligible to test for State licensure. Practical skills in both areas must be passed at stated proficiency levels to successfully complete each course and be recommended for the state certification exams.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

Contact the Fire Technology office at 734-462-4745 for additional information.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

FIRE 112	Fire Fighter 1—Basic Fire Suppression.....	10
Total Credits 10		

First Year—Winter Semester

FIRE 119	Fire Fighter 2—Advanced Fire Suppression....	10
Total Credits 10		

First Year—Spring Session

EMT 115	Emergency Medical Technology—Basic	10
Total Credits 10		

PROGRAM TOTAL 30 CREDITS

(ALTERNATE) First Year—Fall Semester

FIRE 124	Fire Academy.....	20
Total Credits 10		

First Year—Winter Semester

EMT 115	Emergency Medical Technology—Basic	10
Total Credits 10		

The Fire Technology Fire Fighter 1, 2 and fire academy programs are certified by the Michigan Office of Fire Fighter Training. For more information regarding certification please contact:

Bureau of Fire Services/OFFT
PO Box 30700
Lansing, MI 48909
616-447-2689
www.michigan.gov

HOMELAND SECURITY

Credentials

Homeland Security AAS degree62 cr.

Major Description

Homeland security personnel are a critical part of our society. They help secure U.S. borders, airports, seaports and waterways; research and develop the latest security technologies; respond to natural disasters or terrorist assaults; and analyze intelligence reports to prevent, detect, and deter threats to the homeland. Our homeland security associate in applied science degree program can provide you with a foundation of private and homeland security knowledge and prepare you for transfer to a four-year institution with classes in criminal justice, communications, and emergency management.

- Prepare to join over 180,000 individuals employed by the United States Department of Homeland Security, or the 1.5 million security personnel employed by the private security industry.
- Credits may transfer toward a bachelor's degree at a four-year college or university.

Job Titles & Median Salaries or Hourly Rates

- Customs Officer: \$55,224 (Michigan)
- Protective Service Worker: \$55,224 (Michigan)
- Senior Security Guard: \$37,070 (national)
- Security Coordinator: \$73,528 (Michigan)

After 9/11 the security industry has expanded rapidly. The United States Department of Homeland Security employs more than 180,000 individuals. Coupled with that, the private security industry employs nearly 1.5 million security personnel. The homeland security degree program is focused on providing students with a foundation of private and homeland security knowledge to build upon as a transfer to a specialty degree. The objectives of the homeland security associate degree program are to upgrade personnel employed in the security industry and to prepare students for full-time employment in this field.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

Contact the Public Safety Education office at 734-462-4747 for more information.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CJ 102	Organization and Administration of Law Enforcement Agencies	3
HS 101	Introduction to Homeland Security.....	3
English	Select 1	3
ENG 100	Communication Skills	
ENG 101	English Composition 1	
POLS 105	Survey of American Government.....	3
PSYCH 153	Human Relations.....	3

Total Credits 15

First Year—Winter Semester

MATH 101	Business Mathematics.....	3
English	Select 1	3
ENG 116	Technical Writing	
ENG 102	English Composition 2	
CJ 104	Introduction to Security	3
CJ 113	Introduction to Criminal Justice System	3
HS 102	Understanding Terrorism	3

Total Credits 15

Homeland Security AAS Degree

Second Year—Fall Semester

BIOL 103	Health Education.....	3
CJ 201	Criminal Investigation	3
HS 103	Transportation and Border Security	3
HS 202	Introduction to Emergency Management	3
SOC 201	Principles of Sociology.....	3

Total Credits 15

Second Year—Winter Semester

CIS 115	Introduction to Computer Based Systems.....	3
CJ 211	Criminal Law and Procedures.....	3
HS 201	Organizational and Facility Security	3
HS 203	Intelligence Analysis and Security Management	3
Humanities	Select any General Education Humanities course.....	4
	<i>Any 100 or 200 Foreign Language course (recommended)</i>	

Total Credits 16

PROGRAM TOTAL 62 CREDITS

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

SOCIAL SCIENCES

The social sciences are all about understanding society and the way that humans interact with one another. Taking courses in the social sciences can give you a solid foundation for a wide variety of careers such as social work, business management, forensics, law, psychology, and education. At Schoolcraft, we give you the opportunity to apply classroom learning through student clubs and activities, service learning, internships, and class projects.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

AREAS OF STUDY

- Anthropology courses (ANTH) 111, 116
- Political Science courses (POLS) 111, 169–170
- Psychology courses (PSYCH) 111, 170
- Sociology courses (SOC) 111, 171

CONTACT US

FACULTY

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DEAN

Cheryl D. Hawkins
Dean of Liberal Arts and Sciences
734-462-4400 ext. 5336 | chawkins@schoolcraft.edu



SOCIAL SCIENCES

Courses are offered in a number of subject areas for which there is not a certificate or degree program available. However, many of these courses can be applied toward a Schoolcraft certificate or degree in another area of study. These courses can be taken for personal or professional interest, or for transfer to a four-year college or university. Explore your options and expand your horizons.

ANTHROPOLOGY

Are you eager to reach beyond your own customs and values to examine those of other cultures? Anthropology courses give you the opportunity to study humankind around the planet and throughout the ages. We offer courses in archaeology, world religions, Native American traditions, linguistics, cultural diversity, prehistoric cultures, and more. Unearth an exciting career as a crime scene investigator, teacher, museum curator, or archaeologist.

- Participate in labwork that includes working directly with skeletal material, fossil casts, and stone tool replicas.
- Get involved with campus events like the Multicultural Fair and Global Roundtables.

POLITICAL SCIENCE

If you want to change the complex world in which we live, a career in political science should get your vote. Schoolcraft College can introduce you to the fundamentals of American government on the local, state, and federal levels, comparative government, political parties, and international relations. Prepare yourself for a career in office, or join the ranks of political science majors who have gone on to work as community organizers, attorneys, professors, non-profit leaders, corporate managers, and pollsters.

- The Honors Political Science course offers firsthand experience with political projects.
- Explore current political events as an important component of your coursework.

PSYCHOLOGY

Why do people act like they act and think like they think? Psychology offers insight into the fascinating arena of human behavior. Psychologists apply this insight to their work in fields as diverse as education, nursing, medicine, law, business, and communications.

- Schoolcraft offers courses in human relations, general psychology, child psychology, psychology of aging, and the psychology of adjusting to the personal and social environment.
- Students have the opportunity to get involved in on-campus events and activities focused on raising awareness of mental health issues and promoting awareness of mental health resources and services.

SOCIOLOGY

Sociology is all about understanding and helping people and communities. It touches base with economic, social, political, and religious customs, as well as the problems of racism, sexism, and crime that trouble our society. Schoolcraft offers courses in the principles of sociology, social problems, marriage and family, cultural diversity, urban sociology, and the individual that will give you insight to what rules govern our behavior in groups. Prepare yourself for a career in social work, criminal justice, business, child welfare, international relations, healthcare, or gerontology.

- Go on tours of historic Detroit that bring classroom theories to life.
- Get involved with campus events and organizations as part of your coursework, or engage in service-learning and social work job shadowing.



LEARNING SUPPORT

You need a specific set of skills to succeed in a college class. Learning support courses teach those skills, giving students the tools they need to succeed at the next level.

Learning support courses are one way that Schoolcraft opens the door to a college education. First we assess your readiness for college-level work. Then we use that assessment to direct you to the courses that are most likely to improve your ability to succeed. In some cases this means directing the student to a Learning Support course. In other cases it means directing students to a Foundation course.

Either way, the focus is on meeting you where you are and helping you take that next step toward where you want to be.

All courses are not offered each semester. Please work with an academic advisor or counselor to develop a schedule that will work for you.

COLLEGE AND BEYOND

A CAB course is required for most new students.

- Teaches students college terminology and keys to success in the college classroom.
- Helps students discover their personal learning style.
- Teaches techniques for time management, effective studying, and critical thinking.
- CAB courses award college credit.

HUMAN DEVELOPMENT SERVICES

The HDS 110 course focuses on career decision making.

- Students use self-assessment instruments to explore their interests and occupational choices.
- Students gain personal awareness, career awareness and information on how to create a career plan.
- This course awards college credit.

AREAS OF STUDY

- College and Beyond courses (CAB) 126
- Collegiate Skills courses (COLLS) 126–127
- Human Development Services course (HDS) 151
- Learning Resources course (LR) 153

CONTACT US

DEAN

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Deborah B. Daiek

Associate Dean of Learning Support Services

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COLLEGIATE SKILLS

These courses help students develop college-level reading, vocabulary, and learning skills.

- Critical reading, reading comprehension, critical thinking, and learning techniques are emphasized.
- Offerings include an English as a Second Language course.
- Electronic portfolio course enables students to create a digital portfolio that captures their skills and knowledge.
- The applied learning theory for nursing majors course prepares nursing students for the Test of Essential Academic Skills (TEAS) exam.
- COLLS courses with a course number under 100 do not award college credit; COLLS courses numbered 100 and higher do award college credit.

LEARNING RESOURCES

The LR 135 course focuses on digital literacy.

- Students learn how to locate and critically evaluate digital information necessary for the completion of academic assignments.
- This course awards college credit.

Courses

Course Formats

Schoolcraft College provides students a variety of choices for earning credit. In addition to traditional in-class instruction, students can register for online courses, Open Entry/Open Exit courses or hybrid courses. Independent learning is another option. Most courses are offered in a seven-, twelve- or 15-week format with some courses starting later in a semester.

Online Courses

734-462-4532 | dl@schoolcraft.edu | www.schoolcraft.edu/dl

Students can take an online course when and where it is convenient for them and still have opportunities to interact with an instructor and other students. Online learning may be appropriate for students who are independent learners, highly self-motivated and interested in accelerating their course of study. Since the coursework can be completed any time of the day or night, it is ideal for those who are unable to attend on-campus classes. These classes expand learning opportunities while allowing students to balance educational demands with work and family. Students are expected to keep up with weekly assignments and participate in online discussions.

Online courses are offered through the Internet; some may require a proctored exam. Refer to www.schoolcraft.edu/sysreq for system hardware and software requirements.

Earn your entire associate degree online or select from an array of individual online courses in numerous academic disciplines.

Hybrid Courses

734-462-4525 | hybrid@schoolcraft.edu | www.schoolcraft.edu/hybrid

Hybrid courses combine some in-class instruction with flexible online learning. Students attend classes on campus for presentations, laboratory work and discussions, while reading assignments, research, and some projects are completed online. Students benefit from the flexibility of online delivery along with the personal interactions of a classroom setting.

On-campus classroom sessions for each semester are found at www.schoolcraft.edu/hybrid. Refer to www.schoolcraft.edu/sysreq for hardware and software requirements.

Open Entry/Open Exit Courses

734-462-4588 | oeoe@schoolcraft.edu | www.schoolcraft.edu/oeoe

Open Entry/Open Exit (OE/OE) courses provide an alternative to traditional classroom learning. OE/OE students have greater control over their learning schedules and can complete a course in several weeks, a month or a semester. Students do not attend regular classes or lectures. Students can complete these self-paced courses at home, in the college's computer labs, or in the OE/OE lab where instructors are available for help during posted hours. OE/OE learning may be appropriate for students who are independent learners, highly self-motivated and interested in accelerating their course of study.

All students registering for the OE/OE program must attend a mandatory on-campus orientation with their instructor before beginning coursework. During orientation students will be provided information regarding course requirements, important dates, and how coursework is to be submitted. Orientation information for each semester can be found online.

Students may register for OE/OE classes up to the seventh week of the fall and winter semesters. Spring and Summer courses are offered in a seven- or twelve-week format. All coursework must be completed by semester's end.

OE/OE courses are offered through the Internet; however, at least one on-campus assessment is required. Refer to www.schoolcraft.edu/sysreq for system hardware and software requirements.

Independent Learning

Schoolcraft College provides students an opportunity to earn credit for certain courses through independent study. Students are expected to master the competencies the course requires. Students work independently under the direction of the assigned faculty member and are expected to meet with the faculty member at designated times during the semester. Contact the appropriate instructional administrator for more information. Students must obtain approval from an instructor and administrator to take an independent learning course.

Foundation Courses

Some students need to build up their academic skills in order to be ready for college-level courses. Schoolcraft serves these students by offering foundation courses.

- For new students, courses are recommended to them by their academic advisor or counselor based on the student's ACT score or, if a recent ACT score is not available, the student's score on a placement test administered by the college.
- The ACT or placement test score might prompt the counselor to recommend one or more foundation courses to the student.
- Foundation courses can be identified by their course number, which is always less than 100 (BIOL 050 Basic Biology, ENG 050 Modern English Grammar, PHYS 051 Basic Physics, etc.).
- This numbering distinguishes foundation courses from freshman courses numbered in the 100s and sophomore courses numbered in the 200s.
- The purpose of a foundation course is to get the student ready to succeed in 100- and 200-level courses. By completing 100- and 200-level courses, students can make progress toward earning a degree or certificate, transferring to another college, or achieving some other educational goal.

Course offerings are subject to change. See www.schoolcraft.edu for updates.

Courses are numbered as follows:

1. Courses numbered from 001 to 099 are considered pre-college, may not be transferable and do not apply toward an associate degree.
2. Courses numbered from 100 to 199 are primarily freshman-level courses.
3. Courses numbered 200 to 299 are primarily sophomore-level courses.
4. Final exams are required in all credit courses.
5. Many courses have a prerequisite skill or lower level course necessary to complete before attempting more complex material. For maximum success, complete prerequisites before taking the actual course.
6. Some courses also list a corequisite course that should be taken in the same semester.

KEY TO READING COURSE DESCRIPTIONS SAMPLE COURSE LISTING:

Department → *Course Name* → *Lecture Hours/Week* → *Lab Hours/Week* → *Credit Hours*
MAS 122 **Massage Techniques 2 (2-4) 4 Cr. Hrs.** ← *Credit Hours*
Course required before taking this class → *Prerequisite:* MAS 112, MAS 113, MAS 114 and MAS 115.
Course Description → *MAS 123, MAS 124 and MAS 125.* ← *Course to be taken in the same semester*

In this course, students will learn to provide a smooth and flowing full body therapeutic massage. Adaptations and modifications of massage for diverse client populations will be examined and practiced. Specialty techniques such as myofascial release and reflexology will be used to build upon the primary massage strokes taught in the foundational course.

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ACCOUNTING

ACCT 103 Introduction to Accounting (4-0) 4 Cr. Hrs.

Prerequisite: None.

In this course you will learn about the basic accounting cycle for a sole proprietorship in the service or merchandising industry. You will account for cash, sales, purchases, payroll and payroll taxes.

ACCT 138 Income Tax Preparation (2-0) 2 Cr. Hrs.

Prerequisite: None.

This is an introductory course in Federal and Michigan individual income tax laws and return preparation. Special emphasis will be given to Federal Tax Form 1040 with accompanying Schedule A (itemized deductions). In addition, the course will include preparation of Michigan Tax Form MI-1040 and City of Detroit returns.

ACCT 139 Michigan Taxes (2-0) 2 Cr. Hrs.

Prerequisite: None.

This is an introductory course in Michigan personal and business taxes. In addition, the individual income taxes of several Michigan cities will be covered. The course provides both non-accounting and accounting majors with knowledge of the Michigan tax structure. Special emphasis will be on regulations and tax requirements for income taxes, sales and use taxes, unemployment taxes, business tax and real and personal property taxes. Students will prepare tax returns while reviewing tax planning strategies.

ACCT 201 Principles of Accounting 1 (4-0) 4 Cr. Hrs.

Prerequisite: None.

In this course, you will learn the principles of accounting with emphasis on the accounting cycle for a sole proprietorship in the service and merchandising business. You will apply internal controls to an accounting system, account for cash, accounts receivable, bad debts, inventories, long lived assets, current liabilities and payroll. In addition, you will demonstrate how to account for partnerships. This course will integrate a Web-based learning system which requires the use of a computer to complete some of the learning activities and assessments. This course MAY also include the use of Excel.

ACCT 202 Principles of Accounting 2 (4-0) 4 Cr. Hrs.

Prerequisite: ACCT 201.

This course is a continuation of Accounting 201 expanding your exposure to accounting principles, financial statements, methods and applications. In this course you will focus on accounting for corporations, stockholder's equity, liabilities and investments. You will prepare the statement of cash flows. You will analyze and interpret financial statements and other accounting information used in making decisions. You will also explore managerial accounting and its applications in planning and controlling costs. This course will integrate a Web-based learning system which requires the use of a computer to complete some of the learning activities and assessments. This course MAY also include the use of Excel.

ACCT 221 Intermediate Accounting 1 (4-0) 4 Cr. Hrs.

Prerequisite: ACCT 202.

This course further explores these accounting principles used by publicly traded companies, including the methods used to measure and report the financial transactions of corporations. The course focuses on the valuation of assets, such as cash and receivables, investments, inventory and operational assets, but will also include preparation of financial statements, review of financial disclosures and measurement of income and time value of money concepts.

ACCT 222 Intermediate Accounting 2 (4-0) 4 Cr. Hrs.

Prerequisite: ACCT 202 required.

In this course you will learn the current accounting methods for liabilities, bond amortization, leases, pensions, income taxes, shareholders' equity and stock based compensation. You will prepare the statement of cash flows and statement of shareholders' equity. In addition, you will learn to allocate income tax expense and compute earnings per share information.

ACCT 226 Cost Accounting (4-0) 4 Cr. Hrs.

Prerequisite: ACCT 202 and CIS 180. ACCT 260 recommended.

Concepts of cost accounting as a management tool for control and planning will be introduced. Actual and standard cost methods as applied to job and process cost systems; accounting for materials, labor and manufacturing overhead; direct costing method; and cost accounting projects will be covered.

ACCT 238 Federal Tax Accounting (4-0) 4 Cr. Hrs.

Prerequisite: ACCT 201 recommended by accounting faculty.

Federal income tax laws with emphasis on the regulations that relate to individuals and small business including state and local tax implications will be addressed. Preparation of tax forms and introduction to tax research are also addressed in this course.

ACCT 260 Computerized Accounting Using Peachtree (3-0) 3 Cr. Hrs.

Prerequisite: ACCT 201.

In this course you will gain hands on experience in setting up an accounting information system for a service, merchandising and manufacturing business using Peachtree software. This course will apply the financial accounting concepts learned in your previous courses using Peachtree software. Using the software you will create vendor, customer and employee accounts, record transactions in special purpose journals and the general ledger, create invoices, process payroll, create and print reports and perform bank reconciliations.

ACCT 262 Payroll Accounting (3-0) 3 Cr. Hrs.

Prerequisite: ACCT 201 and CIS 120 or knowledge of Excel and Word.

In this course you will gain first-hand experience in calculating payroll, completing payroll taxes, and preparing payroll records and reports. You will cover the various phases of the Social Security Taxes, Federal Income Taxes, State Income Taxes and Unemployment Compensation Insurance. You will complete a manual and computerized payroll simulation.

ACCT 263 Computerized Accounting Using QuickBooks (3-0) 3 Cr. Hrs.*Prerequisite:* ACCT 103 or ACCT 201 and CIS 120.

The student will complete a comprehensive computerized software package for a small business company. This package shall include setting up a company, entering transactions which include accounts receivables, sales accounts payable, purchases, cash receipts and cash disbursements. The student will prepare bank reconciliations and financial statements. The student will generate payroll entries and print payroll tax returns and payroll reports. Outside lab time is required.

ALLIED HEALTH EDUCATION

AHE 101 Introduction to Healthcare (1-0) 1 Cr. Hr.*Prerequisite:* None.

This course provides a comprehensive review of the healthcare industry. Trends and changes related to healthcare facilities such as acute care hospitals, specialty hospitals, nursing homes, health maintenance organizations, hospice and home healthcare will be covered. The course will also deal with the impact and use of computers in the delivery and documentation of healthcare and the role of the medical professional in response to the healthcare delivery system.

ANTHROPOLOGY

ANTH 112 Introduction to Anthropology (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course provides an introduction to the origin and diversity of humans, which includes the evolution of humans and their cultures, contemporary cultural diversity, linguistics and applied anthropology. Biological and cultural adaptations are emphasized.

ANTH 117 Introduction to Archaeology (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is a general survey of archaeology and includes an overview of the history of the field and the basic theories and methods employed in the study of archaeological cultures. Cultures from around the world are used as examples.

ANTH 201 Cultural Anthropology (3-0) 3 Cr. Hrs.*Prerequisite:* None.

A comparison of the ways of life for societies worldwide using anthropological theory and methods is provided in this course. Basic institutions of human society such as kinship, religion, law, politics and economics are examined to provide a better understanding of the diversity of contemporary societies. Course focuses on non-Western societies.

ANTH 211 Myth, Magic, World Religions (3-0) 3 Cr. Hrs.*Prerequisite:* ANTH 112 or ANTH 201 recommended.

This course will take an anthropological perspective to the study of religions which will include indigenous religions and religions that originated in Asia, India and the Middle East. The role of contemporary religious movements in a rapidly changing world will be examined.

ANTH 214 Native American Traditions (3-0) 3 Cr. Hrs.*Prerequisite:* ANTH 112 or ANTH 201 recommended.

This course provides a survey of Native American cultures from both Native and non-Native perspectives. Social, economic, religious and artistic traditions will be examined. Course content includes a review of prehistoric origins as well as an evaluation of the effects of centuries of contact with people from Europe, Africa and Asia.

ARABIC

ARB 101 Elementary Arabic 1 (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This course is intended for students who have no previous education in Arabic. The course will cover basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through activities, emphasis will be placed on oral proficiency and communication. An appreciation of the cultures of the Middle East will be an integral part of the course.

ARB 102 Elementary Arabic 2 (4-0) 4 Cr. Hrs.*Prerequisite:* ARB 101 with a grade of 2.0 or better or one year of high school Arabic or consent of instructor.

This course is a continuation of ARB 101 and continues to review the basic Arabic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the cultures of the Middle East will be an integral part of the course.

ARB 201 Intermediate Arabic 1 (4-0) 4 Cr. Hrs.*Prerequisite:* ARB 102 with a grade of 2.0 or better or two years of high school Arabic or consent of instructor.

This course is a continuation of ARB 102 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the cultures of the Middle East will be an integral part of the course.

ARB 202 Intermediate Arabic 2 (4-0) 4 Cr. Hrs.*Prerequisite:* ARB 201 with a grade of 2.0 or better or three years of high school Arabic or consent of instructor.

This course is a continuation of ARB 202 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the cultures of the Middle East will be an integral part of the course.

ART AND DESIGN

ART 105 Basic Drawing (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This studio course provides training in recording observed spatial and value relationships. Basic approaches to drawing and media are introduced.

- ART 106 Basic Design 1 (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides an introduction to the elements and principles of design. Students are assigned projects in various media which reinforce the effective application of design principles.
- ART 109 Three Dimensional Design (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides an introduction to the elements and principles of design as applied to the construction of three-dimensional form. Students are assigned projects using a variety of materials including, but not limited to wood, clay and found objects. These projects are intended to stimulate and inspire effective application of the design principles to three-dimensional art works.
- ART 110 Illustration (3-0) 3 Cr. Hrs.**
Prerequisite: ART 105 or approval from instructor.
 Illustration is an art form intended to be used in various publications such as textbooks, books, magazines and for product advertisements. This course introduces the student to a variety of art techniques and applications used by professional illustrators to create art that tells a story or expresses an idea. The exploration of media, subject matter and development of a concept will be the focus of each assignment. The student will learn the step by step processes, demands and deadlines expected of a professional illustrator.
- ART 113 Art Education (3-0) 3 Cr. Hrs.**
Prerequisite: PSYCH 249 recommended.
 This course is a study of child growth and development through creativity. Students will study techniques and materials appropriate for use at various elementary grade levels. Emphasis will be placed on methods to stimulate children's creative interests.
- ART 115 Art History 1 (4-0) 4 Cr. Hrs.**
Prerequisite: None.
 This art history course examines the development of western art from pre-history through the 14th century with emphasis on various societies, artists and art forms including painting, sculpture and architecture.
- ART 116 Art History 2 (4-0) 4 Cr. Hrs.**
Prerequisite: None.
 This art history course examines the development of western art from the early Renaissance through contemporary art with emphasis on various societies, artists and art forms including painting, sculpture and architecture.
- ART 118 Ceramics 1 (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 Fundamentals of ceramics; study of materials and basic techniques in shaping, decorating and firing will be covered in this course.
- ART 119 Ceramics 2 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 118.
 This course is a continuation of ART 118. Emphasis on good ceramic form; work with various types of ceramic materials; advanced techniques in shaping, decorating and firing will be covered.
- ART 125 Life Drawing 1 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 105 or consent of instructor.
 The major emphasis of this course is direct observation and expression of the human form using traditional media. Design and value relationships are studied, as are the superficial muscular and skeletal systems which affect surface form. Sessions on portraiture using an anatomical approach are included. Basic drawing concepts are reinforced through exploration of classic technique.
- ART 126 Basic Design 2 (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is a continuation of ART 106 with emphasis on further development of concepts and refinement of skills. In addition to strengthening their own visual communication skills, students also learn to evaluate work of other artists and designers in terms of design cohesiveness.
- ART 201 Art Appreciation (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides an introduction to the vast subject of visual art, including the effect of culture and history on the lives, aesthetics and creations of artists, and an exploration of technique and media employed by artists throughout time.
- ART 205 Life Drawing 2 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 125 or consent of instructor.
 This course is a continuation of ART 125 with emphasis on further development of concepts and refinement of skills. Students will refine their aesthetic, expressive approach to the human figure while focusing on limited media.
- ART 211 Watercolor Painting 1 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 105 recommended or consent of instructor.
 Introduction to color composition as it relates to still life and landscape painting will be covered in this course. Students will practice the use of dry-brush and wet-wash techniques.
- ART 212 Watercolor Painting 2 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 211.
 This course is a continuation of ART 211 providing for further investigation of water-based media, techniques, and processes. Studio experiences with emphasis on individual experimentation and visual imagery will be part of this course.
- ART 216 Women in Art (4-0) 4 Cr. Hrs.**
Prerequisite: None.
 This course explores the role of women in the history of Western art with emphasis on art forms including painting, sculpture and architecture. Special consideration is given to women as patrons, artists and subjects and their impact in each of these realms.
- ART 218 Ceramics 3 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 119.
 An intermediate investigation of the art-making process using techniques specific to ceramics will be covered in this course.
- ART 219 Ceramics 4 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 218.
 An intermediate investigation of the art-making process using techniques specific to ceramics will be covered in this course.

- ART 236 Painting 1 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 105 required and ART 125 recommended.
 This course introduces the student to fundamental painting techniques and processes through abstract, conceptual and representational imagery. Sessions on portraiture are included.
- ART 239 Painting 2 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 236.
 This course is a continuation of Painting 1, providing for further investigation of the painting media and processes. Students will work toward developing a focused approach both thematically and technically. Individual experimentation will be emphasized.
- ART 243 Sculpture 1 (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course focuses on the development of skills through exploratory experiences in sculptural media and techniques leading to the understanding of sculptural form and conception.
- ART 244 Sculpture 2 (3-0) 3 Cr. Hrs.**
Prerequisite: ART 243.
 This course is a continuation of ART 243 providing for further exploration and application of sculptural media and techniques leading to the understanding of sculptural form and conception.
- ART 248 Portfolio Preparation (1-0) 1 Cr. Hr.**
Prerequisite: ART 105, ART 106 and one of the following: ART 118, ART 125, ART 211, ART 236 or ART 243 or consent of instructor.
 This class enables the student to prepare a portfolio tailored to the specific entrance requirements of art schools and Bachelor of Fine Art Programs offered at four-year colleges or universities. Strengths and weaknesses of existing student work will be addressed along with suggestions for possible further study to improve the content of the portfolio.

AVIATION MANAGEMENT

- AVM 101 Perspectives in Aviation (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides the student with an overview of the courses taught in the aviation management program. Overview topics include the development of aviation, fundamentals of flight, basic navigation, meteorology, airport planning and management, corporate and maintenance, the basic elements of airport infrastructure, airspace and navigation, aircraft operators, types and manufacturers. Students will learn about the evolution of domestic and international regulatory structure and specifically about the dimensions of U.S. federal regulations designed to ensure aviation safety. An overview of various aviation businesses with focus on career opportunities will also be provided.
- AVM 102 Aviation History (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is structured to give the student a well-rounded review of the significant events, people, places and technologies in aviation as it progressed through history to the present day. The course will begin with a brief review of very early flight and then focus primarily on aviation advancements through the 20th century. Students will examine how the airline environment and general aviation are expected to change in the near future.
- AVM 103 Aviation Meteorology (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is designed to help the student of aviation understand fundamentals of weather that are so important to aviation operations. It includes how weather is observed and the sources of weather information available. It serves as a valuable reference source for pilots at all levels of experience. Whether the connection to flying is as a new student to aviation, a certificated pilot, controller, dispatcher, scientist, engineer or an interested passenger, this course will help students understand the strong interdependence of aviation and meteorology.
- AVM 104 Aviation Legislation (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides an opportunity to study the evolution of federal civil aviation regulations in the United States and will touch briefly on the international perspective. Students will learn the basic Federal Aviation Administration (FAA) requirements, regulations and certifications associated with the dimensions of aviation from the perspective of aircraft design, manufacturing, maintenance, the pilot, the aircraft owner, and the various types of flight operations (airlines, freight operators, executive flight, private pilot flight) and airports. Students will obtain an overview of the detailed requirements and an understanding of how the Federal Aviation Administration (FAA) is organized and operates to interface all aspects of aviation. The course will also cover the requirements of Homeland Security affecting aviation.
- AVM 105 Private Pilot Ground School (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course will prepare students for the FAA Private Pilot written exam in addition to providing the key elements needed to begin flight training. Students will obtain a working knowledge of aerodynamics, radio communications, flight controls, aircraft systems, weight and balance and flight planning. Students will also become familiar with applicable Federal Aviation Regulations (FARs) and National Weather Service products such as forecasts and pre-flight weather briefings and be able to recognize weather systems. Students will have the chance to plan a cross-country flight utilizing navigational skills, weather information, communication procedures, aircraft performance and aeronautical decision making. The FAA areas of emphasis will be discussed throughout the semester.

AVM 201 Aviation Law (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course covers legal principles governing the aviation industry. Students will gain an understanding of historical precedents, regulatory agencies and statutes, standards, contracts for aircraft leasing and purchase, liability and insurance, Federal Aviation Administration (FAA) enforcement and airline labor laws. Students will become familiar with sources of power available to federal, state and local governments to deal with the problems created by airport development and operation.

AVM 202 Aviation Maintenance Management (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course focuses on the organization, processes and operation of an aviation maintenance business. Students will learn about the types of maintenance businesses including airline maintenance, Maintenance Repair Overhaul (MRO) businesses, Original Equipment Manufacturer (OEM) maintenance, Fixed Base Operation (FBO) and airframe manufacturer maintenance. The course will include an overview of aircraft systems and basic maintenance requirements. Federal Aviation Administration (FAA) regulations and processes to ensure safety, quality and reliability associated with maintenance and repair will be covered. The perspective of the aircraft owner will also be discussed.

AVM 203 Airport Planning and Management (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is an introduction to airport facilities, airport operations, the business processes involved in managing an airport and the development and maintenance of an airport master plan. The main focus will be on the typical large general aviation airport, but relevant differences will be explored for all airport sizes. The planning process will focus on the Federal Aviation Administration (FAA) advisory circular for airport planning. The course will also explore the relationship between the airport and the community, legislation affecting airports and planning, airport financing and development/management of services. Emphasis will be on management functions, organizational aspects, administration, security and public safety.

AVM 204 Corporate Aviation Management (3-0) 3 Cr. Hrs.*Prerequisite:* None.

The course provides an overview of the management and operation of an executive aviation business or corporate flight department for on-demand air travel. Students will be introduced to topics that include the value of using on-demand air travel, business organization, government regulation, aircraft and equipment evaluation, maintenance, flight operations, administration and fiscal considerations.

BIOLOGY**BIOL 050 Basic Biology (4-0) 4 Cr. Hrs.***Prerequisite:* None.

This course is offered to students who seek to acquire the necessary background and skills to successfully complete a college-level biology course such as General Biology (BIOL 101). Emphasis is placed on basic terminology and concepts that contribute to an understanding of the scientific process and biological principles such as the scientific method, basic chemistry, cell biology, metabolism, genetics, evolution, biological classification and ecology.

BIOL 100 Introduction to Biology (4-3) 4 Cr. Hrs.*Prerequisite:* None.

This course introduces the non-science major to the concepts of modern biology and to the principles of scientific inquiry. Major concepts such as the scientific method, biological chemistry, organization of cells, energy transformation in living systems, DNA and inheritance, evolution, the diversity of life and ecology are examined. Emphasis is placed on processes common to all organisms, with special reference to humans. Related topics such as human evolution and human impacts on the environment will also be explored. This course provides the framework for making informed decisions regarding pertinent biological issues in society. Students participate in four hours of instruction and three hours of laboratory each week. Students going into allied health fields or majoring in science are required to take BIOL 101 or BIOL 120.

BIOL 101 General Biology (4-3) 4 Cr. Hrs.*Prerequisite:* BIOL 050 or successful completion (2.0+) of introductory high school biology within the last five years.

This course is a one-semester introductory course. This course introduces students to the scientific study of living organisms. Students will investigate biological concepts including the chemical basis of life, cell structure and function, metabolism, reproduction, genetics, evolution, biological diversity and classification, plant structure and function, animal structure and function and ecology. Students attend four hours of lecture and three hours of laboratory each week. Science majors seeking to fulfill a two-semester introductory biology sequence should enroll in BIOL 120 and BIOL 130.

BIOL 103 Health Education (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course explores health and wellness including the effects of stress, physical fitness, nutrition, body weight, substance abuse, infectious diseases and environmental factors. Other topics will include sexuality, cardiovascular health, cancer, chronic health conditions and how to make informed decisions related to health.

BIOL 104 Conservation and Natural Resources (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course introduces the basic principles of conservation biology as they relate to our critical need as global citizens to preserve and protect biodiversity and natural resources. In addition to studying the causes of extinction; habitat loss and restoration; management of populations, communities and ecosystems; students also explore philosophical issues in conservation values and ethics. This interdisciplinary course integrates contributions from the fields of law, political science, economics, history and sociology into the fundamental biological principles of conservation. Practical applications, personal stewardship and globally sustainable solutions are emphasized.

BIOL 105 Basic Human Anatomy and Physiology (4-0) 4 Cr. Hrs.*Prerequisite:* Successful completion of, BIOL 050 or high school introductory general biology within the last five years.

This course introduces fundamental terminology and concepts that will enable students to acquire a basic understanding of the structure and function of the human body. The anatomy and physiology of the major human organ systems and their association with health and disease is explored. BIOL 105 is intended for students in allied health programs that do not require a laboratory course in human anatomy and physiology.

BIOL 114 Basic Human Nutrition (1-0) 1 Cr. Hr.*Prerequisite:* None.

This course provides a basic study of human nutrition with emphasis on scientific principles, metabolism and the requirements for nutrients. The role of nutrition in optimizing health throughout the human lifecycle will be explored. Disease processes that require special nutritional support are studied.

BIOL 115 Nutrition (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course provides a study of the nature and role of nutrition with emphasis on the changing needs in the human life cycle. The relationship between nutrition and health will be explored. Topics such as vegetarianism, food fads and fallacies, obesity, weight control and food additives are studied.

BIOL 120 Principles of Biology 1 (4-3) 5 Cr. Hrs.*Prerequisite:* CHEM 111 recommended. Successful completion of high school biology and chemistry within last five years.

This is the first course of a two-semester introductory biology sequence for students interested in transferring to a four-year institution to pursue a degree in biology or other science-related discipline. Together, BIOL 120 and BIOL 130 provide science majors with a comprehensive introduction to biology. In this course, students will attend four hours of lecture and three hours of lab each week to study the process of scientific inquiry, biochemistry, cell structure, membrane transport, metabolism, cell reproduction, molecular genetics, biotechnology, principles of inheritance and evolution.

BIOL 130 Principles of Biology 2 (4-3) 5 Cr. Hrs.*Prerequisite:* BIOL 120 with 2.0+ grade point or consent of department.

This is the second course of a two-semester introductory biology sequence for students interested in transferring to a four-year institution to pursue a degree in biology or other science-related discipline. Together, BIOL 120 and BIOL 130 provide science majors with a comprehensive introduction to biology. In this course, students will attend four hours of lecture and three hours of lab each week to study the evolution and diversity of living organisms, plant and animal anatomy and physiology, animal behavior, and ecology.

BIOL 140 Scanning Electron Microscopy (1-3) 4 Cr. Hrs.*Prerequisite:* None.

This course emphasizes the principles and modes of operation of the scanning electron microscope and X-ray analysis systems, electron-specimen interactions, elemental analysis, effects of microscope variables on images, image processing, routine maintenance, the use of microscope accessories and digital outputs. In the laboratory, students will prepare and examine inorganic and organic specimens using the secondary, backscatter and variable pressure detectors of the SEM. Students complete a project consisting of the preparation, imaging and analysis of a biological specimen.

BIOL 236 Human Anatomy and Physiology (4-3) 5 Cr. Hrs.*Prerequisite:* BIOL 101.

This one-semester course covers the gross and microscopic anatomy and physiology of the integumentary, skeletal, muscular, nervous, special senses, endocrine, circulatory, lymphatic, immune, respiratory, digestive, urinary and reproductive systems of the human body. Weekly instruction includes four hours of lecture and three hours of laboratory. The laboratory portion includes the use of prepared histological slides, anatomical models, bones, dissection of preserved specimens, blood typing, spirometry, urinalysis and blood pressure measurement. Students will also have an opportunity to examine a dissected cadaver.

BIOL 237 Principles of Human Anatomy and Physiology 1 (3-2) 4 Cr. Hrs.*Prerequisite:* BIOL 101.

This is the first course in a two-semester sequence in the comprehensive study of the structure and function of the human body. Emphasis will be placed upon the anatomy and physiology of the integumentary, skeletal, muscular, nervous and endocrine systems. Labs reinforce units of study and include the use of prepared histological slides, anatomical models, bones, dissection of preserved specimens and computer simulations. In addition, students will have the opportunity to examine a dissected cadaver to enhance anatomical studies. BIOL 237 and BIOL 238 are designed for the student who plans to pursue a career in the health or biomedical field. Students attend three hours of lecture and two hours of lab each week.

BIOL 238 Principles of Human Anatomy and Physiology 2 (3-2) 4 Cr. Hrs.*Prerequisite:* BIOL 237.

This is the second course in a two-semester sequence (continuation of BIOL 237) in the comprehensive study of the structure and function of the human body. Emphasis will be placed upon the anatomy and physiology of the circulatory, lymphatic, respiratory, digestive, urinary and reproductive systems. Labs reinforce units of study and include the use of prepared histological slides, anatomical models, dissection of preserved specimens, blood pressure measurement, spirometry, urinalysis and computer simulations. In addition, students will have the opportunity to examine a dissected cadaver to enhance anatomical studies. Students attend three hours of lecture and two hours of lab each week.

BIOL 240 Anatomy and Physiology Review (2-0) 2 Cr. Hrs.*Prerequisite:* BIOL 237 and BIOL 238 or BIOL 236 or equivalent or BIOL 105 or consent of instructor.

This course is a review of the anatomy and physiology of the human body with special emphasis on the physiology of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. This course is designed for students entering biomedical programs that require a review of the basic anatomy and physiology of the human body.

BIOL 243 Microbiology (3-4) 4 Cr. Hrs.*Prerequisite:* BIOL 101.

This course covers the world of microbes including microbial structures and function, biochemistry, metabolism, genetics, control of microbial growth, infectious diseases, immunity, classification and epidemiology. Laboratory techniques commonly utilized in microbiology are introduced, including microscope use, bacterial smears, staining methods, aseptic techniques, isolation of pure cultures, identification of unknown microorganisms and antibiotic testing.

BIOMEDICAL ENGINEERING TECHNOLOGY

BMET 116 Biomedical Instrumentation Terminology and Safety 1 (2-1) 3 Cr. Hrs.*Prerequisite:* Acceptance into the Biomedical Engineering Technology Program (BMET).

Students will acquire a knowledge of the language common to electronics and the medical profession based on spelling, pronunciation and definition of words and terms related to anatomy, medical equipment, electronic test equipment and safety. They will become acquainted with the fundamentals of medical equipment and testing concepts. Students will be introduced to the field of Biomedical Engineering Technology as a career.

BMET 125 Laser Safety Concepts (3-0) 3 Cr. Hrs.*Prerequisite:* MATH 053 or equivalent and BMET 116.

This course has been designed as a basic introduction to medical applications in laser fundamentals and safety. Students will study the three properties of laser light: monochromatic, directionality, and coherency. Biomedical concerns of laser hazards involving the eye, skin, toxicity, electrical and fire will be covered. Types of site and skin damages that can occur when exposed to laser wavelength will be explored. Laser system hazards classifications and safety standards will be reviewed in addressing potential hazards, necessary safety restrictions, and specified laser classifications based on American National Standards Institute (ANSI) Z136.3 Standard along with relevant Federal Center for Devices and Radiological Health (CDRH), Occupational Safety and Health Administration (OSHA) as well as relevant State of Michigan requirements.

BMET 204 Biomedical Instrumentation Terminology and Safety 2 (2-2) 4 Cr. Hrs.*Prerequisite:* Acceptance into the Biomedical Engineering Technology Program (BMET) and BMET 116 with a grade of 3.0 or better.

This course is intended to provide students with knowledge of medical equipment in the hospital setting, equipment management, equipment maintenance and other fundamental principals related to Biomedical Engineering Technology.

BMET 254 Biomedical Equipment Internship 1 (0-24/40) 3 Cr. Hrs.*Prerequisite:* Acceptance into the Biomedical Engineering Technology Program (BMET) and BMET 116 with a grade of 3.0 or better.

This is the first cooperative assignment for a Biomedical Engineering Technology student who has completed the prerequisites for this course. Employment will be approximately 24 to 40 hours per week off campus in a technical capacity with a hospital or an employer in the biomedical field. The college and the employer will jointly evaluate the student, which will then serve as a basis for a final grade. A student on a BMET internship is considered a full time student with Schoolcraft College with all rights and privileges of a full time student. (Usually 15 weeks)

BMET 255 Biomedical Equipment Internship 2 (0-24/40) 3 Cr. Hrs.*Prerequisite:* Acceptance into the Biomedical Engineering Technology Program (BMET) and BMET 116, BMET 204 and BMET 254 with a grade of 3.0 or better.

This is the second cooperative assignment for a Biomedical Engineering Technology student who has completed one semester of internship. The conditions for assignment and evaluation are the same as for Biomedical Internship 1. The student is expected to handle an increased level of technical responsibility, and may possibly serve the internship at a hospital, medical equipment manufacturer or a medical equipment service company. The college and the employer will jointly evaluate the student, which will then serve as a basis for a final grade. (Usually 15 weeks)

BUSINESS

BUS 101 Introduction to Business (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course introduces principles, problems and practices of business in areas of organization, management, information related management and e-business, labor, production, human relations, marketing, finance, insurance, regulation and government.

BUS 103 Organizing a Small Business (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to explore the advantages and disadvantages of entrepreneurship for those who may be considering starting, operating or seeking employment in a small business. The course will emphasize the organization of the small business including the various forms of business ownership, business planning, starting the business, location, cash flow and marketing concepts.

BUS 104 Operating a Small Business (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to explore the many considerations involved in owning and operating a small business. The course will emphasize the operation of a small business including insurance, employee relations, inventory control, purchasing, E-commerce, succession planning, financing, international business, legal and ethical issues.

BUS 120 Strategic Selling (3-0) 3 Cr. Hrs.

Prerequisite: None.

Both the novice and the professional salesperson can benefit from this course. The personal selling process will be studied in detail, emphasizing topics ranging from prospecting and qualifying to closing the sale and after sale follow-up. Territory management, selling to organizational buyers and the techniques of ethical salesmanship will also be explored. Students will gain valuable experience with the selling process through case studies, role playing exercises and by creating a sales presentation for demonstration.

BUS 122 Advertising (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course focuses on the information and skills required to create effective advertising. The student will learn to recognize effective advertising and gain an appreciation for the challenges advertisers face in trying to reach target audiences. The course also concentrates on market research, media strategy, integrated marketing communication and the impact of advertising on consumer behavior.

BUS 123 Consumer Behavior (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course explores the background of consumer behavior from the viewpoint of the individual, households, society and culture. Insights to individual behavior like personality, motivation and perception are covered. An exploration of social-cultural influences like economics, ethics and multiculturalism will provide an understanding of local, regional, national and global approaches to understanding consumers. In addition to consumer purchasing decisions, creating promotional strategies for customer retention and consumerism and public policy issues will be discussed.

BUS 161 Retail Principles and Practices (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course introduces basic elements of retail organization and operation. Problem situations related to retailing are identified along with specific applications of retail procedures.

BUS 202 Business Ethics (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course provides an overview of business ethics including its importance and its impact on stakeholders and society. The course will explore emerging ethical issues, the institutionalization of business ethics, the decision-making process and implementing business ethics in a global economy.

BUS 204 Personal Finance (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a practical study of problems and solutions facing the consumer in today's society. The major areas that are covered in this course include personal budgeting, bank and financial institution comparison, strategies in the use and application of credit, insurance alternatives, housing alternatives, large item purchasing (such as automobiles) and occupational choices.

BUS 205 Personal Investing (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course provides an overview of the opportunities and strategies available to the personal investor. The major areas covered include the types of investors and investments, securities markets, macroeconomic and industry variables, investment analysis and management and international investment strategies.

BUS 206 Foundation of Business Information Technology (3-0) 3 Cr. Hrs.

Prerequisite: CIS 120.

This course provides a review of current Business Information Technologies, examines the role and functions of these technologies, and offers an opportunity to explore current and future issues related to technology in business operations. Major areas addressed include security, researching and selecting technologies, training issues and incorporating technology into an overall business plan.

BUS 207 Business Law 1 (3-0) 3 Cr. Hrs.

Prerequisite: None.

In this course you will learn how a business is impacted by the legal environment. You will be introduced to the key principles of business law including contracts, sales transactions, legal processes of crimes and torts, consumer rights and real-world cases showing these principles in action.

BUS 208 Business Law 2 (3-0) 3 Cr. Hrs.

Prerequisite: BUS 207 recommended.

This course is a continuation of BUS 207 with emphasis on negotiable instruments, real and personal property, agency, partnerships, corporations, employment, and wills and estates.

BUS 215 Business on the Web (3-0) 3 Cr. Hrs.*Prerequisite:* BUS 101 or equivalent.

This course introduces the student to the key business and technology elements of electronic commerce. Both the theory and practice of conducting business over the Internet and World Wide Web are presented. The major topics include planning and building a Web presence, marketing on the Web, business-to-business strategies, online auctions, legal/ethical/tax issues, Web server hardware/software, security, payment systems and technology infrastructure.

BUS 217 Business Management (3-0) 3 Cr. Hrs.*Prerequisite:* BUS 101 or consent of department.

This course centers on the basic functions of the management process which are decision making, organizing, staffing, planning, controlling, communicating and directing.

BUS 220 Supervision (3-0) 3 Cr. Hrs.*Prerequisite:* None.

In this course you will discover how to become a successful and respected supervisor in the current contemporary workplace. Besides assessing your current supervisory traits, you will develop new skills addressing leadership, staff motivation, effective communication methods, problem-solving techniques, time management, multitasking and human relations. You will explore real-world situations and learn strategies to overcome a variety of challenges facing supervisors in a global and diverse workplace.

BUS 221 Statistical Inference for Management Decisions (3-0) 3 Cr. Hrs.*Prerequisite:* MATH 122.

The course is an in-depth study of Probability and Statistics. The course concentrates on decisions based on statistical data and is a logical subsequent course to MATH 122 Elementary Statistics.

BUS 226 Principles of Marketing (3-0) 3 Cr. Hrs.*Prerequisite:* BUS 101 or consent of department.

In this course you will learn an integrated analytical approach to the marketing process and essential economic principles as they apply to the marketing process. You will also be introduced to the relationships of marketing decisions, marketing research, consumer behavior, product strategy, channels of distribution, promotion and pricing.

BUS 230 Human Resource Management (3-0) 3 Cr. Hrs.*Prerequisite:* BUS 101 or consent of department.

In this course, you will be introduced to the dynamic role of human resource management in supporting an organization's mission and objectives. You will explore the legal influences on selecting, managing and retaining human resources. You will prepare valid selection instruments to conduct effective interviews and performance reviews. We will discuss contemporary employment issues and global human resource concerns. You will become knowledgeable about the various systems and practices to help build a skilled and motivated workforce.

BUS 240 International Business (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course focuses on the latest theories and concepts in international business while emphasizing the leading role culture plays in global commerce. The issues and challenges confronting international companies are explored along with the various strategies companies may pursue.

CHEMISTRY**CHEM 051 Basic Chemistry (4-2) 4 Cr. Hrs.***Prerequisite:* MATH 053 or equivalent.

This is an elementary course in chemistry for students who have not had high school chemistry or who wish to review basic chemical concepts. This course provides an introduction to chemical measurement, basic definitions and laws, chemical nomenclature and equations, calculations based on chemical equations, atomic theory, the Periodic Table, solutions, acids, bases, gases and organic chemistry.

CHEM 100 Introduction to the Chemistry of Food for Culinary Arts (3-2) 4 Cr. Hrs.*Prerequisite:* None.*Corequisite:* Students must be enrolled in 100 level or above core culinary classes.

This course is designed to familiarize the culinary arts student with a basic understanding of scientific principles as they apply to foods and culinary processes. The course will include a basic introduction to various aspects of chemistry. Classes of foodstuffs will be examined on a molecular level to ascertain an understanding of the interactions that occur in culinary applications. The laboratory portion of the course will emphasize the relationships between chemical principles/techniques and food preparation.

CHEM 111 General Chemistry 1 (4-3) 4 Cr. Hrs.*Prerequisite:* CHEM 051 or equivalent with a grade of 2.0 or better. MATH 113 or equivalent. Math may be concurrent.

This course is designed as a first course in a traditional one-year program in general college chemistry and includes fundamental concepts such as chemical formulas, chemical equations, laws of chemical combination and physical, chemical and nuclear properties. Atomic and molecular structure, bonding, stoichiometry, periodicity, gases, solutions, acids, bases, oxidation-reduction and nuclear chemistry are also covered in this course. Laboratory work correlates with lecture and stresses the major concepts in this course.

CHEM 117 General Chemistry 2 and Qualitative Analysis (4-4) 5 Cr. Hrs.*Prerequisite:* CHEM 111 with a grade of 2.0 or better or consent of department.

This course is the second course in a traditional one-year general college chemistry program and includes the study of kinetics, solution equilibria, solubility equilibria, hydrolysis, electrochemistry, coordination compounds, thermodynamics and qualitative analysis. A brief introduction to organic chemistry and quantitative analysis is also included. Laboratory work correlates with lecture and stresses the identification of common cations and anions by semi-micro methods.

CHEM 120 Organic and Biochemistry (3-3) 4 Cr. Hrs.*Prerequisite:* CHEM 111.

This course is an introduction to both organic chemistry and biochemistry. Major topics covered include structures, functions and reactions of organic and biological compounds; the chemistry of metabolic processes; enzymatic processes; and related topics. The laboratory portion of the course includes exercises in organic and biochemistry designed to reinforce lecture topics.

CHEM 213 Organic Chemistry 1 (4-4) 5 Cr. Hrs.*Prerequisite:* CHEM 117 with a grade of 2.0 or better or consent of department.

This is the first semester of the two-semester sequence of Organic Chemistry. Course content emphasizes bonding and structure of carbon compounds, as well as a mechanistic understanding of organic reactions. Other topics include standardized nomenclature, acid-base behavior of organic molecules, classification of compounds based on functional groups and their characteristic reactions and structure/properties relationships. The laboratory portion of the course covers a range of techniques fundamental to the practice of organic chemistry. Students are also introduced to the use of modern spectroscopy for structural determination.

CHEM 214 Organic Chemistry 2 (4-4) 5 Cr. Hrs.*Prerequisite:* CHEM 213 with a grade of 2.0 or better or consent of department.

This is the second semester of the two-semester sequence of Organic Chemistry. Course content emphasizes characteristic reactions of aromatic compounds and a wide variety of more complex functional groups, including carbonyl compounds, carbonyl-derivatives and amines. Practical application of functional-group transformation reactions to organic synthesis is addressed, as is utilization of a number of spectroscopic methods for structural determination. The laboratory portion of the course continues development of practical skills in organic transformations using more complex reaction techniques with application to organic synthesis.

CHILD AND FAMILY SERVICES
CCD 100 Introduction to Child Welfare Services (3-0) 3 Cr. Hrs.*Prerequisite:* None.

Students will receive wide exposure to community agencies and resources available to children and youth. There will be focus on identifying needs of children and methods through which those needs are met by the community when parents are unable to do so or need assistance.

CCD 101 Preschool Child Care (3-0) 3 Cr. Hrs.*Prerequisite:* CCD 116 or consent of department.*Corequisite:* CCD 150 if not previously taken.

This course is designed to assist students in understanding the needs of the preschool child and methods by which they are met. There will be a focus on stages of development, typical behaviors, curriculum development and implementation. Observational skills will be sharpened, with concentration on signals alerting students to the children's levels of functioning.

CCD 102 Foundations of Early Childhood Education (3-0) 3 Cr. Hrs.*Prerequisite:* None.

Students will be provided a general overview of Early Childhood Education. This review includes an introduction to early childhood education, theories of child development, information on key organizations, relevant laws and regulations, discussion on opportunities within this field, the NAEYC code of ethical conduct, core competencies for the field and developmentally appropriate practices. Students will spend time observing a variety of early childhood programs.

CCD 105 Introduction to Developmental Disabilities (3-0) 3 Cr. Hrs.*Prerequisite:* CCD 216.*Corequisite:* CCD 216 if not previously taken.

This course is designed to introduce students to the health and developmental problems of persons with cognitive impairment (CI). Emphasis is placed on gaining knowledge of the various syndromes typical in CI populations and learning to recognize medical symptoms. Attention will also be given to developing an understanding of prescribed drugs and their side effects, as well as infectious diseases.

CCD 113 Special Educational Programs and Supported Living (3-0) 3 Cr. Hrs.*Prerequisite:* CCD 216.*Corequisite:* CCD 216 if not previously taken.

Students will become familiar with considerations of placement and training of persons with cognitive impairments, emotional impairments, learning impairments and physical handicaps. Attention will be given to the theory and principles of normalization and appropriate community support. The course will cover the operation and maintenance of supportive living environments. In addition, current laws and regulations regarding licensing, equipping and maintaining the physical plant, staffing, food services, health and social services, budgeting and program development will also be addressed.

CCD 115 School-Age Child Care (3-0) 3 Cr. Hrs.*Prerequisite:* CCD 116 or consent of department.*Corequisite:* CCD 150 if not previously taken.

This course is designed to identify the developmental tasks of middle childhood (ages 6–12) and suggest ways that caregivers can help foster healthy growth and development. Emphasis will be on understanding the needs of the school-age child and methods by which they are met.

CCD 116 Child Development (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is designed to provide students an overview of life from its beginning through emerging adulthood. The course will concentrate on physical, cognitive, social and emotional development in the prenatal, infancy, toddler, preschool, middle childhood and adolescent periods.

- CCD 118 Infant and Toddler Care (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 116 or consent of department, and CCD 150.
Corequisite: CCD 150 if not previously taken.
 This course is designed to prepare students to provide care for infants and toddlers in group care settings. Students will learn the essential ingredients in infant and toddler care and will learn to match caregiving strategies to very young children as they develop. A holistic emphasis focuses on the development of a curriculum which provides for the physical, emotional, social and cognitive development of infants and toddlers.
- CCD 121 The Adolescent (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 116 or consent of department.
 In this course the student will explore major theories in adolescent development and use the theoretical constructs to understand adolescent behavior. Students will recognize the contributing factors which lead to the development of a stable identity hierarchy and the development of responsibility in adolescence.
- CCD 126 Creative Activities (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 The purpose of this course is to introduce students to the stages of creativity development in children. Open-ended process art and creative activities will be emphasized that are appropriate for young children and persons with developmental challenges. Lab experiences are incorporated into this course.
- CCD 130 Learning Disabilities (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 216.
Corequisite: CCD 216 if not previously taken.
 This course is designed to acquaint the student with the perceptual and learning issues of learning disabled children and special education programs in the public school which provide specialized learning situations for them. The diagnosis of disorders of visual and auditory perception, language, motor coordination, cognition, and attention deficit related to the learning processes are discussed as well as specific recommendations for remediation and implications for school planning.
- CCD 140 Emotional Impairment (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 216.
Corequisite: CCD 216 if not previously taken.
 The purpose of this course is to acquaint students with concepts and materials related to the education of children with emotional impairments. The major theories related to causes and treatment of emotional and behavior problems will be covered.
- CCD 150 Child Care Practicum 1 (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 116 or consent of department.
 Students will have a supervised practicum experience working directly with children in an early childhood or special needs setting. Students will spend 150 hours over the semester in their practicum placement. Students will have the opportunity to integrate classroom material with on-the-job experience and evaluate the experiences of children in light of the concepts they have learned. Emphasis will be placed on observing and reporting activities of the children.
- CCD 155 CDA Assessment Preparation (1-0) 1 Cr. Hr.**
Prerequisite: CCD 101 or CCD 118, CCD 102, CCD 116 and CCD 221. CCD 150 with a grade of 2.5 or higher.
 To be awarded the CDA credential a Candidate must present evidence to The Council for Early Childhood Professional Recognition of his/her competence as a child care provider/educator. This course is designed to support the CDA Candidate in preparation for the final assessment process.
- CCD 200 Child Care Practicum 2 (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 101. CCD 150 with a grade of 2.5 or higher.
 Students will have a supervised practicum experience working directly with children in an early childhood setting. Students will spend 150 hours over the semester in their practicum placement. Students will have increased responsibility planning and implementing activities for children. Emphasis will be placed on working as a contributing member of a teaching team. Students will spend 150 hours over the course of the semester in their practicum placement.
- CCD 211 Children and Youth in Groups (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 150.
Corequisite: CCD 150 if not previously taken.
 The course is designed to introduce students to the role of social competence in the lives of children. Students are introduced to the principles of group functioning and techniques of helping children become accepted members of peer groups. Behavior modification principles and strategies are examined. Emphasis is placed on respecting children and understanding influences on their behavior.
- CCD 214 Operation and Maintenance of a Child Care Facility (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course will cover methods of operating and maintaining a child care facility. Included will be current laws and regulations regarding licensing, accreditation, equipping and maintaining the physical plant, staffing, food services, health and human services, budgeting and program development.
- CCD 215 Methods and Curricula for Persons With Developmental Disabilities (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course will familiarize the student with the theoretical approaches of education for persons with special needs including a survey of various curricula.
- CCD 216 The Child With Special Needs (2-2) 3 Cr. Hrs.**
Prerequisite: None.
 This course is designed to introduce students to the topic of children with special needs. Included is the exploration of cognitive impairments, emotional impairments, learning impairments, visual and hearing impairments, and orthopedic and/or other health impairments.
- CCD 218 Practicum 2—Special Education Focus (3-0) 3 Cr. Hrs.**
Prerequisite: CCD 215 and CCD 216. CCD 150 with a grade of 2.5 or higher.
 Continued supervised experience working directly with children and adults with special needs in educational and group settings. Students will have increased responsibility providing and implementing activities for children and adults with special needs. Emphasis will be placed on working as a contributing member of a teaching team. Students will spend 150 hours over the course of the semester in their approved practicum placement.

CCD 221 Early Literacy and Numerical Thinking (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course explores literacy and numerical thinking in early childhood. An emphasis will be placed on constructivist and sociolinguistic views of learning. Experiential exercises and reading will provide students with opportunities to plan developmentally appropriate learning activities, to record observations of children and to generate developmental analyses that support literacy and numerical thinking development.

CCD 224 Emerging Educator (1-0) 1 Cr. Hr.

Prerequisite: Consent of department. CCD 224 is the final CCD course taken by students in their program of study. Students are to contact the Child and Family Services department for confirmation of eligibility for taking CCD 224 prior to registering for the class.

A required conclusion to the Schoolcraft College Child and Family Services Associate Degree Programs. This capstone course is designed for students to demonstrate competencies in their designated program of study of early childhood or special education. In the Emerging Educator course students will present evidence of skills and knowledge gained through the program.

CHINESE

CHIN 101 Elementary Chinese 1 (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This course is intended for students who have no previous education in Chinese. The course will cover basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Chinese culture will be an integral part of the course.

CHIN 102 Elementary Chinese 2 (4-0) 4 Cr. Hrs.

Prerequisite: CHIN 101 with a grade of 2.0 or better or one year of high school Chinese or consent of instructor.

This course is a continuation of CHIN 101 and continues to review the basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Chinese culture will be an integral part of the course.

COLLEGE AND BEYOND

CAB 100 Student Success Seminar (1-0) 1 Cr. Hr.*Prerequisite:* None.

This course is designed to introduce you to strategies and attitudes that will help you to maximize your potential for success in both college and the workplace. You will explore your personal learning style and develop skills aimed at improving your classroom performance and future employability. Topics covered include college terminology and resources, technology, time management, goal setting, critical thinking and study techniques.

CAB 101 Student Success (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is designed to increase students' learning potential and success in college and beyond. Each student will actively explore learning strategies and attitudes that lead to improved grades and employability. Topics covered in the course include college language and resources, time/task planning, critical thinking, study techniques, uses of the e-portfolio, self reflection, and exploring attitudes and dispositions successful students bring to a learning environment. Each student will learn to apply the principles covered in this course to other college course work.

COLLEGIATE SKILLS

COLLS 045 ESL Reading and Word Power (3-1) 4 Cr. Hrs.*Prerequisite:* None.

This course focuses on developing vocabulary and comprehension skills in group and lab settings for the international student. Students will explore and develop reading strategies to improve efficiency and understanding.

COLLS 049 Critical Reading and Thinking Applications for the International Student (3-1) 4 Cr. Hrs.

Prerequisite: COLLS 045 or appropriate reading placement score.

This course is designed to prepare international students to successfully handle college level reading assignments. Reading comprehension techniques and second language vocabulary development strategies are emphasized using a variety of materials. Culturally appropriate techniques will be applied to selected materials and textbooks students are currently using.

COLLS 050 College Reading (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This course focuses on developing vocabulary and comprehension skills in group and lab settings. Students will explore and develop reading strategies to improve efficiency.

COLLS 053 Critical Reading and Thinking Applications (4-0) 4 Cr. Hrs.

Prerequisite: COLLS 050 or appropriate reading placement score.

This course is designed to prepare students to successfully handle college level reading assignments. Reading comprehension techniques and vocabulary development strategies are emphasized using a variety of materials. Techniques will be applied to selected materials and textbooks students are currently using.

COLLS 105 Learning Skills (1-0) 1 Cr. Hr.*Prerequisite:* Consent of department.

This course is designed to provide students with the learning skills and support necessary to successfully balance academic and other life demands. Students will apply techniques to their personal situations and course load requirements.

COLLS 111 Electronic Portfolio (1-0) 1 Cr. Hr.*Prerequisite:* None.

This course introduces the Schoolcraft College Electronic Portfolio. Students will engage the college learning experience by 1) growing an awareness of the college's expectations that they will acquire the attitudes, skills, knowledge and ability characteristic of generally educated persons, 2) understanding the changing nature of the college learning focus from acquisition of courses and credits to providing demonstrable evidence of their learning outcomes and 3) starting the process of creating their personal electronic portfolios as the primary vehicle for showcasing their demonstrable evidence. Students will leave the course with some experience in the college learning environment, knowing the kind of expectations they will meet in their courses and programs and the beginnings of their own Schoolcraft College Electronic Portfolio on electronic media.

COLLS 130 Applied Learning Theory for Nursing Majors (3-0) 3 Cr. Hrs.*Prerequisite:* COLLS 053 or college level reading placement score and BIOL 101.

This course is designed to prepare nursing students for the demands of the nursing program. Emphasis will be placed on developing and applying critical reading, thinking and learning strategies to nursing content. Topics covered in the course are reading speed/comprehension, reading study system, lecture note taking, time/goal management, test preparation/test taking and mathematics, as well as assistance with TEAS preparation. This course will help students prepare to handle courses offered throughout the entire nursing program.

COLLS 211 Electronic Portfolio—Exit Course (1-0) 1 Cr. Hr.*Prerequisite:* COLLS 111.

This course concludes the process of building the Schoolcraft College Electronic Portfolio begun in COLLS 111. Students will review their college learning experience as well as collect, organize and reflect upon evidence that they have developed attitudes, skills, knowledge and abilities associated with a generally educated person during that experience. Students will create personal program-level portfolios following the college's specified guidelines that demonstrate their academic achievements and showcase what they have to offer as Schoolcraft College graduates. The college may select a sample of the portfolios produced for assessment of institutional or program outcomes.

COMMUNICATION ARTS

COMA 103 Fundamentals of Speech (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course develops essential skills through directed practice in a variety of speech situations and furnishes basic knowledge necessary for intelligent speech improvement; stress is on speaker's ideas, attitudes and audience adjustment.

COMA 200 Interpersonal Communications (3-0) 3 Cr. Hrs.*Prerequisite:* COMA 103 or consent of instructor.

This course provides study and practical application exercises in the basic elements of interpersonal communication with emphasis on self-concept, perception, meanings, listening, feedback, defensive communication barriers and nonverbal communication. Special attention will be given to improving interpersonal communication skills.

COMA 201 Discussion (3-0) 3 Cr. Hrs.*Prerequisite:* COMA 103 or equivalent.

This course conveys a better understanding of human affairs. The student will review attitudes and skills for effective participation in discussion including cooperative thinking, exchange of ideas and problem solving.

COMA 210 Communication for Leaders (3-0) 3 Cr. Hrs.*Prerequisite:* COMA 103.

This course is an exploratory examination of the leadership role within today's professional arena. The course is designed as an overview to develop communication awareness and effectiveness in teams of leaders within the community, corporate interviews, small group discussions and problem-solving in staff meetings and presentations as well as an examination of communication barriers.

COMA 230 Introduction to Mass Communication (3-0) 3 Cr. Hrs.*Prerequisite:* COMA 103.

Understanding media in today's world is more than a scholarly exercise; it is a necessary survival skill in a world that has been utterly changed by mass communication. All students, whether they will be practitioners, critics or consumers, have to be able to analyze the ways in which mass media is being used to change the world. This course provides the tools needed to accomplish this analysis.

COMPUTER AIDED DESIGN

CAD 101 Introduction to Computer Aided Drafting (2-2) 3 Cr. Hrs.*Prerequisite:* Drafting experience and consent of department.

This course is designed for the experienced drafter who wants to obtain some CAD skills. Topics to be covered will include 2D drawing creation, drawing, editing, and plotting as well as view manipulation. In addition, the student will learn the basics about file saving, retrieving and copying.

CAD 103 Engineering Graphics (2-2) 3 Cr. Hrs.*Prerequisite:* None.

This course is designed to introduce the student to the basic concepts and standard practices necessary for the graphical communication of technical data which includes the reading, interpretation and creation of engineering drawings, technical sketching and introduction to computer-aided drafting (CAD). Topics introduced include orthographic projection, pictorials, sectioning, auxiliary views, dimensioning, tolerancing, surface finish and fasteners. This course is designed for the transfer Engineering student and as an introductory course for those who are considering a career as a mechanical or tool designer.

CAD 106 Advanced Drawing Views and Descriptive Geometry (3-2) 4 Cr. Hrs.*Prerequisite:* CAD 103 or equivalent.

This course is designed to teach the student advanced skills in drawing view creation. Sketching and computer aided drafting (CAD) will be the tools for communicating mechanical product information. Topics to be covered will include projection methods for creating orthographic, auxiliary and section views. Descriptive Geometry will be used to solve advanced drawing problems. This course is designed for those who have chosen a career as a mechanical or tool designer.

CAD 107 Detailing (2-4) 4 Cr. Hrs.*Prerequisite:* CAD 106 or equivalent.

This course is designed to teach the student the concepts and standard practices involved in the creation of detail and assembly drawings. Geometric Dimensioning and Tolerancing (G.D. and T.) philosophy will be employed for controlling variations. Sketching and computer-aided drafting (CAD) will be the tools for communicating mechanical product and tool information. The student will create 3D models and 2D drawings. Simple assemblies will be constructed and analyzed using previously created parts. Topics to be covered will be dimensioning standards and practices, tolerancing methods, tolerance stack-up evaluation, G.D. and T. methods, 3D modeling, and 2D and data extraction from 3D models.

CAD 211 CATIA—Level 1 (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This first level CATIA course will cover the basics of creating, editing and storing 3D models. The construction and constraining of assemblies will be covered as will the creation of detail and assembly drawings using the drafting package.

CAD 212 CATIA—Surfacing (2-2) 4 Cr. Hrs.*Prerequisite:* CAD 211 or equivalent.

This course is designed to present higher level part modeling commands for CATIA Modeler. Particular attention will be paid to surfacing.

CAD 221 SolidWorks—Level 1 (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This first level SolidWorks course will cover the basics of creating, editing and storing 3D models. The construction and constraining of assemblies will be covered as will the creation of detail and assembly drawings using the drafting package.

COMPUTER GRAPHICS TECHNOLOGY**CGT 109 Design Concepts and Technology (3-0) 3 Cr. Hrs.***Prerequisite:* None.

In order to succeed in any discipline within the Computer Graphics field students must have a strong sense of design. This course covers both the theoretical and the practical aspects of design theory, design process and software application. This course includes an introduction to design elements and principles—how they work together to create effective communication. It includes an understanding of typography, grid systems and color theory including physiological, emotional and cultural variations. Materials include a look at human perception and Gestalt theory to foster an understanding for visual communication. A variety of application programs are introduced in order to explore proper file types and tools and the strengths and limitations of a variety of digital media. The computer graphics industry is explored and resources are provided for concept development and job search along with a brief introduction to intellectual property rights. This course provides foundation skills for all classes within the CGT curriculum. In this course students will use software at an introductory level, exploring vector and bitmapped images, page-layout, animation and interactive Web site development. Projects and exercises are designed to allow students to do both short skill building exercises and more complex larger works.

CGT 123 Illustration—Illustrator (3-0) 3 Cr. Hrs.*Prerequisite:* CGT 109 (may be taken concurrently).

This course is intended to introduce students to the field of graphic design and illustration using professional computer drawing software. Emphasis is on learning the software and on applying basic design skills to the computer generated image. Students are instructed in the fundamentals of drawing on the computer, working with color, working with type and combining type and image for effective communication. Students are expected to be familiar with basic functions of the computer before beginning the class.

CGT 125 Digital Imaging 1—Photoshop (3-0) 3 Cr. Hrs.*Prerequisite:* CGT 109 (may be taken concurrently).

This course introduces students to the field of digital imaging and electronic photographic manipulation using Adobe Photoshop. Emphasis is placed on developing strong software and digital imaging skills plus reinforcement of design and creative skills. This will be accomplished through a series of progressively challenging assignments, which mirror professional studio projects. The class will progress the student's skills from basic application knowledge to advanced image manipulation techniques. The assignments will be applicable for both print and screen based imagery. Students are expected to have some computer experience and be familiar with basic functions of the computer before beginning the class.

- CGT 127 Publishing—InDesign (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course introduces students to the field of publishing design using Adobe InDesign. Emphasis is on learning the software and on applying basic design skills to computer generated design. Students will have the opportunity to learn the fundamentals of page-layout, typography, working with color and color separations and preparing documents for printing. Students are expected to have some computer experience and be familiar with basic functions of the computer before beginning the class.
- CGT 136 Web Design and Development 1 (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course introduces the student to the unique design principles and World Wide Web Consortium (W3C) standards for creating effective Web sites. Web design process will be introduced to aid in the basic planning, wireframing, and construction of a project. Web graphic understanding will be integrated with its technical build. Students will design and code basic Web sites utilizing HTML and Cascading Style Sheets (CSS); with emphasis on access and semantic markup. Basic Web authoring tools and image editing software will be used.
- CGT 141 Introduction to Interactive Media and Game Design (3-0) 3 Cr. Hrs.**
Prerequisite: CGT 125 (may be taken concurrently).
 This course is an introduction to the creation of computer games and other interactive media. Students will learn how to make basic 2D animations and use basic scripting techniques to make interactive projects for CD-ROM and kiosk based projects. Emphasis will be on solving the special design and production problems encountered when creating non-linear projects, along with animation techniques, basic scripting, memory management, importing/exporting considerations, basic sound and video, project management and production planning.
- CGT 149 Typography (3-0) 3 Cr. Hrs.**
Prerequisite: CGT 123 (may be taken concurrently).
 This course introduces the graphic design student to the principles of typography by investigating letter forms as both an element of design and as a medium of communication. Concentration is on typeface identification, effective use of type to convey information, measuring systems and application of typography to computer graphics.
- CGT 154 Sound Editing for Graphic Artists (2-0) 2 Cr. Hrs.**
Prerequisite: None.
 This course provides an introduction to the basic concepts of sound production for computer and video based delivery systems. Also emphasized are the necessary hardware/software, sound recording and editing, file management and transfer and aesthetic considerations.
- CGT 157 Prepress (2-0) 2 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following courses: CGT 123, CGT 125 and CGT 127.
 Every successful piece of graphic design succeeds on both the technical and conceptual level. This course focuses solely on the technical—or execution—part of graphic design as it relates to printed material. Students will have the opportunity to learn how commercial printing is done and how the printing process imposes limits on graphic design. Students will learn how to work with printers to achieve the best possible results.
- CGT 161 History of Graphic Design (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course introduces the student to the history of graphic design and its application as a form of mass communication. Students examine how social, cultural and technical considerations have influenced the way information is designed for publication. Students learn how an understanding of historical, cultural and social influences leads to more effective graphic design in the modern world.
- CGT 163 Web Design and Development 2 (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 136.
 This course emphasizes the integration of design principles and software skills to create effective Web sites using advanced Web design process. Students will explore design and development features; such as, User Interface and User Experience Design, HTML (5+), Cascading Style Sheets (3+) (CSS), tables (for tabular data display), forms, and embedding various media types; such as, Flash and video. Students will construct valuable solutions to the needs and goals of the client with attentive focus on project descriptions, design compositions, site maps, wireframes, usability testing, project management, and optimization. Students will study how the Web works, its design and development challenges, current industry standards specified by World Wide Web Consortium (W3C), and the transferring of local files to a remote live Web server. Adobe Dreamweaver and other current Web software will be used.
- CGT 166 Photography (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course is designed to instruct the student on photographic principles that affect exposure, image structure, composition, printing and the interface with digital media. Students will experience hands-on photography sessions that demonstrate lighting, visual effects and composition development based on contrast and focal point awareness. In conjunction with the camera, the student will explore advanced digital imaging options, the zone system and creative merging techniques. Course materials are designed for the student pursuing a graphic design career. The student will be required to have a 35mm camera and is responsible for film and processing costs or digital equivalent.
- CGT 168 Storyboarding (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 166.
 This course provides the student a working knowledge of storyboarding. It integrates creative expressions, emotional impressions and production processes into a cohesive conclusion. It provides the student an opportunity to expand a creative understanding of audio, cinematography, lighting and staging. Storyboarding is a basic need for the student pursuing careers in multimedia, interactive and performance arts.
- CGT 206 Scripting for Interactive Media and Game Design (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 141.
 This is an intermediate course in the creation of computer games and other interactive media projects. Emphasis in this course is on advanced scripting techniques required to produce effective and highly interactive games or projects for CD-ROM or computer based projects. Emphasis will be on scripting techniques to control navigation, animation, sound, video and memory management.

- CGT 208 Digital Video Production (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following courses: CGT 123, CGT 125 and CGT 168.
 This course is an overview of skills required to create digital video productions. Students will develop video productions using pre-production planning, practical skills in camera usage, efficiencies in directing and production skills and refined non-linear editing. The productions developed during the semester will include informational, marketing and promotional materials.
- CGT 210 Visual Effects Production (1-2) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 208.
 This course is designed to integrate video production techniques, 3D model building and computer graphics compositing. Students will develop the practical skills to coordinate the merger of these techniques into a consistent visual effects production. This course will enable the students to effectively calculate shooting angles, monitor film speeds, develop mattes and scale 3D models or miniatures into a final scene. Safe Practical Effects will be developed that can be used on a set to accomplish dramatic effects while maintaining visual continuity of composited digital images.
- CGT 211 Flash (3-0) 3 Cr. Hrs.**
Prerequisite: Experience with a vector-art drawing program.
 CGT 123 may be taken concurrently.
 This course provides the student with an introductory knowledge of working with Flash. Flash is a vector-based design program for the creation of animation, games and interactive components for use on the internet. Students will focus on the creation of basic animation and navigation components for use on the internet as well as for stand-alone projects.
- CGT 212 Flash Action Scripting (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 211 or equivalent experience with Flash.
 This course provides an in-depth exposure to the Flash Action Scripting language. Students will learn to write scripts which extend and enhance the capabilities of the Adobe Flash software. During the semester, each student will design and produce a complex, highly interactive project such as a Web site, computer game or computer-based training module. Students should have a working knowledge of Flash before beginning this class.
- CGT 215 Motion Graphics 1—After Effects (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following courses: CGT 109, CGT 123, CGT 125 and CGT 155. CGT 208 may be taken concurrently.
 This course develops creative freedom and control for designing sophisticated motion graphics and visual effects for film, video, multimedia and the Web. Students will integrate previously learned applications into motion-graphics using Adobe After Effects and/or related applications. Students will develop an understanding of motion control and keying capabilities plus audio and visual effects.
- CGT 226 Digital Imaging 2—Photoshop (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following courses: CGT 109, CGT 123 and CGT 125.
 This course will further explore the uses of photography and the digital image in the field of graphic design. Students will learn how object oriented graphics and design can be enhanced with the dynamic range of Photoshop options. Students will develop advanced compositing skills, sensitivity to the selection of color modes plus channel and masking options, restoration and repair processes and an understanding of usable effects.
- CGT 231 Electronic Publishing (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following courses: CGT 109, CGT 123, CGT 125 and CGT 127. CGT 226 may be taken concurrently.
 This course emphasizes the integration of design and software skills to create more effective layouts for print media. Students will explore photography and digital imaging, illustration, graphic design and page layout. Students learn to use type effectively, create and integrate images and type, set up projects for printing and apply design principles to create effective and readable documents. Instruction in advanced software techniques and in the use of a variety of peripherals is featured. Emphasis will be on the application of software and design skills to a variety of realistic graphic design projects.
- CGT 234 Web Design and Development 3 (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or higher in the following course: CGT 163.
 This course emphasizes the integration of front-end design and development principles and software skills to architect effective user-friendly Web sites. Students will focus on advanced design and development features; such as, JavaScript, DOM (Document Object Model) Scripting, and the utilization of industry standard JavaScript frameworks. Students will apply software and development skills to realistic Web development projects. Students will explore common browsers compatibilities, developing Web sites and publishing local files to a remote live Web server. Adobe Dreamweaver or other current Web authoring and editor software will be used. The student will look at user experience considerations; such as, user interface architecture, usability, 508 compliance, and the standards specified by the World Wide Web Consortium (W3C) to produce an engaging end user Web experience.
- CGT 237 Dynamic Web Design With ColdFusion (3-0) 3 Cr. Hrs.**
Prerequisite: CGT 163.
 This course provides advanced Dynamic Web development utilizing the most recent versions of Adobe's ColdFusion and Dreamweaver. Topics covered will include scripting in CFML and XHTML, Web site planning, testing, security and production. Emphasis will be on managing the flow of database information with client and server side documents. Also included will be coverage of data-driven pages, forms and data-entry using Dreamweaver data connection tools, writing user-defined functions and creating dynamically data-driven Web applications.

CGT 238 Rich Internet Applications Utilizing Adobe Flex (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following course: CGT 136.

This course will introduce the student to the concepts, design considerations and programming of Rich Internet Applications (RIAs). RIAs are a current and cutting-edge method of delivering both Web-based and desktop applications. They provide the user with a richer and more satisfying user experience than traditional HTML page-based applications. The course will demonstrate RIA concepts by covering the basics of one RIA technology—Adobe Flex.

CGT 242 Advanced Interactive Media and Game Design (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following courses: CGT 206 or CGT 212.

This is an advanced course in the creation of computer games and other interactive media projects. This course emphasizes the production process, the multidisciplinary nature of the media, integration of different components and special design problems of games and other non-linear projects. The student is instructed in advanced elements of interactive media design, integrating digital sound and video and advanced scripting techniques. Each student will produce a large scale project during the course.

CGT 244 History of Animation (3-0) 3 Cr. Hrs.

Prerequisite: None.

This class will give students a context for understanding the rich and unique history of animation and graphic design. In addition to learning important milestones in these fields, students will develop their eye and their aesthetic appreciation of this kind of art. Students will be exposed to the historical contingencies that lead to different developments as well as to animations and graphic design from all over the world. This course will also stimulate students in their own creative endeavors in their chosen field.

CGT 246 Motion Graphics 2—After Effects (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following course: CGT 215.

This course will further explore the uses of audio, graphics and video in the field of motion graphics. Students will learn how object motion graphics programs can interrelate to develop informational and promotional media. Students will make extensive use of two- and three-dimensional motion and still graphics to design and create projects for video and/or multimedia applications.

CGT 247 3D Animation—Introduction (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following courses: CGT 123 and CGT 125.

This course is designed to increase the student's familiarity with the 3D interface, concepts of 3D space and animation. It will provide an introduction to primitives, some modifiers and box-modeling techniques. Students will be exposed to lighting, texture mapping concepts and basic animation techniques. Students will also develop skill sets to create simple animations.

CGT 250 Practical Application (3-0) 3 Cr. Hrs.

Prerequisite: Must take one of the following courses either before or with this course: CGT 231, CGT 234, CGT 242, CGT 246, CGT 252 or ART 205.

Students will work in teams to develop and execute graphic design media for professional organizations, internal promotions and information media. They will function within work groups based on production skills. The groups are defined by track structures—Print Graphics, Web Design, Motion Graphics and Interactive Media. Emphasis is on applying skills to real world projects and on developing a professional portfolio. Students are instructed in team building, project management, research and interviewing techniques.

CGT 252 3D Animation—Animating (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following course: CGT 254.

This class adds to the skill sets that students were exposed to in CGT 247 Introduction to 3D Animation and CGT 254 Advanced Models and Textures. In this class students will improve their understanding of the aesthetics and software technology involved in creating effective and convincing animation.

CGT 254 3D Animation—Advanced Models and Textures (3-0) 3 Cr. Hrs.

Prerequisite: A grade of 2.0 or higher in the following course: CGT 247.

This class follows up on the skill sets that students were exposed to in CGT 247 Introduction to 3D Animation. In this class students will learn modeling, texturing and lighting techniques at a more sophisticated level. These techniques will include polygon, patch, NURBS and subdivision surface modeling, creating custom textures, lighting and atmospheric effects. They will also learn the techniques of intelligent model building and issues in creating projects for a variety of delivery platforms.

CGT 256 Portfolio 3D—Reel Development (3-0) 3 Cr. Hrs.

Prerequisite: CGT 242 or CGT 246 (may be taken concurrently).

This class prepares the student for finding a job in the field of 3D Animation or Video Production. In this course students will assemble their previous work into a professional presentation. In doing so, the student's strengths and weaknesses will be discovered and discussed. At least one project will be assigned to specifically address the individual student's portfolio needs. During the course students will create a traditional resume.

CGT 257 Portfolio Preparation (3-0) 3 Cr. Hrs.

Prerequisite: Must take one of the following courses either before or with this course: CGT 231, CGT 234, CGT 242 or CGT 246.

This class prepares the student for finding a job in the field of graphic design. In this course students will assemble their previous work into a professional portfolio/presentation. This is both a print-based and an electronic portfolio. Students will also create an identity logo, implementing it on their business card, resume and portfolio packaging. Students will explore job resources, interviewing skills and professional resources such as contracts and pricing guides.

CGT 270 Internship (3-0) 3 Cr. Hrs.

Prerequisite: Consent of department.

This internship is designed for the exceptional Computer Graphic Technology student. This course consists of work as an intern Graphic Designer, Media Developer or similar position with an approved business or company. CGT Internships will be administrated by a faculty member and approved by the CGT Department. The instructor and the business partner will jointly evaluate the student. An additional project will be developed for the client outside the normal working hours. This project will be managed by the CGT faculty member.

- CGT 298 Honors Studies (3-0) 3 Cr. Hrs.**
Prerequisite: Completed (12) twelve hours of course work. Dean's List status (GPA 3.5) and consent of instructor.
 An opportunity for the talented student to explore individually, in depth, under the guidance of a faculty member, a topic, issue or problem related to the field of Computer Graphics Technology. Available to Dean's List level students or equivalent and with the consent of the instructor. This course will not be listed in the schedule of classes. To enroll in this course, a candidate must submit a project plan to an instructor. The instructor will review the plan with the candidate and may recommend changes. When the project is approved, a course section will be created and the student will be given permission to enroll.

COMPUTER INFORMATION SYSTEMS

- CIS 105 Computer Orientation (1-0) 1 Cr. Hr.**
Prerequisite: None.
 This course is designed for students who have had little or no experience with computers. Topics covered in this course include introduction to the Windows-based operating systems and some word processing concepts. Basic word processing concepts will be introduced using the hands-on approach. Successful completion of this course meets the minimum requirement needed to qualify a student to use one of the college's computers during open lab hours.
- CIS 115 Introduction to Computer-Based Systems (3-0) 3 Cr. Hrs.**
Prerequisite: Computer and keyboarding experience highly recommended.
 In today's world of rapid technological advances, the prevalence of computers in the home and the office increases the demand for computer literacy and competency. The intent of this course is to help you become competent and comfortable in using computers to achieve professionalism in your chosen field of endeavor. A variety of topics will be addressed, such as computer hardware and software, the internet and Web resources, networking and security and mobile computing.
- CIS 120 Software Applications (3-0) 3 Cr. Hrs.**
Prerequisite: Computer and keyboarding experience highly recommended.
 This course is designed to provide hands-on experience with a current office software package for the computer. Emphasis is in the area of word processing, spreadsheets, database management and a presentation software program.
- CIS 122 Microsoft Outlook (2-0) 2 Cr. Hrs.**
Prerequisite: CIS 120 or equivalent.
 This course is designed to provide practical, hands-on experience with Microsoft Outlook. Microsoft Outlook is a flexible messaging and personal information management program used to send and receive e-mail, as well as to manage messages, appointments, contacts and tasks.

- CIS 125 Principles of Information Security (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course examines the field of information security to prepare individuals for their future roles as business decision makers. This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system with appropriate intrusion detection and reporting features. In addition, the course also covers both the managerial and the technical aspects of this exciting discipline and addresses knowledge areas of CISSP (Certified Information Systems Security Professional) certification.
- CIS 129 Introduction to Programming Logic (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This is an introductory programming course where students will learn the fundamentals of program logic and design. Heavy emphasis is placed on program design techniques. Students will develop programs using top-down design, structured programming and modular development methods.
- CIS 170 Microsoft Windows (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course is designed to explore the features of the latest Windows desktop operating system which includes modules such as digital media, electronic messaging, networking, remote assistance, etc. In addition to studying the features that are included in Windows, the class will also emphasize customizing Windows to meet the user's needs. The students will learn to work with the desktop environment, documents and folders, toolbars and taskbar, control panel, file and Web searching tools, help files and computer maintenance and performance optimization tools. It is recommended that students have experience using computers and have proficiency in keyboard and mouse usage.
- CIS 171 Introduction to Networking (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course introduces students to the key concepts of data communications, telecommunications and networking. The course provides a solid introduction to networking fundamentals including key acronyms, protocols and components that are essential to understanding how networks operate today. Upon completion, the student will have a solid understanding of how information travels from a source computer to a destination computer across a complex network.
- CIS 172 Network Security Fundamentals (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 171 or equivalent experience.
 This course is designed to provide students a fundamental understanding of network security principles and implementation. A variety of activities will reinforce the technologies used and principles involved in creating a secure computer network environment.
- CIS 173 Wireless Local Area Networks (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 171 or equivalent experience.
 This course is designed to provide students a fundamental understanding of wireless data communication standards and technologies. It will also provide an overview of various opportunities and markets in the industry. Security aspects of each wireless technology are also explored.

- CIS 176 Visual Basic.NET (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 129 and Windows experience.
 This course is designed to provide students with the knowledge and skills needed to develop applications in Microsoft Visual Basic.NET for the Microsoft .NET platform. The course focuses on user interfaces, program structure, language syntax and implementation details. It is recommended that students have experience using Microsoft Windows before taking this course.
- CIS 178 Technical Microsoft Windows (3-0) 3 Cr. Hrs.**
Prerequisite: Computer experience highly recommended.
 This course is designed to serve the needs of students and information systems professionals who are interested in learning more about the features of the Windows Professional operating system, as well as individuals who are interested in obtaining Microsoft certification on this topic. This course includes real world examples, interactive activities and hands-on projects that reinforce key concepts in preparing for Microsoft certification. It is recommended that students have experience using computers and have proficiency in keyboard and mouse usage.
- CIS 180 Spreadsheet Applications—Current Software (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 120.
 This course addresses the use of spreadsheet applications as a means to solve problems. Students will analyze comprehensive problems and design a worksheet solution that conforms to established criteria and goals. Emphasis is placed on thinking through problems and using a comprehensive host of tools and features in a popular spreadsheet software package to develop logical solutions.
- CIS 185 Introduction to HTML (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides advanced instruction in the most important topics of HTML. The course begins with the basics of creating Web pages with graphics and links, using tables and controlling page layout with frames. Advanced topics covered include cascading style sheets, an introduction to programming with JavaScript and working with JavaScript objects and events. The student is instructed in elements of Web page design. Each student will produce a large-scale multimedia Web page as a semester project.
- CIS 211 Introduction to C++ (2-0) 2 Cr. Hrs.**
Prerequisite: CIS 129 or equivalent.
 This course is an introduction to the C++ programming language. The student will learn the basics of the C++ language up through and including control structures, functions and pointers. This course is intended for those who want a general knowledge of the C++ language.
- CIS 215 Advanced Software Applications (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 120 or written approval of the CIS department. CIS 180 recommended.
 This course is designed for students who have a working knowledge of the computer and word processing, spreadsheet and database packages. Advanced features of the software are developed building on a foundation of a beginning software applications course.
- CIS 221 Advanced C++ (2-0) 2 Cr. Hrs.**
Prerequisite: CIS 211.
 This course is a continuation of the Introduction to C++ programming language course. The student will learn the advanced concepts of the C++ language up through and including operator and function overloading, inheritance, virtual functions, polymorphism, stream I/O, templates, exception handling, file processing and data structures. This course is intended for those who desire an advanced knowledge of the C++ language.
- CIS 223 Introduction to C# (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 129 or equivalent.
 This course is an introduction to the C# programming language. The student will learn the basics of the C# language up through Windows programming and including creating Web server form controls. This course is intended for those who want a general knowledge of the C# language, part of the Microsoft VisualStudio.NET.
- CIS 225 Database Management Systems (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course covers a popular relational database, Microsoft Access, in depth. Emphasis is on creating, editing, sorting, linking and querying databases. Forms, switchboards and custom reports will be created. Advanced topics include designing and creating a complete application system, as well as programming in SQL. Emphasis will also be on understanding the concepts behind database management system design to prepare students to be both users and developers.
- CIS 235 Managing and Troubleshooting PCs (3-0) 3 Cr. Hrs.**
Prerequisite: Windows experience highly recommended.
 Personal computer servicing and support will be covered within the following topics: physical and electrical concepts of motherboards, power supplies, BIOS and expansion buses; definitions and uses of microprocessors (CPUs), memory system resources and input/output devices; data storage devices and interfaces; cables, connectors and ports; basic networking fundamentals; and operating system fundamentals and DOS.
- CIS 238 JavaScript (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 185 or CGT 136 or a basic knowledge of HTML.
 JavaScript is a powerful, object-based scripting language that can be embedded directly into HTML pages. JavaScript allows you to create dynamic, interactive Web-based applications that run completely within a Web browser. This course covers JavaScript as a client-side scripting language.
- CIS 250 Systems Development and Design (4-0) 4 Cr. Hrs.**
Prerequisite: Completed (24) twenty-four credit hours of CIS courses or approval of instructor.
 The student will be made aware of various tools available to the systems analyst in solving business problems. Basic tools are used by the student in the design of a system for a practical business application. Emphasis is placed on the communication between the systems analyst and the other levels of management. "Selling" of new systems and methods is stressed. Detailed steps of each phase of systems design are shown in their relationship to the overall study.

- CIS 251 IT Project Management (3-0) 3 Cr. Hrs.**
Prerequisite: Basic knowledge and/or experience in the field of IT.
 This course presents the fundamental principles, practices and tools necessary to effectively manage Information Technology projects. Nine project management knowledge areas will be applied including integration, scope, time, cost, quality, human resources, communications, risk and procurement. The five process groups—initiating, planning, executing, controlling and closing—will be employed in IT projects. Examples of various Microsoft projects will be utilized to help reinforce some of the concepts.
- CIS 255 Introduction to LINUX (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 170 or equivalent experience.
 This course is designed for students pursuing careers in computer information systems or who are currently in the industry. This is an introductory course that provides an overview of the LINUX operating system. A hands-on approach to common LINUX applications is used. Topics discussed include the LINUX operating system, basic LINUX desktop and terminology, LINUX utilities and basic bash programs.
- CIS 260 Introduction to UNIX (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is designed for students pursuing careers in computer information systems or who are currently working in industry. This is an introductory course that provides an overview of the UNIX operating system. A hands-on approach to common, everyday UNIX applications is used. Topics discussed: the UNIX operating philosophy, basic UNIX commands and terminology, UNIX utilities and an introduction to shell programming.
- CIS 265 Networking 1 (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 235.
 This course is designed to introduce the student to basic computer networking protocols, standards and systems applicable to Local Area Networks (LAN) and Wide Area Networks (WAN).
- CIS 267 Home Technology Integration (4-0) 4 Cr. Hrs.**
Prerequisite: Computer experience recommended.
 This course is designed to introduce the student to networking technologies, audio visual systems, automation methods and telecommunication techniques that converge in integrated home technology. The student will practice installing and maintaining a home networking system.
- CIS 271 Local Area Networks (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 171 or equivalent experience.
 This course begins with the basics of Local Area Networks (LAN) concepts, technologies, components and protocols inherent in today's local area networking environments. Students will see how computers are connected together to form peer-to-peer and server-based networks and discover the functionality and uses of a router, bridge, switch, hub and repeater. The two most commonly used network operating systems today, Microsoft's NT and Novell's NetWare, are also introduced in this course. VLANs and the various forms of Ethernet technology such as Fast Ethernet are also explained.

- CIS 273 TCP/IP and Network Architectures (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 171 or equivalent experience.
 This course introduces students to the key concepts of Transmission Control Protocol/Internet Protocol (TCP/IP). The world's largest network, the Internet, is also one of the world's most powerful communication tools. Students learn the underlying applications, components and protocols of TCP/IP and its necessary link to the Internet and how to identify TCP/IP layers, components and functions. Navigation tools, TCP/IP services and troubleshooting methodologies are also reviewed.
- CIS 276 Networking 2 (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 265.
 This course is designed to follow the introduction to networking (Networking 1) course. Students will learn LAN configurations and protocols. Installation, management and troubleshooting Microsoft Windows server on a local area network will be covered. Additional topics on hardware, clients, domains, user accounts and printers will be covered.
- CIS 290 Object-Oriented Programming With Java (3-0) 3 Cr. Hrs.**
Prerequisite: CIS 129 or equivalent.
 This course provides an introduction to object-oriented programming using Java. Students will develop real world application programs and Web-based applets based on object-oriented programming concepts including encapsulation, inheritance and polymorphism.

COMPUTER SERVICE

- COMPS 124 Introduction to Personal Computers and Software (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is designed to introduce the student to the hardware and software aspects of the personal computer. The student will learn to identify the key components of the computer. Numbering systems, digital logic, memory devices, digital circuits and systems will be introduced to the student. An introduction to operating systems will be covered. The student will learn how a computer operates and how data is organized on a hard drive, how to format disks and how to transfer data.
- COMPS 126 Technical Programming (3-0) 3 Cr. Hrs.**
Prerequisite: Computer and keyboarding experience highly recommended.
 This course will introduce the student to the steps involved in writing a Windows program using the Visual Basic programming language. The course focuses on user interfaces, program structure, language syntax and implementation details. The student will also use the computer as a tool in problem solving.
- COMPS 147 Computer and Peripheral Maintenance and Management (2-2) 4 Cr. Hrs.**
Prerequisite: COMPS 124.
 This course is designed to introduce the student to PC and peripheral maintenance and management. The student will learn how to maintain, upgrade and support a PC system. System improvement will center on topics of hardware, as well as software. Students will examine proper system and component care, failure-prone items, and how to isolate, locate and identify a failing component within the PC system.

CORRECTIONAL SCIENCE

COR 110 Introduction to Corrections (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course blends theory and operational knowledge for corrections. Students learn about the early development of corrections, sentencing, prisons, probation, parole, prisoner rights, community corrections, the role of the correctional officer and current concerns.

CRIMINAL JUSTICE

CJ 102 Organization and Administration of Law Enforcement Agencies (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course will provide the student with an overview and understanding of law enforcement management and supervision to include an historical perspective and appropriate applications. Students will be exposed to managerial processes with regard to communication, decision making and problem solving that enable managers to effectively train and motivate subordinates. This course will identify how law enforcement managers effectively handle discipline, complaints, grievances, conflict and stress. This course will further identify how managers deploy resources, improve productivity and utilize performance appraisals and evaluations. Students will analyze challenges in managing law enforcement agencies in a changing environment.

CJ 104 Introduction to Security (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course examines the systems and organization of security with primary emphasis on the private sector. You will learn about the role of security within society, contemporary issues in security including legal authority, enhancing forms of physical security and security in multiple industries and institutional settings. Finally, we will evaluate the challenges and standards of the modern security profession and its expanding responsibilities.

CJ 107 Police Field Operations (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a practical study of purposes, methods, types and means of law enforcement patrol, accident prevention and effective traffic control interviewing techniques. Students will learn about crimes in progress, stress survival and use of force. Training will be received on proper methods of conducting preliminary investigations, unlawful assembly and riot control.

CJ 113 Introduction to Criminal Justice System (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course covers the overall system of criminal justice from crime detection to the release and revocation of prisoners. The student will examine the role of law enforcement officers, corrections officers, probation officers, defense attorneys, prosecutors and judges as they relate to the defendant. The student will analyze the components of the system (law enforcement, courts and corrections) with emphasis on their interrelationships and expectations.

CJ 201 Criminal Investigation (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a study of criminal investigation techniques of surveillance, collection, recording and preservation of evidence. Students will study the analysis of evidence and use of science laboratories. This course will be conducted in cooperation with other law enforcement agencies.

CJ 209 Basic Criminalistics (2-2) 3 Cr. Hrs.

Prerequisite: None.

This course acquaints students with proper techniques of criminalistics. Students will have an opportunity to perform investigations in simulated crime scene situations using scientific investigative techniques involving collection, presentation and interpretation of physical evidence.

CJ 211 Criminal Law and Procedure (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a study of the elements of criminal law, its purposes and function. The course will focus on the laws of arrest, search and seizure, rights and duties of officers and citizens. Students will study the elements necessary to establish crime and criminal intent, sources of criminal law, criminal responsibility and general court procedures.

CJ 212 Criminology (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to identify the theories of crime causation, behavioral systems in crime (organized white collar crime) and the nature and extent of crime. Emphasis will be given to law as social control, history and philosophy of punishment and contemporary correctional techniques.

CJ 221 Juvenile Justice (3-0) 3 Cr. Hrs.

Prerequisite: None.

The purpose of this course is to study problems of juvenile delinquency and the theories that explain juvenile delinquency. Attention will be given to the work of youth agencies, legislative involvement and new approaches to the prevention of juvenile crime.

CJ 287 Police Academy (13-40) 21 Cr. Hrs.

Prerequisite: Consent of department before acceptance to the Police Academy.

This course is designed to prepare recruits in the proper techniques of investigation, crime scene process, patrol procedures, operations and techniques. Emphasis will be placed on conflict mediation, report writing, detention and prosecution of prisoners. First aid, investigations, evidence collection, disaster control, civil disorders and tactical operations will be covered in the course. (40 hrs. minimum weekly)

CULINARY ARTS

CAP 102 Culinary Sanitation (2-0) 2 Cr. Hrs.

Prerequisite: None.

This course introduces the theory and practice of sanitation and safety and their relationship to the hospitality industry. Topics include the study of food-borne illnesses; biological, chemical and physical hazards; and cross-contamination as they may occur during the flow of food, personal hygiene, sanitation and safety regulations and the use and care of equipment. Hazard Analysis Critical Control Point (HACCP) and OSHA (Occupational Safety and Health Administration) guidelines and standards as they apply to the hospitality industry will be introduced. The student will be prepared to take the National Restaurant Association Sanitation Certification exam upon completion of this course.

CAP 103 Introduction to Professional Cooking Skills and Technique (5-0) 5 Cr. Hrs.

Prerequisite: CAP 102 or current ServSafe certification.

This course will provide aspiring chefs a broad orientation to the culinary industry so that they will better understand what is required to succeed. Emphasis for discussion will be on professionalism, safety and sanitation standards, equipment identification, identification of food products, knife handling skills and a basic understanding of stock making and basic cooking techniques. Students will be required to purchase an initial set of 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.

CAP 124 Breakfast and Pantry (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

This course will teach students all the necessary procedures and principles in basic cooking skills as related to breakfast and pantry cookery. Topics covered are egg, potato, meat and cereal cookery. Buffet setups and recipe procedures will be taught. Pantry cookery skills will include basic pantry operation, simple and composite salads, salad dressings, fruit trays and cold sandwich preparation.

CAP 125 Pastries 1 (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

This course will teach students all the necessary procedures and principles in the art of creating and producing many variations of beginning pastries. Upon successful completion of the course, the student will be able to use measuring equipment and understand equivalents and conversions; understand and know proper usage of baking and pastry terminology; properly use hand tools and machinery; regulate and use an oven properly; understand health, safety and sanitation of work areas; make pies, puddings, pastries, cakes and tortes.

CAP 128 Introduction to Food Techniques (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

This course will teach the basic fundamentals of cooking techniques. The student will understand the methods of basic sauces, stocks, coulis and soup preparation. The student will also learn to apply the appropriate cooking methods for specific cuts of meat, fish, poultry and game. Vegetable and starch cookery will also be included. Specialty cuisines will also be explored, which will include nutritional, vegetarian, vegan and live foods.

CAP 142 Butchery (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

Students will learn commercial meat preparation, its fabrication, portion control and the importance of safe sanitary butchery practice. Students will select and prepare quality meats, fish and poultry for industry consumption and retail use. Students will be prepared to perform these important tasks in a safe and sanitary environment.

CAP 143 Dining Room Service (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

Upon successful completion of the course, the student will be able to apply dining room procedures which include identifying the seven service types, basic hot and cold beverage services, professional ethics, good self image, dependability, attitude, dedication, understanding the art and science of employee relationships and the value of customer relationships.

CAP 144 Baking (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103.

This course explores the concepts of the different varieties of flour, the purpose and chemical reaction of other ingredients in yeast doughs and quick breads, the nutritional value of baked goods, how to use equipment for baking, proofing and fermentation of yeast products, the different mixing methods, how to increase standard recipes and costing out a recipe. In addition, students will develop hands on practical experience with bakery products by producing French breads, rolls, pan breads, rye breads, whole wheat breads, corn bread, Danish pastry, coffee cakes, muffins, biscuits, quick breads and cookies.

CAP 191 Externship (1-15) 3 Cr. Hrs.

Prerequisite: This is an elective course and requires departmental approval for enrollment.

This course is designed to give the student additional work experience in a first hand quality run establishment. This will be done by rotating through various work stations. A weekly log book will be generated and reviewed to track the students' progress. The instructor will do a skill assessment based on the written project at the end of the semester.

CAP 215 Charcuterie (4-0) 4 Cr. Hrs.

Prerequisite: CAP 103 and all core CAP 100 level courses.

Students in this course will acquire professional skills in variations of hors d'oeuvres and savories, seasonings, condiments, stuffed meats, curing, pickling, and smoking of meat, fish and poultry. Proficiencies in sausage-making, garde manger, pâtés, terrines, galantines and stuffed meats are also taught.

CAP 227 Restaurant Cooking and Preparation (4-0) 4 Cr. Hrs.*Prerequisite:* CAP 103 and all core CAP 100 level courses.

Students will participate in four workstations: Roast—Grill, Sauté, Entremetier (middle station) and Garde Manger—Pantry. Students will learn classical and modern cooking techniques, recipe development, importance of consistency and clean work methods.

CAP 240 Pastries 2 (4-0) 4 Cr. Hrs.*Prerequisite:* CAP 103 and all core CAP 100 level courses.

This course will cover the more intricate methods of producing fine pastries, mousses, cakes, tortes, ice cream desserts and chocolate work. The instruction covers recipe expansion and plate presentations.

CAP 241 Culinary Nutrition (2-0) 2 Cr. Hrs.*Prerequisite:* None.

Lectures on nutrition and nutrition's relationship to heart disease, cholesterol levels and body metabolism are supported by actual meal preparation. Students will learn how to apply sound nutritional theories. The course stresses preparation of healthful foods that are pleasing to both the eye and the palate in order to cater to the growing number of health-minded customers.

CAP 242 À la Carte (4-0) 4 Cr. Hrs.*Prerequisite:* CAP 103 and all core CAP 100 level courses.

Upon successful completion of this course, the student will be able to apply modern techniques in the preparation and presentation of food using sauté and grill techniques. Students will gain an understanding of the entremetier, garde manger and food storage stations. Proper lock-down and clean up procedure will be taught. Preparation and presentation of salads, cold meats, sandwiches as well as plate presentation will also be taught.

CAP 243 Storeroom Operations (3-0) 3 Cr. Hrs.*Prerequisite:* CAP 103 and all core CAP 100 level courses.

Upon successful completion of this course, the student will have a basic knowledge of purchasing, receiving and inventory control through the use of the computer and the application of computer software which will enhance his/her ability to run a more effective and profitable kitchen operation.

CAP 244 International and American Cuisine (8-0) 8 Cr. Hrs.*Prerequisite:* CAP 103 and all core CAP 100 level courses.

Students will learn the culture, history and terminology of various American regional and international cuisines. In addition, they will study traditional and contemporary cooking techniques. Students will prepare à la carte service entrees, salads, appetizers, soups and desserts based on industry trends as well as preparing buffet presentations. The menu items will be offered to the public and served in the American Harvest Restaurant.

CAP 247 Banquets and Catering (2-2) 3 Cr. Hrs.*Prerequisite:* CAP 103.

Upon successful completion of this course, the student will demonstrate knowledge of a variety of catering operations including planning, organizing, marketing and executing receptions, parties and special events. Students must participate in two events. This is an elective course.

CAP 260 Competitive Ice Carving (2-2) 3 Cr. Hrs.*Prerequisite:* None.

This course will present safety procedures related to ice handling, tools and equipment used in ice carving. Qualities of carving ice, proper care and sharpening of tools are also covered. Use of templates and production of basic carvings will be accomplished. This is an elective course.

CAP 265 Advanced Competitive Ice Carving (1-3) 3 Cr. Hrs.*Prerequisite:* CAP 260 or consent of department.

Advanced carving ability incorporating joining, assembling and multi block will be covered. This course is for students who wish to further their culinary artistry by entering individual or team competitive ice carving events. This is an elective course.

CAP 267 Chocolatier (4-0) 4 Cr. Hrs.*Prerequisite:* CAP 103 and CAP 125 or consent of department.

This course is designed to introduce the student to the handling techniques of chocolate. Students will learn to use artistic pieces to decorate cakes and adorn pastry buffets. Students will also be exposed to modeling and sculpting of chocolate centerpieces and chocolate truffle making. This is an elective course.

CAP 295 Salon Competition 1 (2-2) 3 Cr. Hrs.*Prerequisite:* Selection to participate is approved by the Chef Instructors.

Students will participate in a class which will build and refine their culinary skills. This first course will introduce the students to the requirements necessary to successfully compete in culinary competition. Students selected for this class may form the College Culinary Team. A number of field trips and training sessions, off campus, will be scheduled. This is an elective course.

CAP 297 Salon Competition 2 (2-3) 4 Cr. Hrs.*Prerequisite:* Approval to participate is made by the Chef Instructor and satisfactory completion of CAP 295.

A continuation of Salon Competition 1 for students who have decided to compete at state, national and/or international level culinary competition(s). The students must have demonstrated proficiency for competition in Salon Competition 1 to be approved as participants in this advanced course. Selected students form a College Culinary Team and, as such, can represent Schoolcraft College in culinary competition(s).

CULINARY BAKING AND PASTRY ARTS

CBPA 103 Introduction to Baking and Pastry Skills and Techniques (2-0) 2 Cr. Hrs.*Prerequisite:* CAP 102.

This course will provide a broad orientation to aspiring bakers and pastry chefs in order to offer a better understanding of the specialized fields of baking and pastry. Discussions will include professionalism, safety and sanitation, equipment identification, function and maintenance. The fundamental baking processes, handling and function of ingredients will also be covered.

CBPA 125 Pastries (5-15) 20 Cr. Hrs.*Prerequisite:* CBPA 103.

Upon successful completion of this course, students will have acquired professional skills in the art of pastry including recipe expansion and costing, use of hand tools and equipment, safety, sanitation and organization skills. Products introduced to the aspiring students include pies and tarts; French pastry; individual pastries; classical and contemporary tortes; warm, cold and frozen desserts; contemporary plated desserts; miniature pastries; chocolates; cake decoration; and decorative centerpieces.

CBPA 144 Baking (3.75-11.25) 15 Cr. Hrs.*Prerequisite:* CBPA 103.

Upon successful completion of this course, students will have acquired professional skills in the art of baking. This course will cover basic elements including costing out recipes, expanding and reducing recipe sizes, proper usage of bakery equipment, using straight dough methods to produce French baguettes, soft and hard rolls, pan breads and many hearth breads, as well as production of various cookies, quick breads, muffins and biscuits. Advanced techniques will be taught including fermentation processes and how they contribute to flavor, mixing methods, the functionality of ingredients, and the study of various flours, as well as chemical reactions that take place while baking. The production of artisan breads, laminated doughs, savory baked goods, specialty baked goods, breakfast pastries, high ratio cakes and decorative centerpieces will be important aspects of this course.

CULINARY MANAGEMENT
CM 107 Culinary Management—Food and Culture (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is a cross cultural, interdisciplinary investigation in the relationships between the foods humans prepare and consume and the cultures they build. The course will demonstrate the ways intellectual, social, religious and political events affect the preparation of food in various civilizations and at various periods in human history.

CM 109 Hospitality Law (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course provides students with an overview of the general concepts of law as it relates to the hospitality industry. Contract, property, employee, guest, insurance, food and beverage responsibility and business operating structure issues will be covered. The emphasis will be on restaurant law, but applicability to other aspects of hospitality law, such as catering and hotel management, will be explored.

CM 203 Restaurant Concepts and Design (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will explore new concepts for the entrepreneur in the restaurant industry. New trends and restaurant décor along with facility layout and design will be emphasized.

CM 210 Wine and Spirits (3-0) 3 Cr. Hrs.*Prerequisite:* Students must be at least 18 years of age to take this course [MCL 436.1703 Section 703, (10)].

This course will provide comprehensive, detailed information about the origins, production and characteristics of all types of alcoholic beverages, including beer, wine and distilled spirits, such as whiskies and brandies. Attention will be given to table, sparkling and dessert wines. The student will gain an understanding of regional beverage styles of North America, the British Isles, France, Italy, Germany, the Iberian Peninsula and the Southern Hemisphere. Production practices and regulations, climatic and political influences, beverage characteristics and deductive evaluation methods will be studied. This is an elective course.

DESIGN
DSGN 180 Machine Elements and Design (3-2) 4 Cr. Hrs.*Prerequisite:* CAD 106 and MATH 113.

This course is designed to introduce the student to the various machine elements and the mechanical/working relationship between elements that make up a mechanism. The machine element concepts covered include fasteners, gears, cams, linkages and bearings. The introduction to the design process includes problem definition, needs analysis, design/performance objectives, cost analysis, design alternatives, feasibility analysis and design selection.

DSGN 250 Tool, Die and Fixture Design (2-4) 4 Cr. Hrs.*Prerequisite:* CAD 107, DSGN 180 and CAD 211 or CAD 221.

Tool, Die and Fixture Design is a specialized phase of mechanical or manufacturing engineering. This course will cover the development of jigs and fixtures, work holding devices and press working tools such as cutting dies, piercing dies, forming dies and drawing dies. Emphasis is placed on the types of tools, supporting and locating principles, clamping methods, construction methods, theory of metal cutting and metal forming. Design projects are used to reinforce theory and to provide an opportunity to gain practical experience. Sketching and CAD will be used to develop, create and design customs jigs, fixtures, dies and die types. ANSI/ASME Standards are followed for the creation of solid models, multi views, drawings, tolerances and dimensioning practices.

DSGN 280 Capstone Project (3-2) 4 Cr. Hrs.*Prerequisite:* MET 102, MET 114, MFG 105, CAD 107 and DSGN 180 or consent of instructor.

This course utilizes a multidiscipline capstone project to integrate the concepts of design, manufacturing and material science. Working as a team, a design problem will be presented requiring solutions which involve the management of the design process using the systematic engineering design process. The steps include project planning, research, modeling, analysis, prototype building, process mapping and material selection. The results of the project will be reported in written and oral format and presented to a panel for evaluation. Faculty directed study will be provided.

ECONOMICS

ECON 103 Introductory Economics (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of the macroeconomic concerns of national income determinations, business cycles, unemployment, inflation and both fiscal and monetary policies to stabilize the aggregate economy. In addition, this course explores the microeconomic fundamentals of demand, supply, elasticity, consumer choice, the production costs of output and resource allocation of firms operating under various market structures and the international economy.

ECON 201 Principles of Macroeconomics (4-0) 4 Cr. Hrs.

Prerequisite: MATH 053 or equivalent.

Macroeconomics refers to that portion of economic analysis which is concerned with behavior of economy-wide issues, e.g., inflation, unemployment, etc. By means of theoretical reasoning and empirical research, economists have identified a number of relationships or principles which are useful in explaining and predicting macroeconomics, their application to an understanding of current economic problems and their implication for economic policy. The intent of the course is to provide the student with a basic level of economic literacy essential for a well-informed citizenship in the years ahead. In economics, perhaps more than any other comparable discipline, things are not always what they appear to be. Indeed, many economic problems both past and present have resulted from the misunderstanding of fundamental economic relationships.

ECON 202 Principles of Microeconomics (4-0) 4 Cr. Hrs.

Prerequisite: MATH 053 or equivalent.

This course provides students with an introduction to the theory of consumer behavior, production theory, market structure in product and resource/factor markets and microeconomic policy.

EDUCATION

EDUC 101 Introduction to Education (3-0) 3 Cr. Hrs.

Prerequisite: College-level writing and reading.

This is an introductory course for prospective education majors, designed to explore the teaching profession. Students will gain insight into the practical elements of becoming an educator through an overview of the foundational philosophies of education, best practices, classroom management, education law and policies and trends. Students will be introduced to Michigan standards and requirements for teacher certification. Additionally, students will have actual experience in the classroom.

EDUC 201 Capstone—Portfolio Preparation (1-0) 1 Cr. Hrs.

Prerequisite: EDUC 101.

This course concludes the Pre-Education Program with the student's development of his/her admission portfolio for a prospective transfer university. Students will review their college learning experience as they collect, organize and reflect upon evidence that demonstrates their attitudes, skills, knowledge and abilities in the sciences, mathematics and general education areas, according to the requirements of the transfer institution.

ELECTRONIC TECHNOLOGY

ELECT 131 Basic Measurement and Reporting Skills (1-2) 3 Cr. Hrs.

Prerequisite: None.

This course is designed for students who are pursuing a career in electronics or electronic related fields. The student will receive instruction on how to conduct career research and in the proper use of basic measuring instruments, such as the Digital Multimeter (DMM), the Volt-Ohm Meter (VOM), the sine wave generator and the oscilloscope. In the electronics laboratory, the student will make measurements, record data, maintain a logbook and develop conclusions based on the results. In the computer laboratory, students will learn how to organize and report their findings utilizing word processing, spreadsheet and presentation software.

ELECT 133 Introduction to Battery Technology (3-0) 3 Cr. Hrs.

Prerequisite: None.

Understanding batteries in today's commercial applications is becoming increasingly important. Batteries provide a means of storing energy for use in portable electronic devices ranging from personal entertainment to advanced medical, industrial applications, as well as a means to reduce emissions in electric and hybrid electric vehicles. The need to derive energy from solar, wind and other renewable forms of energy and store it underscores the importance of advanced energy storage solutions to the emerging global economy. This course will cover the principles and operation of batteries. The contrast between secondary and primary batteries will be studied. Specialized battery systems as well as fuel cells will also be covered.

ELECT 137 DC Circuits and Mathematical Modeling (2-3) 5 Cr. Hrs.

Prerequisite: MATH 053 or one year of high school algebra.

Corequisite: ELECT 131.

This course is the study of basic DC Fundamentals and mathematical modeling for the electronics careers which includes Ohm's law, power law and Kirchhoff's laws with application to solving series, parallel and series-parallel combination circuits. Other topics will include resistors, color code, magnetism, electromagnetism and test equipment. The mathematics skills needed for an electronics career will also be covered in this course. The student will be prepared to enter the second semester course of ELECT 138 AC Fundamentals and Mathematical Modeling. Laboratory experiments and project(s) are utilized to teach the use of test equipment and to demonstrate the principals taught in lecture.

ELECT 138 AC Circuits and Mathematical Modeling (2-3) 5 Cr. Hrs.

Prerequisite: ELECT 137.

This course is designed to explore the theory and application of AC Fundamentals. Sine wave generation and analysis will be studied. The theory of Kirchhoff's laws will be used to solve AC series, parallel and series-parallel circuits using the method of phasors. Other topics covered include capacitors, inductors, transformers, resonance, passive filters, RC and RL circuits. Laboratory experiments are utilized to teach the use of common test equipment and to demonstrate the principals taught in lecture.

ELECT 139 Diodes and Transistors (1-2) 3 Cr. Hrs.*Prerequisite:* None.*Corequisite:* ELECT 138.

This course will introduce the students to various semiconductor devices starting with a discussion of internal construction, followed by circuit configurations, applications and troubleshooting techniques. Diodes will be discussed first and will include signal, rectifier, Zener and light emitting types. Transistor material will cover NPN and PNP bipolar types, J type FETs, enhancement and depletion MOSFETs. Finally, transistor switching circuits will be examined.

ELECT 144 Introduction to Microcontrollers (1-2) 3 Cr. Hrs.*Prerequisite:* Computer and keyboarding experience are highly recommended.

This course will introduce the student to the concepts of microcontroller architecture, block components, numbering systems and microprocessor program editing software. Representative microcontroller commands and elementary programming of a microcontroller will be studied. Students will work with hands-on experiments, which they will learn to expand and customize for their personal needs.

ELECT 145 Fluid Power (2-2) 4 Cr. Hrs.*Prerequisite:* MATH 053 or equivalent.

This course emphasizes the understanding of the fundamentals of hydraulics and pneumatics. In this course, students will design, analyze, operate and maintain fluid power systems. Emphasis is placed on understanding the physics of fluids and how energy, power and force affect the devices that make up a hydraulic and pneumatic system.

ELECT 180 LabVIEW Programming CORE 1 and 2 (2-3) 5 Cr. Hrs.*Prerequisite:* Computer and keyboarding experience highly recommended.

This course will introduce the student to the programming concepts, techniques, features and functions involved in writing a LabVIEW program. The student will learn to create programs used in test and measurements, data acquisition, instruments control and data logging. The course focuses on user interfaces, program structure, language syntax and implementation details.

ELECT 215 Operational Amplifiers and Linear Integrated Circuits (2-2) 4 Cr. Hrs.*Prerequisite:* ELECT 139.

This course will introduce the student to operational amplifiers (op amp) and linear integrated circuits. Op-amp circuit configurations, applications and troubleshooting techniques will be presented. Operational amplifiers will be presented with emphasis on applications and circuits such as inverting and non-inverting amplifiers, integrators, differentiators and filters. The coverage of linear integrated circuits includes voltage comparators, timers, oscillators, voltage regulators special purpose amplifiers, communication circuits and data conversion circuits.

ELECT 218 AC/DC Motors (1-2) 3 Cr. Hrs.*Prerequisite:* ELECT 137.*Corequisite:* ELECT 138.

This course is designed to provide the student with a comprehensive understanding of motors used in industry. Principles and theories of magnetic fields and mechanical rotation will be covered. Basic through complex theories of rotor phase angles and effects on torque will be discussed. Magnetic and inductive theories, characteristics of various types of motors and speed control used in DC and AC type motors will be studied.

ELECT 219 Digital Logic Circuits (2-2) 4 Cr. Hrs.*Prerequisite:* ELECT 139.

This course introduces students to Boolean algebra (emphasizing NAND and NOR) and various medium scale integrated circuits like exclusive or encoders, decoders, multiplexers, adders, counters and shift registers. Also explored are memory (core, RAM and ROM) and bidirectional line drivers. The laboratory work coincides with experiments utilizing digital integrated circuits.

ELECT 228 Electronic Troubleshooting (1-2) 3 Cr. Hrs.*Prerequisite:* ELECT 215 and ELECT 219.

This course is a capstone which will apply the theory and practical application of the preceding electronics courses. The techniques of fault isolation and troubleshooting in solid state, analog, digital, motors and biomedical equipment and systems will be explored.

ELECT 251 Programmable Logic and Industrial Controls (2-2) 4 Cr. Hrs.*Prerequisite:* Windows experience highly recommended.

The student will use Programmable Logic Controller (PLC) and Allen-Bradley RSLogix software to convert typical hardwired electrically controlled circuitry used in industry to a computer-controlled system. Emphasis will be placed on understanding the purpose and operating features of a PLC including input/output addressing and associated commands used in the PLC program. A computer will be used to write and download a program to be tested for logical control. The student will use Linx software and networking to learn communication procedures for downloading a PLC program to the controller as well as the types of cable connections used. PanelView will be reviewed to understand its real time monitoring capability of the software. Various PLC commands will be used including internal relays, ON and OFF timers, UP and DOWN counters, subroutines, program control and math instructions.

ELECT 252 Programmable Logic System Design (2-2) 4 Cr. Hrs.*Prerequisite:* ELECT 251 or equivalent PLC experience.

The student will use Allen-Bradley RSLogix 500 software to be interfaced with RSLinx communication software and PanelView for control panel applications. Data Highway Plus will be used for network communications with other Programmable Logic Controllers (PLC) components. Emphasis will be placed on incorporating and combining programming commands, timers, counters, subroutines, data manipulation and mathematics into control process systems. Installing, wiring and networking PLC systems will be covered. Students will learn how to use troubleshooting features of the PLC software to find and diagnosis hardware, configuration and programming problems.

ELECT 253 Individual Student Projects (1-2) 3 Cr. Hrs.

Prerequisite: By midterm of the previous semester, the student must submit a written proposal for approval by department.

Students will plan, organize, assemble or fabricate and test the project of their choice or one suggested by the instructor. Under guidance of the instructor, the electronic laboratory will be made available three hours a week in which time the student may perform tests.

EMERGENCY MEDICAL TECHNOLOGY

EMT 115 Emergency Medical Technology—Basic (7-6) 10 Cr. Hrs.

Prerequisite: None.

The Basic Emergency Medical Technician course is a Michigan Department of Community Health 264.5 hour-approved course that provides the information and experience necessary to prepare the student to take the National Registry Basic EMT Certification Exam. Students learn the role and responsibilities of an emergency medical technician in providing emergency care. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and experience that will be gained in a clinical and/or internship setting.

EMT 120 Emergency Medical Technology—Specialist (4-3) 5.5 Cr. Hrs.

Prerequisite: EMT 115.

Emergency Medical Technology-Specialist is an approved course that provides the information and experience necessary to prepare the student to take the National Registry of Emergency Medical Technician-Intermediate Licensing Examination. All procedures for the course are evaluated by a physician advisor. This course is designed to teach students how to deal with more complex medical emergency situations than are handled in the basic EMT course (EMT 115). Students develop advanced skills in diagnosis and emergency treatment short of those rendered by physicians or by allied health personnel under the direct supervision of the physician.

EMT 210 Paramedic Technology 1 (8-4) 10 Cr. Hrs.

Prerequisite: EMT 115.

This course provides the information and experience necessary to prepare the student for EMT 220. In addition, the EMT 210 course is designed to give students extensive practical application along with the knowledge and skills acquired in the EMT and/or Specialist class. This course includes advanced practice with a focus on preparatory entry-level paramedic skills. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and practical experience that will be gained in the clinical setting. This course is a Michigan Department of Community Health EMS and Trauma Systems section approved program leading to licensing as an Advanced Emergency Medical Technician-Paramedic; Michigan Department of Community Health EMS and Trauma Systems section course. The student will be eligible for the National Registry Examination upon successful completion of all three semesters of the Paramedic Program.

EMT 220 Paramedic Technology 2 (8-5) 10.5 Cr. Hrs.

Prerequisite: BIOL 236 and EMT 210.

This course provides the information and experience necessary to prepare the student for EMT 230. In addition, the EMT 220 course is designed to give students extensive practical application along with the knowledge and skills acquired in the EMT 210 course. This course outline includes advanced practice with a focus on patient assessment and medical emergencies. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and practical experience that will be gained in the clinical setting. This course is a Michigan Department of Community Health EMS and Trauma Systems section approved program leading to licensing as an Advanced Emergency Medical Technician-Paramedic; Michigan Department of Community Health EMS and Trauma Systems section course. The student will be eligible for the National Registry Examination upon successful completion of all three semesters of the Paramedic Program.

EMT 230 Paramedic Technology 3 (6-6) 9 Cr. Hrs.

Prerequisite: EMT 220.

This course provides the information and experience necessary to prepare the student for the National Registry Examination. In addition, the EMT 230 course is designed to give students extensive practical application along with the knowledge and skills acquired in EMT 210 and 220. This course outline includes advanced practice with a focus on patient assessment and traumatic emergencies in addition to dealing with patients with special considerations. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and practical experience that will be gained in the clinical and internship setting. This course is a Michigan Department of Community Health EMS and Trauma Systems section approved course leading to licensing as an Advanced Emergency Medical Technician-Paramedic; Michigan Department of Community Health EMS and Trauma Systems section leading to licensing as an Advanced Emergency Medical Technician-Paramedic. The student will be eligible for the National Registry Examination upon successful completion of all three semesters of the Paramedic Program.

ENGINEERING

ENGR 100 Introduction to Engineering and Technology (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to introduce students to the fields of engineering and engineering technology. Students will learn about the different engineering disciplines and will participate in projects related to engineering. Electronic portfolios will be introduced in this course.

ENGR 201 Statics (3-0) 3 Cr. Hrs.

Prerequisite: PHYS 211.

This course is designed to teach the student vector analysis of forces and moments in two- and three-dimensions. Equilibrium of particles and rigid bodies will be determined. Beams and trusses will be analyzed. Problems involving friction, center of gravity, moments of inertia and virtual work will be solved. This course is designed as an engineering transfer course. Transferability of this course into the desired engineering program should be confirmed with the transfer office.

ENGR 202 Mechanics of Materials (3-0) 3 Cr. Hrs.*Prerequisite:* ENGR 201.

This course is designed to teach the students the fundamental concepts related to stress and strain of deformable bodies and their application to mechanical structures. This course is designed as an engineering transfer course. Transferability of this course into the desired engineering program should be confirmed with the transfer office.

ENGR 203 Dynamics (4-0) 4 Cr. Hrs.*Prerequisite:* ENGR 201.

This course is designed to teach the student kinematics and kinetics of particles and rigid bodies including methods of motion relative to translating and rotating reference frames, force and acceleration, work and energy, impulse and momentum and vibrations. This course is designed as an engineering transfer course. Transferability of this course into the desired engineering program should be confirmed with the transfer office.

ENGLISH**ENG 050 Modern English Grammar (3-0) 3 Cr. Hrs.***Prerequisite:* None.

This is the first of a two-part sequence (ENG 050/055) designed to prepare students for composition courses. The course content focuses on major grammatical concepts and writing. A grade of 2.0 or better in ENG 050 is necessary to enter ENG 055.

ENG 055 Building Writing Skills (3-0) 3 Cr. Hrs.*Prerequisite:* Satisfactory placement test score or minimum grade of 2.0 in ENG 050 or ESL 052.

This is the second of a two-part sequence (ENG 050/ENG 055 or ESL 052/ENG 055) designed to prepare students for composition courses. The course focuses on the writing process, paragraph development, revision and essay structure. A grade of 2.0 or better in ENG 055 is necessary to enter ENG 101.

ENG 100 Communication Skills (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course deals with a variety of written and oral communication skills. Students learn about the application of interpersonal and intrapersonal communication, including but not limited to presentations, interviews, collaborative work and technological tools as used in personal, social and career communications.

ENG 101 English Composition 1 (3-0) 3 Cr. Hrs.*Prerequisite:* Satisfactory high school English background or ENG 055 with a minimum grade of 2.0.

This course teaches students to prepare and write a number of clear, well-developed essays using exposition and other rhetorical modes. This process assists students to build writing strategies and methodologies for college and professional writing.

ENG 102 English Composition 2 (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 101 with a minimum grade of 2.0.

This course teaches students to conduct and integrate research and write the research paper. This process assists students in developing research and writing strategies to use in a variety of college and professional contexts.

ENG 106 Business English (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 100 or ENG 101 with a minimum grade of 2.0 and basic computer skills.

This course examines verbal and nonverbal communication theories and methods relating to business. Students write business documents and apply a variety of methods for collecting and presenting data.

ENG 107 Introduction to Journalism (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 101 with a minimum grade of 2.0 or consent of instructor.

ENG 102 recommended.

This course is an introductory survey of mass media such as newspapers, magazines (print and online), radio, TV, advertising, public relations and the World Wide Web. The course will emphasize newspapers and magazines while recognizing news and feature values, discovering audience, reporting, writing and planning content and format.

ENG 116 Technical Writing (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 100 or ENG 101 with a minimum grade of 2.0.

This course provides practical instruction in speaking, listening and technical writing for business and industry. Students learn to apply the principles of organizational structure, resume writing, job hunting, interviewing and technical reporting.

ENG 170 Modern Literature By and About Women (3-0) 3 Cr. Hrs.*Prerequisite:* None.

Reading and discussion of fiction, poetry, drama and prose by women writers of the 20th and 21st centuries. Students use literary analysis to explore women's literature as well as the experiences, roles, and art of modern women and women writers.

ENG 200 Introduction to Film (4-0) 4 Cr. Hrs.*Prerequisite:* ENG 101 with minimum grade of 2.0 or consent of instructor.

ENG 102 recommended.

This course studies how film accomplishes its purposes, whether as simple entertainment, social commentary or complex art. Students will view and discuss selected films and explore the history, criticism, aesthetics and technique of film.

ENG 203 Children's Literature (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 101 with minimum grade of 2.0 or consent of instructor.

ENG 102 recommended.

This course surveys literature for children and adolescents in K–12 curriculum. By reading, analyzing and researching various genres of children's literature throughout the world, students gain a historical perspective and establish standards of critical evaluation.

ENG 205 Creative Writing (3-0) 3 Cr. Hrs.*Prerequisite:* ENG 101 with minimum grade of 2.0 or consent of instructor.

ENG 102 recommended.

Student creative writing may include work in poetry, short stories and drama. Some assignments will reflect student interests and abilities, while others may encourage students to expand their skills and discover new topics. Class activities will include critical evaluation of student work in individual conferences and writing workshops.

ENG 206 Creative Writing (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

Student creative writing may include work in poetry, short stories and drama. Some assignments will reflect student interests and abilities, while others may encourage students to expand their skills and discover new topics. Class activities will include critical evaluation of student work in individual conferences and writing workshops. The course may include work on individual writing projects.

ENG 221 Advanced Composition (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

This course provides advanced composition theory and practice for students to develop writing skills beyond ENG 101 and ENG 102. It emphasizes the writing process, revision strategies and standard research techniques. It also encourages peer collaboration and evaluation to reflect professional writing.

ENG 243 Introduction to Literature—Short Fiction (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

Using elements of fiction, this course develops standards for critical evaluation to increase understanding and appreciation of short stories. Students read and analyze short fiction and its forms from early to modern times.

ENG 244 Introduction to Literature—Poetry (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

This course develops standards for critical evaluation to increase the understanding and appreciation of poetry. Students read and analyze poetry and its forms from early to modern times.

ENG 245 Introduction to Literature—Drama (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

Students will read and discuss a number of plays, especially those written since 1850. This course is designed to develop standards for critical evaluation and increase understanding and appreciation of drama as a literary form.

ENG 246 Introduction to Literature—Novel (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

The course examines classic, unique, and emerging examples of novels. Students use elements of fiction to critically evaluate novels, thereby expanding their understanding and appreciation for prose fiction.

ENG 248 Introduction to Literature—Shakespeare (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

This course develops standards for critical evaluation using elements of drama and poetry. Students read and analyze selected Shakespearean works to understand and appreciate one of Western civilization's greatest playwrights.

ENG 251 American Literature from Colonial Times to the Civil War (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

Students read and analyze significant literary works that illustrate the changing currents of thought and expression that dominated American life from colonial times to the Civil War.

ENG 252 American Literature from the Late Nineteenth Century to the Present (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

Students read and analyze significant literary works that illustrate the changing currents of thought and expression that have dominated American life from the Civil War to the present.

ENG 275 World Literature—Casebook Studies of Universal Themes (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with a minimum grade of 2.0 or consent of instructor.

This course will examine a variety of international literary works pertaining to common literary themes. Such themes will be explored through poetry, drama, fiction and/or non-fiction. Works not originally written in English will be read in translation.

ENG 280 The Nature of Language (3-0) 3 Cr. Hrs.

Prerequisite: ENG 101 with minimum grade of 2.0 or consent of instructor.
ENG 102 recommended.

This course is an investigation of the historical background and current status of the English language, including problems such as the changing nature of language, dialect differences, origins of standards for correctness and attempts to describe the language grammatically.

ENGLISH AS A SECOND LANGUAGE

ESL 051 English Language Skills—Communication, Speaking and Listening (3-0) 3 Cr. Hrs.

Prerequisite: Sentence Skills CPT 35-50.

This course is part of a series of courses designed to introduce non-native speakers of English to the skills they will need to succeed in an academic environment where English is spoken. Students will practice and develop verbal English language skills and will study vocabulary and techniques for building one's vocabulary.

ESL 052 English Grammar and Basic Writing Skills (3-0) 3 Cr. Hrs.

Prerequisite: Sentence Skills CPT 35-50.

This course is part of a series of courses designed to introduce non-native speakers of English to the skills they will need to succeed in an academic environment where English is spoken. The content of this course focuses on major grammatical concepts including parts of speech, sentence functions and sentence patterns.

- ESL 100 English Communication Skills (3-0) 3 Cr. Hrs.**
Prerequisite: Sentence Skills CPT 51-70 or successful completion of ESL 051.
 This course is part of a series of courses designed to introduce non-native speakers of English to the skills they will need to succeed in an academic environment where English is spoken. The focus of this course is on high level grammar, communication skills including listening and vocal features (such as volume and intonation) and nonverbal communication skills.
- ESL 101 English Writing and Reading Skills 1 (3-0) 3 Cr. Hrs.**
Prerequisite: Sentence Skills CPT 51-70 or successful completion of ESL 052.
 This course is part of a series of courses designed to introduce non-native speakers of English to the skills they will need to succeed in an academic environment where English is spoken. Students will develop and practice writing and critical thinking skills in preparation for English 050, 055 or 101. A grade of 2.0 or better and the previous ESL instructor's recommendation is necessary to enter the general English classes.
- ESL 102 English Writing and Reading Skills 2 (3-0) 3 Cr. Hrs.**
Prerequisite: A grade of 2.0 or better in ESL 101 is required to enter ESL 102.
 This course is a continuation of the ESL 101 course. It is designed for non-native students who need further composition experience in preparation for English 050, 055 or 101. The primary focus of this course will be to continue building grammatical and writing competencies as well as increase critical thinking and reading comprehension skills.

ENVIRONMENTAL STUDIES

- ENVR 107 Soil Mechanics (3-2) 4 Cr. Hrs.**
Prerequisite: MATH 113.
 This course provides an introduction to soil mechanics and foundations and emphasizes practical applications that are supported by theory. The course concentrates on analytical techniques currently used by the environmental industry to understand the behavior of soils and to classify soils. Soil characteristics are explored by means of laboratory examination and testing techniques. Soils are classified using the US Department of Agriculture Classification System, the Unified Soil Classification System, and the American Association of State Highway and Transportation Officials System. Other topics include the fundamentals of groundwater, sanitary landfills and remediation and soil erosion.
- ENVR 206 Environmental Law (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course provides an introduction to federal environmental laws. Topics include common law, toxic torts, federalism, statutory law, regulatory strategies, private property and takings, public trust and international environmental law. Federal environmental laws include National Environmental Policy Act; Clean Air Act; Clean Water Act; Resource Conservation and Recovery Act; and Comprehensive Environmental Response, Compensation and Liability Act. Regulatory strategies, such as technology based standards, road block statute, harm based standards and pollution trading are examined.

- ENVR 230 Energy Resources (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course presents an overview of nonrenewable and renewable energy resources. Energy resources derived from the earth provide the majority of our energy needs. These resources include fossil fuels (petroleum, natural gas and coal) and radioactive ores used to generate nuclear power. Non-renewable energy resources are finite and may be used up in the future. Extraction of these geologic materials can result in negative environmental impacts if careful management strategies are not employed. Energy needs for our industrial economy may be met using both renewable and alternative energy sources, which include hydro power, solar power, geothermal power, biomass and wind power. Alternative fuels may be used in the transportation sector. Other course topics include energy conservation, air pollution, energy and sustainable development and energy and global climate change.
- ENVR 232 Field Experience (0-3) 3 Cr. Hrs.**
Prerequisite: Completion of at least three courses in the Environmental Studies Program or the Environmental Science Certificate Program.
 The field experience class provides students with an opportunity to apply the skills and knowledge learned in the Environmental Studies Program to off-campus work experience in government, private industry or nonprofit organization. Students can also meet the course requirements by completing a service learning project that incorporates an environmental issue. Class discussions include sources of employment in the environmental profession, job applications and interviews and preparing resumes.
- ENVR 235 Geographic Methods Applied to Environmental Problems (3-0) 3 Cr. Hrs.**
Prerequisite: GEOG 135, GEOG 225 and ENVR 107.
 This course is a capstone course for the Environmental Studies Program and applies geographic research methods and geotechnology to solve environmental problems. Development of a project topic, construction of a hypothesis and selection of a research strategy will be accomplished through consultation and faculty-directed study. Synthesis of geotechnology (geographic information systems, global positioning systems, aerial photography and remote sensing) with research methodology is the focus of this course.

FIRE TECHNOLOGY

- FIRE 112 Fire Fighter 1—Basic Fire Suppression (6-4) 10 Cr. Hrs.**
Prerequisite: Michigan state law mandates that persons taking this course must be at least 18 years of age and have a valid Michigan driver's license.
 This course provides an introduction to basic fire suppression, prevention procedures and skill development. FIRE 112 is provided as the first of two courses, which constitute the equivalent of the Basic Fire Academy and is offered for students who prefer to attend on a part-time basis. This course is for students who are currently employed by a Michigan Fire Marshal recognized fire department or currently seeking employment and/or volunteer in a recognized fire district. This course meets the state-mandated requirements for preparing students to take the exam for state certification for entry-level on-call or volunteer fire fighters.

FIRE 119 Fire Fighter 2—Advanced Fire Suppression (7-3) 10 Cr. Hrs.

Prerequisite: FIRE 112 with a grade of 2.0 or higher. Michigan state law mandates that persons taking this course must be at least 18 years of age and have a valid Michigan driver's license.

Fire Fighter 2 is the second of two courses which together make up the equivalent of the Basic Fire Academy and is offered for students who prefer to attend on a part-time basis. This course deals with advanced fire suppression techniques, including prevention procedures and skill development. This course is for students who are currently employed by a Michigan Fire Marshal recognized fire department or currently seeking employment and/or volunteer in a recognized fire district. This course meets the state mandated requirements for preparing students to take the exam for state certification for entry-level career fire fighters.

FIRE 124 Fire Academy (13-7) 20 Cr. Hrs.

Prerequisite: Michigan state law mandates that persons taking this course must be at least 18 years of age and have a valid Michigan driver's license.

The Fire Academy combines FIRE 112 and FIRE 119, providing comprehensive training in fire suppression, prevention procedures and skill development. This course is for students who are currently employed by a Michigan Fire Marshal recognized fire department, are currently seeking employment and/or are a volunteer in a recognized fire district. Students must be able to attend on a full-time basis. This course meets the state-mandated requirements for preparing students who intend to become professional Michigan fire fighters to take the state certification exam for entry-level career fire fighters.

FIRE 125 Building Construction for the Fire Service (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course emphasizes the impact that an understanding of the principles of building construction has on fire fighting strategy. It explains building materials and the processes that are involved in the construction of structures and how they react to fire conditions. It will provide students with the knowledge required to operate safely and effectively within residential or commercial buildings. The course will also discuss actual incidents and case studies containing critical thinking questions that give students a better understanding of what is to be expected in the field.

FIRE 128 Fire Fighting—Hydraulics and Water Supply (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is a study of the principles of fluid in motion. More specifically, it concentrates on water and its use as a fire extinguishing agent. It is a course of solving problems of water delivery application for fire fighting situations, along with the theory that is necessary in finding correct solutions. Studies will include the physical laws of liquids as they apply to water for fire fighting, the characteristics of water and its controlled delivery through highly technical machinery and equipment. It will include a study of the safe and efficient operation of that equipment during training and/or actual fire fighting operations. Students will be required to solve sample problems in writing. They will also be required to complete a brief study of a local water system.

FIRE 130 Fire Fighting—Tactics and Strategy (3-0) 3 Cr. Hrs.

Prerequisite: FIRE 112 or FIRE 124 is recommended.

This course examines new technology, fire fighting techniques and improved equipment as well as provides a guide for fire fighters and fire officers who need methods for handling specific situations. The course also covers general principles of fire fighting, engine company operations, search and rescue, structure fires and fire related emergencies.

FIRE 135 Fire Protection Systems (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to provide the student with an understanding of the basic principles involved in the design and operation of existing suppression and detection systems found in most structures. Specific topics of discussion include portable extinguishers, dry chemical systems, extinguishing foams, fire detection systems, smoke detection systems and other related topics.

FIRE 200 Fire and Arson Investigation (4-0) 4 Cr. Hrs.

Prerequisite: FIRE 112 or FIRE 124.

This course is designed to acquaint students with data on fire dynamics, explosions and fire behavior. The course is for students interested in learning fundamentals of collection, preservation and analysis of physical evidence. Also covered as part of the course are new laws and court decisions controlling investigator's access to scene and admission of evidence. This course prepares students for on-scene investigation as well as in-service or promotional exams.

FIRE 205 Fire Department Organization and Administration (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed to equip the student with knowledge to effectively tackle challenging management problems and deliver practical solutions for managing today's fire departments. This course provides guidance on leadership skills: motivating and disciplining personnel and accepting cultural diversity and unity. Also covered in this course is managing human resources, the use of computer technology for information management and strategic planning and budgeting.

FIRE 207 Fire Company Officer (3-0) 3 Cr. Hrs.

Prerequisite: FIRE 119 or FIRE 124.

It is essential that Fire Company Officers be well versed in the areas of management, leadership and human relations. This course will examine the skills required to function as a Fire Company Officer. Students will cover both traditional and contemporary methods of supervision, planning, staffing and training. The course objectives will parallel NFPA 1021, Fire Officer Professional Qualifications. Combined with the knowledge of essential fire fighting skills, this course provides students with the competencies required for a first-line fire company officer.

FRENCH

FR 101 Elementary French 1 (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is intended for students with no previous education in French. You will learn basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. You will also gain an appreciation for the French and Francophone culture.

FR 102 Elementary French 2 (4-0) 4 Cr. Hrs.

Prerequisite: FR 101 with a grade of 2.0 or better or one year of high school French or consent of instructor.

This course is a continuation of FR 101 and continues to review the basic French grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the French and Francophone culture will be an integral part of the course.

FR 201 Intermediate French 1 (4-0) 4 Cr. Hrs.

Prerequisite: FR 102 with a grade of 2.0 or better or two years of high school French or consent of instructor.

This course is a continuation of FR 102 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the French and Francophone culture will be an integral part of the course.

FR 202 Intermediate French 2 (4-0) 4 Cr. Hrs.

Prerequisite: FR 201 with a grade of 2.0 or better or three years of high school French or consent of instructor.

This course is a continuation of FR 201 with a broader emphasis on speaking (present-day spoken French), listening comprehension and reading. Through varied activities, the main focus will be on oral proficiency and communication as the course will be entirely conducted in French. An appreciation of the French and Francophone culture will be an integral part of the course.

GEOGRAPHY

GEOG 105 Earth Science for Elementary Teachers (3-2) 4 Cr. Hrs.

Prerequisite: None.

This course introduces earth science topics and integrates pedagogical methods appropriate for elementary school teachers. The course will help prospective teachers create a resource base of knowledge and activities for teaching earth science and develop teaching strategies based on how children learn science. Teaching strategies include inquiry-based strategies and active, cooperative and collaborative learning strategies. The course includes lecture, peer teaching, demonstrations and lesson plan development.

GEOG 133 World Regional Geography (4-0) 4 Cr. Hrs.

Prerequisite: None.

World Regional Geography includes a systematic study of the world's geographic realms, including Europe, United States-Canada, Russia, Middle America, South America, Southwest Asia, Southeast Asia, East Asia, Sub-Saharan Africa and Australia-New Zealand. Geographic concepts, such as map reading and spatial analysis, are first introduced. Then, the world is classified into geographic realms using both physical and social criteria. Each realm results from a unique interaction between the human societies and the physical and biological environment. The physical, cultural, political and social features of each realm are studied, along with any special regional concerns or problems.

GEOG 135 Earth Systems (3-2) 4 Cr. Hrs.

Prerequisite: None.

Earth Systems is an introductory physical geography lab course. Earth Systems utilizes a systems approach to analyze the earth's dynamic systems: energy, atmosphere, water resources, weather and climate, tectonic processes, landforms, soil, vegetation and ecosystems. Introductory geographic concepts including absolute and relative location, spatial analysis and geographic approach are covered. Fundamentals of map reading, remote sensing and geographic information systems are included.

GEOG 203 Weather and Climate (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course provides an overview of the earth's atmospheric system. Topics include energy, temperatures, atmospheric moisture, cloud formation, precipitation, atmospheric pressure, weather systems, weather forecasting, severe weather and global climate patterns. Discussions include global climate change and air pollution.

GEOG 212 Environmental Science (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is an introductory environmental science course with no prerequisites. The course offers an in-depth examination of a variety of local, regional and global environmental concerns. The course focuses on the effects that human societies have on the physical environment and the global biosphere. Topics include human population distribution, growth rates and population explosion, erosion and contamination of soil resources, degradation of water resources, air pollution, global climate change, waste management, biodiversity and deforestation.

GEOG 217 Water Resources (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of water resources which includes a study of the occurrence, movement, and behavior of water in the hydrologic cycle. Discussions on the ways in which these resources can be contaminated and remediated will be held. The course includes a study of watershed management, which is a holistic, integrated method of managing all water resources located within a naturally occurring watershed. Data and hydrologic studies completed for the Rouge River Watershed provide a model for watershed management. The course offers demonstrations of hydrologic computer models and limited field experience.

GEOG 225 Introduction to Geographic Information Systems—GIS (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This course provides an introduction to basic Geographic Information Systems (GIS) concepts through in-class discussions and hands-on assignments using ArcGIS. The course includes theory, mapping techniques, data collection and compilation and data analysis. Topics include implementation of a GIS, current applications, legal issues and the future of GIS.

GEOG 241 Geography Field Trip—Latin America (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This field study course includes a systematic geographic study of the Latin American realm, which includes Middle America and South America. Geographic concepts, such as map reading and spatial analysis, are first introduced. The physical, cultural, political and social features of the Latin America realm are studied with a focus on regional concerns or problems. The course will conclude with a field trip to a Latin American country to facilitate a live, experiential encounter with the unique physical and cultural landscape of that country.

GEOLOGY**GEOL 133 Physical Geology (3-3) 4 Cr. Hrs.***Prerequisite:* None.

Physical Geology is the study of the geological processes that affect the earth. This includes a survey of what the earth is made of (rocks, minerals, etc.), how it works on the inside (plate tectonics, earthquakes, volcanic eruptions) and the processes that act upon it from the outside (streams, glaciers, wind, etc.). Identification of common rocks and minerals and the interpretation of topographic maps are part of the required laboratory exercises. An all-day Saturday field trip is optional.

GEOL 134 Historical Geology (3-3) 4 Cr. Hrs.*Prerequisite:* GEOL 133.

Historical Geology is the study of the geologic development of the earth as a planet from its creation to the present time. The first half of the course is a study of the methods and techniques that the science of geology uses to unravel the history of the earth. The second half applies these techniques to present the geologic history of the continent of North America as a case study.

GEOL 237 Mineralogy (3-2) 4 Cr. Hrs.*Prerequisite:* GEOL 133.

Mineralogy teaches the basics of crystal formation, crystal symmetry and crystal chemistry of the most important rock forming and economic minerals of the earth's crust. The course also includes the formation of minerals and mineral occurrences and associations. Laboratory periods concentrate on the methods used in the identification of about 100 minerals.

GERMAN**GER 101 Elementary German 1 (4-0) 4 Cr. Hrs.***Prerequisite:* None.

This course is intended for students who have no previous education in German. The course will cover basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of German culture will be an integral part of the course.

GER 102 Elementary German 2 (4-0) 4 Cr. Hrs.*Prerequisite:* GER 101 with a grade of 2.0 or better or one year of high school German or consent of instructor.

This course is a continuation of GER 101 and continues to review the basic grammar patterns and builds competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of German culture will be an integral part of the course.

GER 201 Intermediate German 1 (4-0) 4 Cr. Hrs.*Prerequisite:* GER 102 with a grade of 2.0 or better or two years of high school German or consent of instructor.

This course is a continuation of GER 102 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of German culture will be an integral part of the course.

GER 202 Intermediate German 2 (4-0) 4 Cr. Hrs.*Prerequisite:* GER 201 with a grade of 2.0 or better or three years of high school German or consent of instructor.

This course is a continuation of GER 201 with a broader emphasis on speaking (present-day spoken German), listening comprehension and reading. Through varied activities, the main focus will be on oral proficiency and communication as the course will be entirely conducted in German. An appreciation of German culture will be an integral part of the course.

HEALTH INFORMATION TECHNOLOGY**HIT 100 Introduction to Medical Terminology (2-0) 2 Cr. Hrs.***Prerequisite:* None.

This course is a basic overview of medical terminology. The students will be introduced to medical terminology used in healthcare. The topics in the course provide activities to allow the student to spell, define and pronounce medical terminology.

HIT 104 Medical Terminology (4-0) 4 Cr. Hrs.*Prerequisite:* None.

This course introduces the student to the fundamentals of the language of medicine. Definitions, pronunciations, spelling and abbreviations of anatomic, symptomatic, diagnostic and operative terms pertaining to each anatomical system of the body will be reviewed. Terms pertaining to pharmacology, clinical laboratory, radiology and pathology will also be explored.

HIT 109 Principles of Health Information Management (2-2) 3 Cr. Hrs.*Prerequisite:* None.

This course provides the student an introduction to the health information management profession. Educational and certification requirements are examined along with potential employment opportunities in the health information profession. The health information management department, its functions and the relationship to other departments is explored. Health record content, documentation requirements and the accrediting and licensing agencies that govern health information will be reviewed. Hands-on laboratory activities will help the student to gain proficiency in basic health information functions.

HIT 112 Basic Laboratory and Diagnostic Tests (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 100 or HIT 104.

This course is designed to prepare an allied health student to identify clinical laboratory and diagnostic tests. The student will develop an understanding of what the laboratory and diagnostic test is used for as it relates to diseases, diagnoses or disorders associated with the test and the normal range or results of the test. Students will complete case studies to demonstrate a working knowledge of laboratory and diagnostic tests.

HIT 113 Human Diseases (3-0) 3 Cr. Hrs.*Prerequisite:* BIOL 105 or BIOL 236 or BIOL 237 and BIOL 238 and HIT 104.

This course is designed to build on the knowledge of anatomy and physiology and medical terminology. It will introduce the student to the disease processes and their effect on the individual body systems. The student will develop an understanding of the types of treatments for diseases which may include pharmacology, surgery and other therapies.

HIT 114 Pharmacology for Health Professionals (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 100 or HIT 104.

This course is designed to provide an overview of principles of pharmacology pertaining to treatment of diseases, physiological processes of the body related to drug therapy, legislation, classification and names of medications. Students will learn about medications through activities using medical documentation and internet resources.

HIT 116 Legal Aspects of Health Information (1-2) 2 Cr. Hrs.*Prerequisite:* HIT 109.

This course provides the Health Information Technology student with an understanding of the American legal system and the legal requirements concerning the compilation and maintenance of health information. Additional topics include how health information is used and when it can be disclosed, state and federal regulations and statutes, including the privacy and security rules resulting from the Health Insurance Portability and Accountability Act (HIPAA) and the American Recovery and Reinvestment Act (ARRA).

HIT 117 ICD-10-CM/PCS (2-2) 3 Cr. Hrs.*Prerequisite:* HIT 109 and HIT 113.

This course is an introduction to basic coding theory and computer laboratory practice applying ICD-10-CM/PCS to hospital medical/health records. This course is designed for the classification of patient morbidity and mortality information for statistical purposes, for the indexing of health/medical records by disease and operation for data storage and retrieval and for reimbursement purposes. Diagnostic coding and reporting guidelines for hospital inpatient and outpatient services will be utilized.

HIT 158 Clinical Affiliation 1 (0-8) 2 Cr. Hrs.*Prerequisite:* HIT 104, HIT 109, HIT 112, HIT 113, HIT 114, ENG 101, MATH 101, BIOL 236 and CIS 120.*Corequisite:* HIT 117.

This course provides professional practice assignments for the student in a Health Information Management/Services department under the supervision of a qualified Health Information Management professional. The student will have the opportunity to observe and interact with the Health Information Management professional in a variety of healthcare facilities both on-campus and off-campus site. The student will observe, perform and report on health information systems utilized in a variety of healthcare facilities and virtual lab.

HIT 210 Healthcare Statistics for Health Information Management (2-2) 3 Cr. Hrs.*Prerequisite:* HIT 117 and HIT 158.

This course introduces students to terminology, definitions and computational methodology of the basic and most frequently used health statistics. Topics examined include healthcare data collection, preparation, analysis and interpretation, cancer program requirements and vital statistics reporting.

HIT 213 Health Information Technology Seminar (1-0) 1 Cr. Hr.*Prerequisite:* None.*Corequisite:* HIT 256 or HIT 255.

This course will assist the student in preparation for the registered health information technician certification examination. The student will develop a study plan to be utilized on an individual and/or group basis. The student will complete a mock certification examination. The student will also begin preparation for a job search. A research of job opportunities that are currently available will be identified. The impact of continuing education upon the health information management profession will be discussed and a plan for maintaining certification will be developed.

HIT 216 Healthcare Delivery Systems (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 117 and HIT 158.

This course provides for a comprehensive review of the healthcare industry. Trends and changes related to healthcare facilities such as acute care hospitals, specialty hospitals, long term care facilities, managed care organizations, ambulatory care, behavioral care, hospice and home healthcare are investigated. The course will also deal with the impact and use of technology in the delivery and documentation of healthcare and the role of the health information professional within the healthcare delivery system.

HIT 217 Quality Management in Healthcare (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 158.

This course is designed for the health information technology student to review methods by which a healthcare organization measures, assesses and improves the quality of healthcare services. Topics explored include traditional quality assessment, performance improvement methodologies, utilization/resource management, risk management, infection control, credentialing and the role of oversight agencies.

HIT 219 Organization and Management (1-2) 2 Cr. Hrs.*Prerequisite:* HIT 210, HIT 216 and HIT 217.

Health information professionals make decisions that demand effective planning, organization, motivation and communication skills. Effective supervision of human and other resources is also essential in today's changing world of healthcare. This course provides the Health Information Technology student with basic management concepts and theories that are applied in the Health Information Services/Management environment.

HIT 222 Basic Ambulatory Coding (2-2) 3 Cr. Hrs.*Prerequisite:* HIT 109 and HIT 113.

This course is an introduction to basic coding theory and computer laboratory practice applying CPT to ambulatory medical/health records. This course is designed to prepare a student to code in the ambulatory setting using Current Procedural Terminology (CPT). The course will emphasize the reporting requirements for codes and rules that apply to the reimbursement systems used by government payers and other health plans. The student will be introduced to computerized coding systems utilized in healthcare. The emphasis of the course will be coding for facility services and procedures.

HIT 231 Ambulatory Coding Practicum (1-1) 2 Cr. Hrs.*Prerequisite:* HIT 234 and HIT 235.

This course will provide practical hands-on experience with Current Procedural Terminology (CPT) coding of health/medical records. The student will apply official coding guidelines to a variety of clinical cases and record types such as ambulatory, emergency, outpatient and physician office or service. The student will utilize the computerized encoding systems for ambulatory and procedure/services coding. The student will research references in solving coding problems.

HIT 232 Computer Applications in Healthcare (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 158.

This course is an introduction to the theory and practical methodology of healthcare information systems utilized in a health information management (medical record) department. The course will introduce the student to information systems used in healthcare organizations. The student will develop an understanding of the role of the health information technician in information systems planning and development. The student will be introduced to emerging technologies in healthcare information systems.

HIT 234 Intermediate Ambulatory Coding (2-2) 3 Cr. Hrs.*Prerequisite:* HIT 117 and HIT 222.

This course includes theory and practice in coding medical/health records in the hospital/ambulatory setting using Current Procedural Terminology (CPT) and Healthcare Financing Administration Common Procedure Coding System (HCPCS). The student will use encoding software in the laboratory to code medical/health records. The student will analyze clinical data for the purpose of coding and reimbursement in the ambulatory setting including the physician office.

HIT 235 Intermediate ICD-10-CM/PCS (2-2) 3 Cr. Hrs.*Prerequisite:* HIT 117, HIT 112 and HIT 114.

This course is designed to prepare a student to code in the hospital setting using ICD-10-CM/PCS. The course will emphasize reporting requirements for codes and rules that apply to reimbursement systems used by government payers and other health plans. The student will be introduced to computerized coding systems utilized in healthcare. The emphasis of the course will be development of intermediate skills to code accurately and ethically. Students will assign codes for diagnoses, services and procedures that are documented in the health/medical record. The student will use the encoding software in the laboratory to apply coding to health records.

HIT 236 ICD-10-CM/PCS Coding Practicum (1-1) 2 Cr. Hrs.*Prerequisite:* HIT 234 and HIT 235.

This course will provide practical hands-on experience with ICD-10-CM/PCS coding of health/medical records. The student will apply official coding guidelines to a variety of clinical cases and record types such as hospital inpatient, outpatient and physician office or service. The student will utilize computerized encoding systems for diagnosis and procedure coding. The student will research references in solving coding problems.

HIT 240 Healthcare Reimbursement Methodologies (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 117 and HIT 222.

The course is designed to provide the student knowledge of the diverse reimbursement methodologies utilized by governmental and private insurance entities in the payment for healthcare delivery services. The course will present third-party payer and compliance/auditing issues, correct coding policy and government prospective payment systems. The terminology and principles for managed care, revenue cycle management and other healthcare plans will be covered.

HIT 255 Health Information Technology Practicum (0-4) 2 Cr. Hrs.*Prerequisite:* HIT 116, HIT 117 and HIT 216.

This course emphasizes application of health information process and critical thinking skills in performing advanced health information technology functions. Theoretical content will focus on electronic health records, paper records and hybrid records. Health information technology software applications will include chart tracking, deficiency analysis, coding and abstracting, master patient index, release of information and data analysis. Health information technology skills will be performed in a laboratory setting.

HIT 256 Clinical Affiliation 2 (0-8) 2 Cr. Hrs.*Prerequisite:* HIT 117, HIT 116 and HIT 158.*Corequisite:* HIT 216, HIT 217 and HIT 222.

This course provides practical experience for the student in a Health Information Management/Services department under the supervision of health information management professionals. The student will have an opportunity to observe and interact with health information management professionals in a variety of healthcare facilities at off-campus sites. The student will observe, perform and report on the functions necessary to support health information services.

HISTORY

HIST 134 Ancient World (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is a survey of prehistoric and ancient times: origins of human nature and culture; early gathering-hunting and planting-herding societies; origins of civilization in the Middle East, India, China, the Mediterranean and elsewhere; civilized-barbarian interaction and the rise of early Old World empires; rise of classical civilizations, especially Greece and Rome; rise of the higher religions, especially the Judaeo-Christian traditions; and decline of classical civilizations with emphasis on the fall of Rome and the rise of medieval Europe, Byzantium and Islam.

HIST 137 Early Modern World (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is a survey of the balance of world civilizations in medieval and early modern times: American and African peripheral regions; major civilizations of Asia and Europe in the Middle Ages; 14th–16th century crisis and renewal; expansion of Europe in the age of Renaissance, Reformation and discovery; rise of the Great Power system; the scientific revolution and Enlightenment; the democratic and industrial revolutions; emergence of modern ideologies and nations; and climax of European expansion in the age of imperialism to the late 19th century.

HIST 138 Contemporary World (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of the main themes in the history of the world in the last hundred years: the Eurocentric world order of 1900; World War I, communist revolution and fascist counter-revolution; the settlements of the 1920s and the renewal of world crisis in the 1930s; World War II and the onset of the Cold War in the 1940s–1960s; erosion and collapse of the postwar order in the 1970s–1980s; and the contemporary world order in historical context.

HIST 141 History of Michigan and the Great Lakes (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a general survey of the historical development of Michigan from the primitive wilderness to the present; growth of certain political, economic, social and cultural institutions which contribute to understanding Michigan and the Great Lakes area today; and emphasis on relating the history of the state to that of both the area and the nation.

HIST 151 Early America—U.S. History (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of the origins of American civilization: native American societies in pre-Columbian and colonial times; European discovery, exploration, conquest and settlement of the Americas; Iberian, French and African elements in the early Americas; 17th and 18th century English colonial development; the Revolutionary era and the founding of the U.S.; and Federalist and Jeffersonian America to the early 19th century.

HIST 152 19th Century America—U.S. History (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of the expansion, crisis and renewal of the U.S. in the 19th century: demographic, economic, social and cultural change in Jacksonian America; the North and antebellum reform movements; the South and slavery; the West and territorial conquest and settlement; sectional struggle, the Civil War and Reconstruction; and emergence of modern, urban, industrial America to the beginning of the 20th century.

HIST 153 Contemporary America—U.S. History (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a survey of American civilization within the last hundred years: turn-of-the-century growth and crisis; the Progressive Era and World War I; the 1920s, the Great Depression and the New Deal; World War II and the emergence of the U.S. as a superpower; affluence, consensus and confrontation in the 1950s–1960s; malaise, drift and fragmentation in the 1970s–1980s; and the U.S. in the world of the late 20th century.

HIST 230 U.S. Business History—1865 to Present (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course will provide students with an examination of major business and economic development in the U.S. from the Civil War to the present. Emphasis will be placed on the ideas, forces and personalities in the ever-changing role of business and economics and their impact on the nation and its citizens. This course is recommended for students majoring in business, economics and history.

HOMELAND SECURITY

HS 101 Introduction to Homeland Security (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is an introduction to the concept of homeland security. The course will define and explain homeland security. The U.S. Department of Homeland Security will be thoroughly analyzed and its mission will be investigated. This course will also address chemical, biological, radiological, nuclear and explosive devices and the use of these weapons of mass destruction. The importance and basic elements of a planned response, methods used to prevent the importation of weapons of mass destruction into the U.S. and what can and is being done to prevent another large-scale terrorist incident in the United States will be covered.

HS 102 Understanding Terrorism (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course will introduce students to the phenomena of contemporary terrorism and extremism. Students will see special emphasis on extremism as the foundation for terrorist behavior, types of terrorism and how governments and law enforcement agencies respond to terrorism. The first steps are to understand the mindset, the groups, the aims and the tools terrorists use.

HS 103 Transportation and Border Security (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course addresses concerns associated with border and transportation security to include the potential threats to the passenger and cargo transportation systems. The course will cover the essential characteristics of national and international terrorism, with emphasis placed on significant transportation related terrorist threats and events. Emphasis will also be placed on the importance of technology and the interdependency of local, state, federal and international agencies to protect global trade. Students will be expected to solve problems as an individual and in a coordinated team setting.

HS 201 Organizational and Facility Security (3-0) 3 Cr. Hrs.*Prerequisite:* None.

The focus of this course will be on traditional methods of physical security hardware, risk assessments and business continuity. The course will also explore and assess developing security technology and its application to reduce internal and external threats to business.

HS 202 Introduction to Emergency Management (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will provide an overview of emergency management as a career field, discipline and approach to dealing with all-hazards emergency/disaster response. This course will examine major disasters in history and concepts, theory and terminology associated with emergency management.

HS 203 Intelligence Analysis and Security Management (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will provide a study of the U.S. government's intelligence community as well as an overview of intelligence processes. This study will include a historical look at intelligence and some of its milestones. Discussed will be key terms, concepts and perspectives. Students will be exposed to the relationship of intelligence with law enforcement and homeland security and how some intelligence processes may be applied to emergency management and pre-incident planning.

HUMAN DEVELOPMENT SERVICES
HDS 110 Career Decision Making (2-0) 2 Cr. Hrs.*Prerequisite:* None.

This course assists students in examining the components of career/job choice. The focus is on career awareness, personal awareness and education/training awareness as they relate to the process of occupational choice. Self-assessment instruments will help identify tentative career options, decision-making strategies, obstacles and planning skills.

HUMANITIES
HUM 106 Introduction to Art and Music (1-0) 1 Cr. Hr.*Prerequisite:* None.

This course will cover the basic mechanical and aesthetic elements underlying the visual and aural arts. It will also include an overview of major periods, styles, composers and artists. The course also prepares students to develop an understanding of how to perceive music and art. This course provides an introductory, fundamental, audience-related approach to art and music. Definitions and concepts will be approached in a very basic manner. No prior knowledge or experience in music or arts is necessary.

HUM 150 World Masterpieces (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course serves as an introduction to some of the great works of art and music in the Western world, from Greek civilization to the present. The course will cover the major periods/styles in art and music history: Greek, Roman/Early Christian, Romanesque, Gothic, Renaissance, Baroque, Classical, Romantic, Modern (1900–1945) and Post-Modern (1945–present). Art and music masterpieces to be studied will be selected from the main repertoire of significant works of the Western world. The course will also cover fundamentals of integrative art and music appreciation. A background in art and/or music is not required.

HUM 190 Individual Humanism—An Honors Colloquium (3-0) 3 Cr. Hrs.*Prerequisite:* Acceptance to the Schoolcraft Scholars Honors Program.

A required introduction to the Schoolcraft Scholars Honors Program, this colloquium studies the individual and the community through multiple disciplines. Topics of the colloquium may include, but are not limited to, the human condition; individual Renaissance and enlightenment; the role of individuals in a society of change, transition and revolution; the unanswered question; and taking an active role on the social stage. Additionally, students in this course collaborate, practice critical thinking and explore both community issues and community-based organizations.

HUM 201 Art and Music in Western Civilization: Field Study—England (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is a humanistic study of music and art in concentrated form through field study. Course includes art forms and functional styles of historical periods as they relate to universal principles. The course will also include studies in English history, culture and geography. The course will conclude with a ten-day trip to London, England with day trips to Cambridge, Canterbury, Bath, Stonehenge, Ely and other satellite locations. The tour will include visits to the National Gallery and the British Museum as well as other museums and will include visits to several palaces, castles, cathedrals and performing arts centers to facilitate a live, first-hand encounter with English arts and culture.

- HUM 202 Art and Music in Western Civilization: Field Study—France (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is a humanistic study of the arts, culture and history in concentrated form through field study. Course includes art forms and functional styles of historical periods as they relate to universal principles. The course will include studies in French history, culture and geography. The course will conclude with a ten-day trip to Paris, France which will include visits to the Louvre Museum, Musee d'Orsee (and other museums/galleries), Notre Dame Cathedral (and other cathedrals), day trips to Versailles, Giverny, St. Germain, St. Denis and other culturally and historically significant centers to facilitate a live, first-hand encounter with French arts and culture.
- HUM 203 Art and Music in Western Civilization: Field Study—Italy (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is a humanistic study of the arts, culture and history in concentrated form through field study. Course includes art forms and functional styles of historical periods as they relate to universal principles. The course will include studies in Italian history, culture and geography. The course will conclude with a ten-day trip to Italy which will include visits to Venice, Ravenna, Florence, Assisi, Rome and other culturally and historically significant centers to facilitate a live, first-hand encounter with Italian arts and culture.
- HUM 204 Art and Music in Western Civilization: Field Study—Spain (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is a humanistic study of the arts, culture and history in concentrated form through field study. Course includes art forms and functional styles of historical periods as they relate to universal principles. The course will include studies in Spanish history, culture and geography. The course will conclude with a ten-day trip to Spain which will include visits to Madrid, Toledo, Segovia, El Escorial and other culturally and historically significant centers to facilitate a live, first-hand encounter with Spanish arts and culture.
- HUM 210 The Art of Being Human (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is an interdisciplinary introduction to the humanities as an overall approach to living. The course involves the student in the philosophies, religions and arts as avenues of human inquiry and expression.
- HUM 212 Mass Media and Popular Culture (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is an introduction into the nature of mass communication and their relationship with the public. The course will analyze, assess and evaluate popular culture and mass media. Focus will be on the various forms of media to include radio, television, film, newspaper and advertising to determine how they influence and manipulate the ways you relate to yourself and others. Examination will include the history, economics, power and ethical consideration of media outlets.
- HUM 215 Humanities through the Arts (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course represents an exploratory approach to the humanities that focuses on the special role of the arts. The relation of the humanities to values is central to the purpose of the course. This approach provides a self-contained program for studying values as revealed in the arts.

- HUM 231 The Humanities in Western Culture—Antiquity through the Renaissance (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is an introduction to the Integrated Humanities. Culture has sometimes been defined as that which remains after the civilization has vanished. What is left behind amounts to much more than just artifacts; we are left with a legacy of the humanistic spirit. This course takes an in-depth look at culture, civilization, values and qualities inherent in Western art, architecture, music, literature and philosophy. The course is also a study in Western thought and its resultant social and political institutions. The first of a two-semester sequence, this course will cover Ancient River Valley, Greek and Roman civilizations; the Middles Ages; and the Renaissance.
- HUM 232 The Humanities in Western Culture—Baroque to the Present (3-0) 3 Cr. Hrs.**
Prerequisite: None.
 This course is an introduction to the Integrated Humanities. Culture has sometimes been defined as that which remains after the civilization has vanished. What is left behind amounts to much more than just artifacts; we are left with a legacy of the humanistic spirit. This course takes an in-depth look at culture, civilization, values and qualities inherent in Western art, architecture, music, literature and philosophy. The course is also a study in Western thought and its resultant social and political institutions. The second of a two-semester sequence, this course will cover the Baroque, Classical and Romantic periods, as well as the major historical, philosophical and artistic "isms" of the modern and post-modern Western world.

ITALIAN

- ITAL 101 Elementary Italian 1 (4-0) 4 Cr. Hrs.**
Prerequisite: None.
 This course is intended for students who have no previous education in Italian. The course will cover basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the Italian culture will be an integral part of the course.
- ITAL 102 Elementary Italian 2 (4-0) 4 Cr. Hrs.**
Prerequisite: ITAL 101 with grade 2.0 or better or one year of high school Italian or consent of instructor.
 This course is a continuation of ITAL 101 and continues to review the basic Italian grammar patterns and to build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of the Italian culture will be an integral part of the course.

LEARNING RESOURCES

- LR 135 Strategies for Digital Research: Introduction to Information Literacy (1-0) 1 Cr. Hr.**
Prerequisite: None.
 This course provides students with the technical skills needed to locate, access and critically evaluate electronic (digital) information. Additionally, it will teach students information management strategies once they have learned how to access appropriate information sources.

MANUFACTURING

- MFG 101 Geometric Dimensioning and Tolerance with Inspection (2-1) 3 Cr. Hrs.**
Prerequisite: None.
 The student will learn to interpret blueprints with emphasis placed on Geometric Dimensioning and Tolerance with Inspection. This course will introduce national and international geometric standards of form, profile, orientation, runout and location tolerances used in the manufacturing processes. The student will utilize various instruments to check the accuracy of parts. Curriculum includes emphasis on print reading and measurements.
- MFG 102 Basic Machining Processes (2-4) 3 Cr. Hrs.**
Prerequisite: None.
 This course will cover fundamental manufacturing processes. The student will be exposed to manual machine operator skills. Particular course emphasis will be on machines, tools and measurements to produce an end product. This is a hands-on class with two-thirds of the time in the manufacturing lab.
- MFG 103 Basic Computer Numerical Control (CNC) (2-4) 3 Cr. Hrs.**
Prerequisite: MFG 102.
 Students will be introduced to the operation of the CNC Mill through the use of the basic fundamental of “G” codes and “M” codes. Machine and tool set up will also be covered. As part of the class, students will make several small projects on the CNC machines. These machines are used in today’s industrial manufacturing plants.
- MFG 105 Manufacturing Processes (4-0) 4 Cr. Hrs.**
Prerequisite: None.
 This course will serve as an introduction to a variety of manufacturing processes, such as casting, forming, plastics, machining and joining. It is meant to be an overview and will concentrate on the uniqueness of each process as it applies to materials and production capabilities. In addition, the student will have a brief exposure to the properties of materials as they relate to particular manufacturing processes and the concepts of measurement, inspection and tolerances.

- MFG 106 Basic Mastercam (2-2) 3 Cr. Hrs.**
Prerequisite: MFG 102 or basic knowledge of machines (mill and lathe).
 Students will further their CNC skills by using a CAD/CAM Mastercam software to generate CNC coding for mills and lathes. Using Mastercam involves three steps: First, the student will use Mastercam’s CAD program to create the part geometry; secondly, the CAM program will be used to program machine information (feed rate, spindle speed, coolant control command, etc.); and finally, a postprocessor will be used to generate CNC coding. Also, tool paths will be verified by using a graphical (animation) solid-model tool path verification to detect potential machining errors. The students will also study drilling, solid modeling, pocketing and circle boring.
- MFG 203 Advanced Computer Numerical Control (CNC) (2-4) 3 Cr. Hrs.**
Prerequisite: MFG 103.
 This course will cover CNC machining as well as the advanced functions of the controller. All machine-based operational aspects of the CNC machine used in industrial manufacturing plants will be covered. This course will provide a more advanced machining experience.
- MFG 206 Advanced Mastercam (0-4) 3 Cr. Hrs.**
Prerequisite: MFG 106 or extensive knowledge in 2D Mastercam Design.
 The student will use CNC Mastercam software program. This course will address the following machining variables: machining parameters, constructing wire frame models, generating surface models with tool paths, engraving artworks and solid modeling. Operational parameters will be calculated to determine operating capacity of a cutting tool, spindle horsepower, the affects of different types of work piece material, and rigidity of the part and respective fixture. The student will learn how to generate coding for 3D wire frame and multi-axis composite surfaces using various modeling techniques.
- MFG 211 3D Computer Numerical Control (CNC) Machining (0-3) 3 Cr. Hrs.**
Prerequisite: MFG 203 and MFG 206.
 Students will use the computer to develop the tool path for cut 3D surfaces on CNC machines. This method is used in mold shops in the industrial operation. Students must have a very good understanding of Mastercam and CNC machining.

MASSAGE THERAPY

- MAS 112 Massage Techniques 1 (3-5) 5.5 Cr. Hrs.**
Prerequisite: None.
Corequisite: MAS 113, MAS 114 and MAS 115.
 This is the introductory course that provides students with a solid foundation in the knowledge and skills necessary to perform massage. Students will learn to apply traditional massage strokes with purpose and effect while using efficient body mechanics. Issues of hygiene, sanitation and self-care will be emphasized throughout.

MAS 113 Comprehensive Study of Human Body Systems 1 (2-2) 3 Cr. Hrs.*Prerequisite:* None.*Corequisite:* MAS 112, MAS 114 and MAS 115.

This is the first of three courses on the human body systems as they relate to the practice of massage therapy. The foundational course presents the principles of anatomy, physiology, kinesiology, pathology and pharmacology. A combination of lecture and lab, students are presented with a decision making model for critical thinking. Students will learn about the integumentary, skeletal, articular, muscular and fascial systems in a theoretical and hands-on manner. Students will also begin the exploration of concepts, terminology and structures of movement.

MAS 114 Clinical Foundations (1-1) 1.5 Cr. Hrs.*Prerequisite:* None.*Corequisite:* MAS 112, MAS 113 and MAS 115.

This is the foundational course for the skills needed to practice massage therapy in the student clinic and a professional clinical setting. Students will discuss and practice client interviewing, health histories and SOAP note charting. Issues of safety, client accommodations and identifying common contraindications will be addressed.

MAS 115 Business and Professional Skills 1 (2-0) 2 Cr. Hrs.*Prerequisite:* None.*Corequisite:* MAS 112, MAS 113 and MAS 114.

This is the first of three courses on the non-technical skills necessary for success in the workplace. The foundational course presents the history of massage, ethical principles and scope of practice. Students will practice communication skills and explore the role of boundaries in a professional setting.

MAS 122 Massage Techniques 2 (2-4) 4 Cr. Hrs.*Prerequisite:* MAS 112, MAS 113, MAS 114 and MAS 115.*Corequisite:* MAS 123, MAS 124 and MAS 125.

In this course, students will learn to provide a smooth and flowing full body therapeutic massage. Adaptations and modifications of massage for diverse client populations will be examined and practiced. Specialty techniques such as myofascial release and reflexology will be used to build upon the primary massage strokes taught in the foundational course.

MAS 123 Comprehensive Study of Human Body Systems 2 (3-2) 4 Cr. Hrs.*Prerequisite:* MAS 112, MAS 113, MAS 114 and MAS 115.*Corequisite:* MAS 122, MAS 124 and MAS 125.

This is the second of three courses on the human body systems as they relate to the practice of massage therapy. It continues with the principles of anatomy, physiology, kinesiology, pathology and pharmacology. A combination of lecture and lab, students are presented with a decision making model for critical thinking. Students will learn about the nervous, cardiovascular and endocrine systems in a theoretical and hands-on manner. Students will also continue the exploration of concepts, terminology and structures of movement.

MAS 124 Student Clinic 1 (0-2) 1 Cr. Hr.*Prerequisite:* MAS 112, MAS 113, MAS 114 and MAS 115.*Corequisite:* MAS 122, MAS 123 and MAS 125.

Students will experience 30 hours of supervised practice at the Radcliff Campus student clinic. All students will perform practical applications of massage and front desk activities to prepare them for the workplace. Some additional off-site opportunities may be available.

MAS 125 Business and Professional Skills 2 (3-0) 3 Cr. Hrs.*Prerequisite:* MAS 112, MAS 113, MAS 114 and MAS 115.*Corequisite:* MAS 122, MAS 123 and MAS 124.

The second of three courses on the non-technical skills necessary for success in the workplace addresses the ethics of touch, ethical dilemmas and professional relationships. Through discussions and activities students will learn therapeutic relationship dynamics and how to work with awareness, empathy and compassion. Emphasis will be placed upon the ability of students to manage client relationships in a professional manner.

MAS 132 Massage Techniques 3 (2-2) 3 Cr. Hrs.*Prerequisite:* MAS 112, MAS 113, MAS 114, MAS 115, MAS 122, MAS 123, MAS 124 and MAS 125.*Corequisite:* MAS 133, MAS 134 and MAS 135.

In this course students will learn to assess soft-tissue tension, restricted range of motion and trigger points. Students will learn a variety of neuromuscular techniques to address these conditions. Applications of techniques for musculoskeletal injuries will be integrated into the role of massage in chronic pain.

MAS 133 Comprehensive Study of Human Body Systems 3 (4-2) 5 Cr. Hrs.*Prerequisite:* MAS 112, MAS 113, MAS 114, MAS 115, MAS 122, MAS 123, MAS 124 and MAS 125.*Corequisite:* MAS 132, MAS 134 and MAS 135.

This is the third of three courses on the human body systems as they relate to the practice of massage therapy. It continues with the principles of anatomy, physiology, kinesiology, pathology and pharmacology. A combination of lecture and lab, students are presented with a decision making model for critical thinking. Students will learn about the digestive, immune, lymphatic, reproductive, respiratory and urinary systems in a theoretical and hands-on manner. Students will continue the exploration of concepts, terminology and structures of movement. Whole body principles, stages of development, metabolism, nutrition and stress management as they relate to principles of health and wellness will be addressed.

MAS 134 Student Clinic 2 (0-3) 1.5 Cr. Hr.*Prerequisite:* MAS 112, MAS 113, MAS 114, MAS 115, MAS 122, MAS 123, MAS 124 and MAS 125.*Corequisite:* MAS 132, MAS 133 and MAS 135.

Students will experience a total of 45 hours of supervised practice using the skills they have learned in pre/co-requisite courses. All students will perform practical applications of massage and front desk activities at the Radcliff Campus student clinic. Some additional off-site opportunities may be available.

MAS 135 Business and Professional Skills 3 (3-0) 3 Cr. Hrs.

Prerequisite: MAS 112, MAS 113, MAS 114, MAS 115, MAS 122, MAS 123, MAS 124 and MAS 125.

Corequisite: MAS 132, MAS 133 and MAS 134.

The third of three courses, this is the capstone course for the non-technical skills necessary for success in the workplace. In this interactive course, students will identify personal and professional goals as well as clarify visions and values for their massage practice. Students will explore career options and concepts as they enhance customer service principles. Students will acquire an understanding of ethical business procedures and employment structures. Research literacy and the impact of scientific research on the massage profession will also be addressed.

MATHEMATICS

CALCULATOR REQUIREMENTS:

MATH 113: A scientific calculator is required. If continuing in mathematics, a TI-83 Plus or TI-84 Plus is recommended.

MATH 119, 128 through 151: TI-83 Plus or TI-84 Plus is required.

MATH 122, 230 and 240: TI-83 Plus or TI-84 Plus is recommended.

MATH 252: Calculator is required. Consult with your instructor.

No devices with computer algebra systems, such as the TI-89 or TI-92, are permitted on exams or other graded work in any mathematics class. For more details you may wish to consult your instructor.

For appropriate sequence of mathematics courses, consult with a member of the Math Department or Counseling Center.

MATH 045 Basic Mathematics (4-0) 4 Cr. Hrs.

Prerequisite: Competence with addition, subtraction, multiplication and division of whole numbers without the aid of a calculator.

The topics covered in this course include arithmetic with whole numbers, fractions, decimals, percentages and proportions. In addition, several topics from geometry are included.

MATH 047 Prealgebra (3-0) 3 Cr. Hrs.

Prerequisite: Competence in arithmetic without using a calculator OR MATH 045 or equivalent with grade of 2.0 or better.

Topics covered in this course include an introduction to variables, integers and algebraic expressions; simplifying algebraic expressions involving integers, fractions and decimals; solving algebraic equations involving integers, fractions, decimals and percents; ratio and proportions; applications using basic concepts from geometry; and introduction to graphing via point-plotting.

MATH 053 Beginning Algebra (4-0) 4 Cr. Hrs.

Prerequisite: MATH 047 or equivalent with grade of 2.0 or better.

This course will explore the real number system, fundamental operations with real numbers, graphing, linear equations, factoring polynomials, rational expressions, exponents, quadratic equations, applications and introduction to the function concept.

MATH 055 Plane Geometry (3-0) 3 Cr. Hrs.

Prerequisite: MATH 053 or equivalent with grade of 2.0 or better.

This course includes the basic elements of geometry including deductive reasoning, formal proofs and elementary construction with straight edge and compass.

MATH 101 Business Mathematics (3-0) 3 Cr. Hrs.

Prerequisite: MATH 045 with a minimum grade of 2.0 or equivalent.

This course offers a review of fundamentals of arithmetic along with coverage of percentage, simple and compound interest, taxes, insurance, bonds and their applications to business practice.

MATH 105 Mathematics for Elementary Teachers 1 (4-0) 4 Cr. Hrs.

Prerequisite: MATH 053 or equivalent with grade of 2.5 or better.

This is the first of a two-course sequence designed for students who plan to enter elementary school teaching. The course examines elementary school math topics and mathematics curriculum from an advanced standpoint with an emphasis on conceptual understanding and problem solving. The course covers problem solving, number theory, sets, algebraic concepts and functions, numeration, the real numbers and their properties and operations.

MATH 106 Mathematics for Elementary Teachers 2 (4-0) 4 Cr. Hrs.

Prerequisite: MATH 105 or equivalent with grade of 2.0 or better.

This is the second of a two-course sequence designed for students who plan to enter elementary school teaching. The course covers geometry, measurement, statistics and probability.

MATH 111 Applications-Utility of Math (4-0) 4 Cr. Hrs.

Prerequisite: MATH 047 or equivalent with grade of 2.0 or better.

This course is intended for students who do not wish to pursue the study of mathematics by following the standard sequence of courses, but who need to develop some competency in mathematics for an Associate of Arts degree. This course includes the practical application of mathematics. Topics covered in the course include geometry, managing money, interest, installment buying, credit cards, loans, probability, statistics and graphing.

MATH 113 Intermediate Algebra for College Students (4-0) 4 Cr. Hrs.

Prerequisite: MATH 053 or equivalent with grade of 2.0 or better. Placement test is available in the Assessment Center.

Review of algebraic operations; problem solving strategies; integer and rational exponents; complex numbers; solving equations; function concept; graphs and applications of linear, quadratic, exponential and logarithmic functions; and systems of equations are the topics covered in this course.

MATH 119 Trigonometry (3-0) 3 Cr. Hrs.

Prerequisite: MATH 055 or equivalent with grade of 2.0 or better and MATH 113 or equivalent with grade of 2.0 or better. Note: Business and social science majors should take MATH 128 instead of MATH 119.

Trigonometric functions and their graphs, identities, equations and inverse functions and solutions of right and oblique triangles are the topics included in this course.

MATH 122 Elementary Statistics (4-0) 4 Cr. Hrs.*Prerequisite:* MATH 113 or equivalent with grade of 2.0 or better.

Placement test is available in the Assessment Center.

This course includes an introduction to statistics, statistical descriptions, frequency distributions, possibilities and probabilities, probability distributions, sampling and sampling distributions, testing hypotheses based on measurements, count data, paired data and use of nonparametric tests.

MATH 128 Precalculus Without Trigonometry (4-0) 4 Cr. Hrs.

Prerequisite: MATH 113 or equivalent with grade of 2.0 or better. Note: MATH 128 is recommended for business and social science majors. Note: The combination of MATH 119 and MATH 128 is NOT comparable to MATH 129. MATH 128 is a prerequisite for MATH 145 but is NOT a prerequisite for MATH 150.

The function concept, polynomial, rational, exponential and logarithmic functions, curve sketching, systems of linear equations and inequalities, graphical solutions and business applications are the topics included in this course.

MATH 129 Precalculus With Trigonometry (5-0) 5 Cr. Hrs.

Prerequisite: MATH 113 or equivalent with a grade of 2.0 or better and MATH 119 or equivalent with a grade of 2.0 or better. Note: MATH 129 is recommended for engineering, science and math majors.

Topics covered in this course include the function concept, polynomial, rational, exponential, logarithmic, rapid review of trigonometric and inverse trigonometric functions, solving equations and systems of equations, curve sketching, complex numbers, coordinate geometry and conic sections. The prevailing theme is applications and graphical solutions.

MATH 135 Finite Mathematics (4-0) 4 Cr. Hrs.

Prerequisite: MATH 128 or equivalent with grade of 2.0 or better. Note: MATH 135 is oriented to business and social science majors.

Matrices and their applications to linear equations and linear programming, the simplex method, elementary probability and mathematics of finance are the topics included in this course.

MATH 145 Calculus for Business and Social Science (4-0) 4 Cr. Hrs.*Prerequisite:* MATH 128 or equivalent with grade of 2.0 or better.

The main topics of this course are differentiation of algebraic, exponential and logarithmic functions; curve sketching; optimization; constrained optimization; integration; introduction to functions of several variables; and applications.

MATH 150 Calculus With Analytic Geometry 1 (5-0) 5 Cr. Hrs.*Prerequisite:* MATH 129 or equivalent with grade of 2.0 or better.

This course is oriented to engineering, science and mathematics majors. Limits and continuity, derivatives and integrals of algebraic and some trigonometric functions, curve sketching with the aid of the graphing calculator and applications are the topics covered in this course.

MATH 151 Calculus With Analytic Geometry 2 (5-0) 5 Cr. Hrs.*Prerequisite:* MATH 150 or equivalent with grade of 2.0 or better.

Note: MATH 151 may be taken concurrently with MATH 230.

This course includes the study of derivatives and integrals of transcendental functions, techniques of integration, indeterminate forms, improper integrals, infinite series, conics, polar coordinates and applications.

MATH 230 Linear Algebra (4-0) 4 Cr. Hrs.*Prerequisite:* MATH 150 or equivalent with grade of 2.0 or better.

Topics covered in this course include systems of linear equations, matrices, determinants, Euclidean vector spaces, general vector spaces, inner product spaces, eigenvalues and eigenvectors, diagonalization, linear transformations and applications.

MATH 240 Calculus With Analytic Geometry 3 (5-0) 5 Cr. Hrs.*Prerequisite:* MATH 151 or equivalent with grade of 2.0 or better.

Vectors in the plane, vectors in three-space, solid analytic geometry, partial derivatives, line integrals, multiple integrals and applications are the topics covered in this course.

MATH 252 Differential Equations (5-0) 5 Cr. Hrs.*Prerequisite:* MATH 240 or equivalent with grade of 2.0 or better.

Topics covered in this course include first order differential equations, second order linear equations, series solutions of second order linear equations, higher order linear equations, Laplace transform, systems of first order linear equations, numerical methods and qualitative theory of differential equations.

MEDICAL ASSISTING**MA 110 Phlebotomy (4-0) 4 Cr. Hrs.***Prerequisite:* None.

This course teaches basic technical skills necessary for a phlebotomist to draw blood in various healthcare settings such as hospital labs, doctors' offices and clinics. Proper procedures are stressed for the safe collection and handling of clinical specimens obtained by venipuncture or capillary puncture from adults, children and infants. This course also defines the role of the phlebotomist in the healthcare setting.

MA 134 Medical Insurance Coding (3-0) 3 Cr. Hrs.*Prerequisite:* None.*Corequisite:* HIT 104.

This course introduces the student to insurance coding guidelines developed for use with the International Classification of Diseases (ICD-10-CM/PCS) and Current Procedural Terminology (CPT-4). The course is designed to develop coding skills to record the services and procedures that are provided for the patient. The importance of accurate coding will be discussed as it is an essential part of reimbursement.

MA 140 Medical Office Procedures (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will focus on the basic concepts in the professional practice of medicine and the role and function of the medical assistant. The course introduces personal and professional characteristics and legal and ethical standards for the medical assistant. Professional and personal therapeutic communications, time management and workplace dynamics will be studied. This course addresses administrative skills necessary for the medical assistant.

MA 155 Medical Insurance Billing (3-0) 3 Cr. Hrs.*Prerequisite:* MA 134 and HIT 104.

This course introduces the student to the various types of medical insurance including Blue Cross/Blue Shield, Medicare, Medicaid, Workers' Compensation and other third-party payers. The student will perform the tasks necessary to process claim forms for each type of medical insurance. Manual and computerized billing methodologies are included.

MA 174 Medical Laboratory Techniques (4-0) 4 Cr. Hrs.*Prerequisite:* BIOL 105, HIT 104, MA 140 and MA 110.

This course will provide an opportunity for the student to practice techniques to perform laboratory procedures. The student will practice preparing the patient for tests, collecting samples, completing the tests and reporting the results to the physician. The student will practice laboratory procedures such as urinalysis, hematology, bacteriology, chemistries, blood typing and patient preps.

MA 180 Medical Office Clinical Procedures (3-3) 4 Cr. Hrs.*Prerequisite:* BIOL 105, HIT 104 and MA 140.

This course is designed to introduce the student to examination techniques, injections, minor surgery, medications and pharmacology, sterilization procedures and autoclave.

MA 195 Office Practicum (1-15) 3 Cr. Hrs.*Prerequisite:* Successful completion of all academic and medical assisting courses.

The student will participate in a non-paid externship under the direction of a physician and the office manager or supervisor. The externship is structured to provide experience in performing administrative and clinical procedures in a physician office, clinic or ambulatory healthcare setting. The student will interact with other healthcare professionals performing and observing skills of a medical assistant. It is an opportunity that will allow a student to apply theory to practice.

MEDICAL TRANSCRIPTION
MT 108 Physician Office Transcription (2-0) 2 Cr. Hrs.*Prerequisite:* HIT 104 and BIOL 105.

This course is designed to introduce the student to transcription practices utilized in the physician/medical office practice/setting. The importance of accurate transcription will be an essential aspect for this course. Report format and general transcription guidelines will be explored. The student will gain experience by transcribing office, clinic and hospital dictation from many medical specialties.

METALLURGY AND MATERIALS SCIENCE
MET 102 Introduction to Materials Science (2-2) 3 Cr. Hrs.*Prerequisite:* None.

This course provides students with a basic introduction to materials science using the principles of science to study the nature of metallic and non-metallic materials used in most industries. Topics covered in the course include atomic structure; elements; states of matter; bonding; crystallization; and mechanical, chemical and physical properties of metallic, polymeric, ceramic and composite materials.

MET 114 Engineering Materials (3-0) 3 Cr. Hrs.*Prerequisite:* MET 102.

This course in materials applications covers ferrous and non-ferrous alloys, powdered metals, ceramics and glass, rubber and polymers. Each material is examined with respect to their advantages and disadvantages, methods of fabrication and joining and specific industrial applications, both current and future.

MET 120 Hazardous Materials Management (2-0) 2 Cr. Hrs.*Prerequisite:* None.

This course provides instruction in the nature of hazardous materials and their interaction with the health and safety of individuals as they relate to industrial metallurgical practices. Topics covered in the course include proper handling of hazardous substances; chemical, physical and biological influences on health; human response to toxins; target organ effects; and regulatory controls used in hazard prevention in the laboratory and materials process workplace.

MET 152 Structure and Properties Laboratory (2-2) 3 Cr. Hrs.*Prerequisite:* MET 102 or may be taken concurrently.

An experience oriented course with emphasis on lab techniques and equipment required for the macro and microstructural evaluation of metals produced by industrial processes. Topics covered in the course include optical systems, sectioning and polishing, mounting techniques, etching, specialized measurement technology and photo-microscopy.

MET 160 Composite Materials (2-2) 3 Cr. Hrs.*Prerequisite:* MET 102.

An introduction to plastic and composite materials used in industry. Emphasis is placed on chemical, physical and mechanical properties of thermoplastic, thermosetting plastics and matrix reinforced composites. Topics covered in the course include the nature of polymeric materials, reinforcements, coatings and adhesives. Industrial forming techniques and applications are also examined.

MET 211 Physical Metallurgy Structures (3-1) 3 Cr. Hrs.*Prerequisite:* MET 102 and MET 152.

An interpretative study incorporating phase equilibria, diffusion, nucleation and growth, solid state transformation, strengthening mechanisms; effects of alloying, deformation, precipitation, recrystallization and grain growth on microstructure. Microstructural interpretation of ferrous and non-ferrous metal is emphasized.

MET 215 Mechanical Properties of Metals (3-1) 3 Cr. Hrs.*Prerequisite:* MET 114.

Students will explore basic elastic and plastic behavior, deformation and dislocations; brittle, ductile and transitional fractures; fatigue, tensile, hardness, impact and stress testing. Course will include a review of industry methods and testing standards. Mechanical forming processes used in the industry including rolling, forging, drawing and other forming techniques will be introduced.

MET 217 Computer Applications in Materials Science (2-2) 3 Cr. Hrs.*Prerequisite:* MET 114 or consent of department and computer experience highly recommended.

An experience-oriented course in specialized computer applications for advanced study in experimentation techniques and analysis, metallurgically-based computer aided engineering tools and statistical methods. Topics covered in the course include an introduction to basic statistics, graphics, experimentation, designed experiments, ANOVA and regression analysis and CAE tools including Stecal.

MET 248 Electron Microscopy and Image Analysis (2-2) 3 Cr. Hrs.*Prerequisite:* MET 152 and BIOL 140 or consent of department.

This course introduces the fundamentals of Scanning Electron Microscopy (SEM) and quantitative Image Analysis (IA) currently used in support of effective materials, characterization and evaluations. Topics covered in the course include microscopy systems and components, applications in fractography and quantifiable measurements used in process and surface failure analysis, materials characterization and product development studies. The course is recommended for students specifically interested in specialized laboratory practices.

MET 271 Corrosion and Corrosion Analysis (2-2) 4 Cr. Hrs.*Prerequisite:* MET 102, MET 114 or consent of department.

Corrosive processes including electrochemical reactions in metals and the chemical degradation of polymeric materials are emphasized. Topics covered in the course include basic electrochemical reactions, nature of corrosive environments, types of corrosion, laboratory corrosion testing, data analysis, interaction with mechanical behavior and fabricated dissimilar materials.

MET 280 Special Problems in Materials Science (3-2) 4 Cr. Hrs.*Prerequisite:* MET 211 or MET 215 or consent of instructor.

Students having adequate backgrounds in this discipline and/or catalog specified prerequisites are encouraged to select a topic associated with metallic or non-metallic materials, related processing, new developments or analytical techniques, and conduct investigations to identify problems, analyze data and make decisions. The results of such evaluations will be presented and reported in a systematic, critical scientific format. Scientific methods including literature search, laboratory evaluations and experimentation are encouraged. Likewise, faculty-directed study will be provided.

MUSIC**MUSIC 104 Basic Materials in Music Theory (3-0) 3 Cr. Hrs.***Prerequisite:* None.

This course provides a step by step approach to the fundamentals of music including notation, scales, intervals and triads.

MUSIC 105 Music Appreciation (3-0) 3 Cr. Hrs.*Prerequisite:* None.

An introduction to music, designed especially to increase understanding and enjoyment of music through intelligent listening. No technical knowledge required, but outside listening and attendance at live performances are required.

MUSIC 107 Music for Elementary Teachers (3-2) 4 Cr. Hrs.*Prerequisite:* None.

This course will provide students with knowledge about fundamental concepts in music such as rhythm, harmony and form through participation in musical behaviors such as playing instruments, moving and singing. It also will provide opportunities for students to develop and execute lessons that address these concepts as well as employing music to facilitate learning in other academic areas such as math, science and language arts. The course is recommended for elementary education majors.

MUSIC 114 Voice Class 1 Elements—Beginners (2-0) 2 Cr. Hrs.*Prerequisite:* None.

This is the first in a series of four voice classes for students interested in developing their vocal skills. This class is designed for young or beginning singers or for singers wishing to refresh their focus on the elements upon which the cultivation of the singing voice is built.

MUSIC 116 Voice Class 2 Cultivation—Intermediate (2-0) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

This is the second in a series of four voice classes for students interested in developing their vocal skills. This is a voice class for singers of intermediate level or for singers wishing to refresh their understanding of the study and cultivation of the singing voice.

MUSIC 117 Choir 1 (2-1) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

This is the first course in which students will explore the principles of choral singing and musicianship. Music of all styles and periods will be included. Choir is an elective for all students, regardless of major field. Additional Choir credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 118, 217 and 218.

MUSIC 118 Choir 2 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 117 or consent of instructor.

This is the second course in which students will explore the principles of choral singing and musicianship. Music of all styles and periods will be included. Choir is an elective for all students, regardless of major field. Additional Choir credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 217 and 218.

MUSIC 121 Class Piano 1 (2-0) 2 Cr. Hrs.*Prerequisite:* None.

This is the first class in a two course sequence of group piano instruction designed for students with little or no formal piano training. Instruction is given on both electronic and acoustic instruments.

MUSIC 122 Class Piano 2 (2-0) 2 Cr. Hrs.*Prerequisite:* MUSIC 121 or equivalent.

This is the second class in a two course sequence of group piano instruction designed for students with little or no formal piano training. Instruction is given on both electronic and acoustic instruments.

MUSIC 124 Chamber Singers 1 (1-1) 1 Cr. Hr.*Prerequisite:* Consent of instructor.

This is the first course in which students will explore the concepts of singing and musicianship involved in performing choral music composed for chamber ensemble as well as vocal music composed for chamber ensemble. Music of all styles and periods historically appropriate for a choral chamber ensemble will be included. Chamber Singers is an elective for all students, regardless of major field. Additional Chamber Singers credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 127, 224 and 227.

MUSIC 127 Chamber Singers 2 (1-1) 1 Cr. Hr.*Prerequisite:* MUSIC 124 or consent of instructor.

This is the second course in which students will explore the concepts of singing and musicianship involved in performing choral music composed for chamber ensemble as well as vocal music composed for chamber ensemble. Music of all styles and periods historically appropriate for a choral chamber ensemble will be included. Chamber Singers is an elective for all students, regardless of major field. Additional Chamber Singers credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 224 and 227.

MUSIC 131 Applied Music—Piano 1 (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Every student studying piano at Schoolcraft College begins with MUSIC 131. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 132 Applied Music—Piano 2 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 131.

This is the second in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 133 Applied Music—Voice 1 (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Every student studying voice at Schoolcraft College begins with MUSIC 133. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 134 Applied Music—Voice 2 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 133.

This is the second in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 135 Applied Music—Instrumental 1 (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Every student studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College begins with MUSIC 135. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 136 Applied Music—Instrumental 2 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 135.

This is the second class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 137 Sight Singing and Ear Training 1 (2-0) 2 Cr. Hrs.*Prerequisite:* A basic knowledge of scales, key signatures, intervals and triads.

This course will focus on sight singing melodies outlining the intervals of I and V chords of first and second inversion and non-harmonic tones. The course will include simple rhythmic, melodic and harmonic dictations.

MUSIC 138 Sight Singing and Ear Training 2 (2-0) 2 Cr. Hrs.*Prerequisite:* MUSIC 137.

This is the second course in the Sight Singing and Ear Training sequence. It will cover sight singing melodies, outlining intervals of all triads and dominant seventh chords. In addition, harmonic, melodic, rhythmic dictation, altered non-harmonic tones, secondary dominants, modulation to closely related keys and borrowed altered harmonies will be explored.

MUSIC 140 Jazz Lab Band—Improvisation 1 (2-1) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

This group is geared to the less experienced jazz player interested in performing contemporary jazz music in the big band setting, but with some emphasis on improvisation. The Lab Band will perform at concerts during the school year. The class is open to all students, high school and college, and members of the community. An audition at the beginning of each semester is required. Additional Jazz Lab Band Improvisation credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 240, 258 and 259.

MUSIC 141 Wind Ensemble 1 (2-1) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

The Schoolcraft Wind Ensemble is open to all brass, woodwind and percussion instrumentalists regardless of major field. The ensemble performs several concerts during the semester as well as at all college commencements. Additional Wind Ensemble credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 241, 245 and 246.

MUSIC 142 Jazz Band 1 (2-1) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

The Schoolcraft Jazz Band is open to all aspiring jazz performers regardless of major field. The ensemble studies literature from the big band era up through modern jazz arrangements and performs several concerts during the semester. Additional Jazz Band credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 242, 248 and 249.

MUSIC 143 Practice Teaching and Practicum in Piano Teaching 1 (1-1) 2 Cr. Hrs.*Prerequisite:* Consent of Department.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the first semester of piano study.

MUSIC 144 Practice Teaching and Practicum in Piano Teaching 2 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 143.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the second semester of piano study.

MUSIC 149 Popular Music Culture in America (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course serves as an introduction to some of the great works of popular music in the United States, from the songs of colonial America to the present. The course will cover the major periods/styles in popular American music history including but not limited to music of the Westward movement, rag-time and blues, the roots and growth of jazz, country music, folk music, music of Broadway and Tin Pan Alley, the roots and development of rock music and late 20th century developments in popular music, as well as historical, political and sociological background of the United States as pertinent to music history. A background in music is not required.

MUSIC 153 Music Theory 1 (3-0) 3 Cr. Hrs.*Prerequisite:* A basic knowledge of scales, key signatures, intervals and triads.

Harmonic progression; chords of 1st and 2nd inversion will be the format of this course. Phrase structure and cadences will be introduced. Technique of harmonization and non-harmonic tones will be explored.

MUSIC 154 Music Theory 2 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 153.

This is the second course in the Music Theory sequence. Students will be introduced to chord progressions, harmonization, non-dominant seventh chords, altered non-harmonic tones, secondary dominants and modulation to closely-related keys. Students will be introduced to music notation software. Students will create an original composition.

MUSIC 155 History of Broadway (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will look at the history and development of the Broadway musical, from its roots in early American musical entertainment and classical European opera, its heyday in the post-modern era and its evolution in the late 20th century as a result of the music publishing and recording industry. In addition, the course will take an in-depth look at the music and structure of several Broadway masterpieces and how they affected and were affected by American popular culture.

MUSIC 164 Music History 1—17th and 18th Centuries (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course will be a detailed survey of literature, history and musical materials of the Baroque and Classical eras.

MUSIC 165 Music History 2—19th and 20th Centuries (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is a detailed survey of history and literature of music of the Romantic and 20th century eras.

MUSIC 168 Synthesizer Ensemble 1 (2-1) 3 Cr. Hrs.*Prerequisite:* MUSIC 121 or consent of instructor.

The Schoolcraft Synthesizer Ensemble is open to all musicians with keyboard skills, regardless of major field. The ensemble performs original music and transcribed literature of many genres on electronic musical instruments. The group performs several concerts during the semester. Additional Synthesizer credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 169, 268 and 269.

MUSIC 169 Synthesizer Ensemble 2 (2-1) 3 Cr. Hrs.*Prerequisite:* MUSIC 168 or consent of instructor.

This is the second Schoolcraft Synthesizer Ensemble course which is open to all musicians with keyboard skills, regardless of major field. The ensemble performs original music and transcribed literature of many genres on electronic musical instruments. The group performs several concerts during the semester. Additional Synthesizer credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 268 and 269.

MUSIC 171 Music Technology 1 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 121, MUSIC 104 and or equivalent.

This course is an introduction to the fundamentals of music-making using computer hardware and software. The course will examine the basic functions of digital audio workstation (DAW) software as well as hardware and software synthesizers through hands-on experience and experimentation. The course will also introduce the student to current software applications that emphasize music performance and composition with the assistance of MIDI hardware and a desktop computer.

MUSIC 172 Music Technology 2 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 171.

This course will deal with advanced functions of Digital Audio Workstation (DAW) software and synthesis with the assistance of MIDI hardware and a desktop computer.

MUSIC 201 Keyboard Skills for Piano Teachers 1 (2-0) 2 Cr. Hrs.*Prerequisite:* Consent of Department.

This is the first course in the Keyboard Skills for Piano Teachers sequence; it is designed to give piano teachers the necessary keyboard skills for teaching beginning through early intermediate level students. The course will cover technical exercises, harmonization, transposition and sight-reading material using the standards of the Michigan Music Teachers Association, the National Piano Guild and other recognized testing organizations.

MUSIC 202 Keyboard Skills for Piano Teachers 2 (2-0) 2 Cr. Hrs.*Prerequisite:* MUSIC 201.

This is the second course in the Keyboard Skills for Piano Teachers sequence; it is designed to give piano teachers the necessary keyboard skills for teaching intermediate through late intermediate level students. The course will cover technical exercises, harmonization, transposition and sight-reading material using the standards of the Michigan Music Teachers Association, the National Piano Guild and other recognized testing organizations.

MUSIC 204 Keyboard Skills for Piano Teachers 3 (2-0) 2 Cr. Hrs.*Prerequisite:* MUSIC 202.

This is the third course in the Keyboard Skills for Piano Teachers sequence; it is designed to give piano teachers the necessary keyboard skills for teaching late intermediate through early advanced level students. The course will cover technical exercises, harmonization, transposition and sight-reading material using the standards of the Michigan Music Teachers Association, the National Piano Guild and other recognized testing organizations.

MUSIC 205 Keyboard Skills for Piano Teachers 4 (2-0) 2 Cr. Hrs.*Prerequisite:* MUSIC 204.

This is the fourth course in the Keyboard Skills for Piano Teachers sequence; it is designed to give piano teachers the necessary keyboard skills for teaching advanced level students. The course will cover technical exercises, harmonization, transposition and sight-reading material using the standards of the Michigan Music Teachers Association, the National Piano Guild and other recognized testing organizations.

MUSIC 214 Voice Class 3 Performance—Advanced (2-0) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

This is the third in a series of four voice classes for students interested in developing their vocal skills. It is a voice class for singers preparing for a career in singing or for advanced singers wishing to learn the art of performance before an audience.

MUSIC 216 Voice Class 4 Performance—Advanced (2-0) 2 Cr. Hrs.*Prerequisite:* Consent of instructor.

This is the final course in a series of four voice classes for students interested in developing their vocal skills. This is a voice class for singers preparing for a career in singing or for advanced singers wishing to learn the art of performance before an audience.

MUSIC 217 Choir 3 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 118 or consent of instructor.

This is the third course in which students will explore the principles of choral singing and musicianship. Music of all styles and periods will be included. Choir is an elective for all students, regardless of major field. Additional Choir credits may be earned in a future semester by enrolling in MUSIC 218.

MUSIC 218 Choir 4 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 217 or consent of instructor.

This is the fourth and last course in which students will explore the principles of choral singing and musicianship. Music of all styles and periods will be included. Choir is an elective for all students, regardless of major field.

MUSIC 224 Chamber Singers 3 (1-1) 1 Cr. Hr.*Prerequisite:* MUSIC 127 or consent of instructor.

This is the third course in which students will explore the concepts of singing and musicianship involved in performing choral music composed for chamber ensemble as well as vocal music composed for chamber ensemble. Music of all styles and periods historically appropriate for a choral chamber ensemble will be included. Chamber Singers is an elective for all students, regardless of major field. Additional Chamber Singers credits may be earned in future semesters by enrolling in the following course: MUSIC 227.

MUSIC 227 Chamber Singers 4 (1-1) 1 Cr. Hr.*Prerequisite:* MUSIC 224 or consent of instructor.

This is the last course in which students will explore the principles of singing and musicianship involved in performing choral music composed for chamber ensemble as well as vocal music composed for chamber ensemble. Music of all styles and periods historically appropriate for a choral chamber ensemble will be included. Chamber Singers is an elective for all students, regardless of major field.

MUSIC 231 Applied Music—Piano 3 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 132.

This is the third course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 232 Applied Music—Piano 4 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 231.

This is the fourth course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 233 Applied Music—Voice 3 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 134.

This is the third in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 234 Applied Music—Voice 4 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 233.

This is the fourth in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 235 Applied Music—Instrumental 3 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 136.

This is the third class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 236 Applied Music—Instrumental 4 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 235.

This is the fourth class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 240 Jazz Lab Band—Improvisation 2 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 140 or consent of instructor.

This group is geared to the less experienced jazz player interested in performing contemporary jazz music in the big band setting, but with some emphasis on improvisation. The Lab Band will perform at concerts during the school year. This is the second course in a series and the class is open to all students, high school and college, and members of the community. An audition at the beginning of each semester is required. Additional Jazz Lab Band Improvisation credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 258 and 259.

MUSIC 241 Wind Ensemble 2 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 141 or consent of instructor.

This is the second Schoolcraft Wind Ensemble course which is open to all brass, woodwind and percussion instrumentalists regardless of major field. The ensemble performs several concerts during the semester as well as at all college commencements. Additional Wind Ensemble credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 245 and 246.

MUSIC 242 Jazz Band 2 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 142 or consent of instructor.

This is the second Schoolcraft Jazz Band course which is open to all aspiring jazz performers regardless of major field. The ensemble studies literature from the big band era up through modern jazz arrangements and performs several concerts during the semester. Additional Jazz Band credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 248 and 249.

MUSIC 243 Practice Teaching and Practicum in Piano Teaching 3 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 144.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the third semester of piano study.

MUSIC 244 Practice Teaching and Practicum in Piano Teaching 4 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 243.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the fourth semester of piano study.

MUSIC 245 Wind Ensemble 3 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 241 or consent of instructor.

This is the third Schoolcraft Wind Ensemble course which is open to all brass, woodwind and percussion instrumentalists regardless of major field. The ensemble performs several concerts during the semester as well as at all college commencements. Additional Wind Ensemble credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 246.

MUSIC 246 Wind Ensemble 4 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 245 or consent of instructor.

This is the fourth Schoolcraft Wind Ensemble course which is open to all brass, woodwind and percussion instrumentalists regardless of major field. The ensemble performs several concerts during the semester as well as at all college commencements.

MUSIC 247 Piano Teaching Techniques and Materials 1 (3-0) 3 Cr. Hrs.*Prerequisite:* Consent of Department.

This course is designed for teachers enrolled in the Piano Teaching Certificate Program or students who have special permission from the Director of the Piano Department. This introductory level course focuses on the following topics: developing a professional piano student, setting up a small business, elementary methods and materials, supplemental materials in sight reading, harmonization, transposition and knowledge of professional organizations.

MUSIC 248 Jazz Band 3 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 242 or consent of instructor.

This is the third Schoolcraft Jazz Band course which is open to all aspiring jazz performers regardless of major field. The ensemble studies literature from the big band era up through modern jazz arrangements and performs several concerts during the semester. Additional Jazz Band credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 249.

MUSIC 249 Jazz Band 4 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 248 or consent of instructor.

This is the fourth Schoolcraft Jazz Band course which is open to all aspiring jazz performers regardless of major field. The ensemble studies literature from the big band era up through modern jazz arrangements and performs several concerts during the semester.

MUSIC 250 Music Theory 3 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 154.

This is the third course in the Music Theory sequence. Students will be introduced to borrowed chords, augmented and Neapolitan sixth chords, diminished seventh chords, chromatic mediants and modulation to foreign keys. Students will also analyze 18th and 19th century compositions.

MUSIC 252 Music Theory 4 (4-0) 4 Cr. Hrs.*Prerequisite:* MUSIC 250.

This is the last course in the Music Theory sequence. Students will be introduced to 18th century counterpoint: the study, analysis and composition of two-voice invention and three-voice fugue. The student will also be introduced to 20th century forms and harmonic tendencies: study, analysis and composition of work utilizing the 12-tone system will be among the techniques explored.

MUSIC 253 Practice Teaching and Practicum in Piano Teaching 5 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 244.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the fifth semester of piano study.

MUSIC 256 Practice Teaching and Practicum in Piano Teaching 6 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 253.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the sixth semester of piano study.

MUSIC 257 Piano Teaching Techniques and Materials 2 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 247 or consent of department.

This course is designed for teachers enrolled in the Piano Teaching Certificate Program. It is the second course in a series and emphasizes techniques and methods for teaching the intermediate piano student.

MUSIC 258 Jazz Lab Band—Improvisation 3 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 240 or consent of instructor.

This group is geared to the less experienced jazz player interested in performing contemporary jazz music in the big band setting, but with some emphasis on improvisation. The Lab Band will perform at concerts during the school year. This is the third course in a series and the class is open to all students, high school and college, and members of the community. An audition at the beginning of each semester is required. Additional Jazz Lab Band Improvisation credits may be earned in future semesters by enrolling in MUSIC 259.

MUSIC 259 Jazz Lab Band—Improvisation 4 (2-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 258 or consent of instructor.

This group is geared to the less experienced jazz player interested in performing contemporary jazz music in the big band setting, but with some emphasis on improvisation. The Lab Band will perform at concerts during the school year. This is the fourth course in a series and the class is open to all students, high school and college, and members of the community. An audition at the beginning of each semester is required.

MUSIC 263 Practice Teaching and Practicum in Piano Teaching 7 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 256.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the seventh semester of piano study.

MUSIC 264 Practice Teaching and Practicum in Piano Teaching 8 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 263.

Piano teachers will learn to create and present effective lesson plans that include repertoire, theory concepts, rhythm, tone, touch and hand position through the eighth semester of piano study.

MUSIC 268 Synthesizer Ensemble 3 (2-1) 3 Cr. Hrs.*Prerequisite:* MUSIC 169 or consent of instructor.

This is the third Schoolcraft Synthesizer Ensemble course which is open to all musicians with keyboard skills, regardless of major field. The ensemble performs original music and transcribed literature of many genres on electronic musical instruments. The group performs several concerts during the semester. Additional Synthesizer credits may be earned in future semesters by enrolling in the following course sequence (one course per semester): MUSIC 269.

MUSIC 269 Synthesizer Ensemble 4 (2-1) 3 Cr. Hrs.*Prerequisite:* MUSIC 268 or consent of instructor.

This is the fourth Schoolcraft Synthesizer Ensemble class which is open to all musicians with keyboard skills, regardless of major field. The ensemble performs original music and transcribed literature of many genres on electronic musical instruments. The group performs several concerts during the semester.

MUSIC 277 Piano Teaching Techniques and Materials 3 (3-0) 3 Cr. Hrs.*Prerequisite:* MUSIC 257 or consent of department.

This course is designed for teachers enrolled in the Piano Teaching Certificate Program. It is the third course in a series and emphasizes techniques and methods for teaching the late intermediate and early advanced piano student.

MUSIC 282 Applied Music—Piano 5 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 232.

This is the fifth course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 283 Applied Music—Piano 6 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 282.

This is the sixth course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 284 Applied Music—Piano 7 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 283.

This is the seventh course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 285 Applied Music—Piano 8 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 284.

This is the eighth course in the sequence of piano classes offered at Schoolcraft College. This course includes one 45-minute private lesson weekly, a two-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 286 Applied Music—Voice 5 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 234.

This is the fifth in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 287 Applied Music—Voice 6 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 286.

This is the sixth in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 288 Applied Music—Voice 7 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 287.

This is the seventh in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 289 Applied Music—Voice 8 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 288.

This is the eighth in the sequence of voice classes at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required daily practice as assigned by the instructor. Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 290 Applied Music—Instrumental 5 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 236.

This is the fifth class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 291 Applied Music—Instrumental 6 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 290.

This is the sixth class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 292 Applied Music—Instrumental 7 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 291.

This is the seventh class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 293 Applied Music—Instrumental 8 (1-1) 2 Cr. Hrs.*Prerequisite:* MUSIC 292.

This is the eighth class in the sequence of courses for students studying instruments of the band and orchestra, including classical guitar, at Schoolcraft College. This course includes one weekly private lesson, a one-hour weekly studio class and required practice (minimum of six hours for non-majors and varies according to specific major and transfer requirements for music majors). Students will be advised about appropriate daily practice time requirements, repertoire, skills, (for music majors) transfer requirements and required courses related to music curriculum. Performance examinations will be held at the end of each semester. This course is for music and non-music majors.

MUSIC 298 Special Music Projects for Honors Studies—Performance/Composition/Research (2-0) 2 Cr. Hrs.*Prerequisite:* A minimum of 45 credit hours completed toward a Music AFA degree or consent of department.

This course provides an opportunity for the talented student to explore individually, in depth, under the direction of a faculty member, a performance, composition or research related project. This course provides an opportunity to present traditional musical events such as a recital or a concert or to learn a new technology.

MUSIC 299 Special Music Projects for Honors Studies—Performance/Composition/Research (2-0) 2 Cr. Hrs.*Prerequisite:* A minimum of 45 credit hours completed toward a Music AFA degree or consent of department.

This course provides an opportunity for the talented student to explore individually, in depth, under the direction of a faculty member, a performance, composition or research related project. This course provides an opportunity to present traditional musical events such as a recital or a concert or to learn a new technology.

NURSING

NURS 102 Nursing Informatics (1-0) 1 Cr. Hr.*Prerequisite:* Acceptance to the Nursing Career Ladder Curriculum for the forthcoming year.

This course provides an introduction to computers and their use in health-care. Technology and internet applications will be discussed and utilized as tools for the nursing student and nurse to provide optimal patient care. Medical terminology and keyboarding skills are introduced and reinforced.

NURS 104 Pharmacology for Nurses (3-0) 3 Cr. Hrs.*Prerequisite:* Acceptance to the Nursing Career Ladder Curriculum for the forthcoming or current year.

This course introduces pharmacological concepts and major drug classifications. Drug information includes mechanism of action, drug effects, therapeutic uses, side effects, adverse effects, toxicity, drug interactions, medication calculations and dosages, example drugs and patient teaching for specified drug classifications. The nursing process will be utilized to provide beginning knowledge related to safe medication administration.

- NURS 110 Fundamentals of Nursing (5-12) 9 Cr. Hrs.**
Prerequisite: Acceptance to the Nursing Career Ladder Curriculum for the forthcoming year.
 This course provides an introduction to the theory and practice of nursing. The student will apply knowledge of health, nutrition, spiritual/cultural diversity, gerontological concepts and ethical/legal standards. Utilization of critical thinking, the nursing process and psychosocial principles will be necessary to meet the needs of the chronically ill and elderly patient. Basic nursing skills will be performed in laboratory, clinical and community settings.
- NURS 124 Medical Nursing (2.5-7.5) 5 Cr. Hrs.**
Prerequisite: NURS 102, NURS 104, NURS 110 and BIOL 114.
 This course emphasizes application of the nursing process and critical thinking skills in caring for adult clients experiencing medical alterations. Theoretical content will focus on cardiovascular, renal, endocrine and immune systems as well as fluid/electrolyte and acid base balance while utilizing evidence-based principles of nursing to promote optimal health in acute and community settings.
- NURS 125 Surgical Nursing (2.5-7.5) 5 Cr. Hrs.**
Prerequisite: NURS 102, NURS 104, NURS 110 and BIOL 114.
 This course emphasizes application of the nursing process and critical thinking skills in caring for adult clients experiencing surgical alterations. Theoretical content will focus on musculoskeletal, neurological, respiratory and gastrointestinal systems as well as peri-operative care while utilizing evidence-based principles of nursing to promote optimal health in acute and community settings.
- NURS 128 Maternal-Child Nursing 1 (2.5-7.5) 5 Cr. Hrs.**
Prerequisite: NURS 102, NURS 104, NURS 110 and BIOL 114.
 This course emphasizes application of the nursing process and critical thinking skills in caring for the childbearing family and pediatric clients. Theoretical content will focus on human sexuality, normal pregnancy, labor, delivery, post partum, growth and development and common uncomplicated pediatric health disorders. Clinical practice will include maternity and pediatric experiences in acute and community settings.
- NURS 139 Advanced Concepts in Practical Nursing (1.5-4.5) 3 Cr. Hrs.**
Prerequisite: NURS 124, NURS 125, NURS 128 and PSYCH 239 (may be taken concurrently).
 This capstone course covers advanced medical-surgical topics as well as issues related to licensure and employment for the practical nurse. In clinical practice, emphasis is placed on functioning with greater independence in providing care to groups of patients. Students gain experience as an active member of the nursing team while working with staff personnel.
- NURS 245 Advanced Medical-Surgical Nursing (2.5-7.5) 5 Cr. Hrs.**
Prerequisite: NURS 124, NURS 125 and NURS 128.
 This course emphasizes application of the nursing process and critical thinking skills in caring for adult clients experiencing complex medical and/or surgical alterations. Theoretical content will focus on selected body systems while utilizing evidence-based principles of nursing to promote optimal health in acute and community settings.

- NURS 246 Psychiatric Mental Health Nursing (2-6) 4 Cr. Hrs.**
Prerequisite: NURS 124, NURS 125, NURS 128 and PSYCH 239.
 This course emphasizes application of the nursing process and critical thinking skills in caring for adult, child and adolescent clients experiencing acute or chronic alterations in biopsychosocial functioning. Theoretical content will focus on psychiatric and cognitive disorders as well as difficulties coping with daily living. Clinical experiences are provided in acute and community settings.
- NURS 248 Maternal-Child Nursing 2 (2.5-7.5) 5 Cr. Hrs.**
Prerequisite: NURS 124, NURS 125 and NURS 128.
 This course emphasizes application of the nursing process and critical thinking skills in caring for the childbearing family and pediatric clients. Theoretical content will focus on complex obstetrical and pediatric health disorders. Clinical practice will include maternity and pediatric experiences in acute and community settings.
- NURS 259 Advanced Concepts in Registered Nursing (2-9) 5 Cr. Hrs.**
Prerequisite: NURS 245, NURS 246 and NURS 248.
 This capstone course emphasizes application of the nursing process and critical thinking skills to care for groups of complex clients as an active member of the nursing team in acute and community settings. Theoretical content will focus on principles of leadership and management as well as issues related to licensure and employment for the registered nurse.

NURSING ASSISTANT TRAINING PROGRAM

- NATP 110 Nursing Assistant Preparation (3-7) 10 Cr. Hrs.**
Prerequisite: The Nursing Assistant Preparation course is open only to students who are officially admitted to the Nursing Assistant Training Program.
 This course is designed to prepare an individual in the role of the nursing assistant. Students will explore communication and interpersonal skills, infection control, safety/emergency procedures, promotion of resident's independence/rights, basic nursing skills, personal and restorative care skills, care of mental health and social services needs, care of cognitively impaired residents and documentation. Basic nursing assistant skills will be performed in laboratory and geriatric-focused clinical facilities.

OFFICE INFORMATION SYSTEMS

- OIS 100 Keyboarding 1 (2-0) 2 Cr. Hrs.**
Prerequisite: None.
 Students will learn how to keyboard using the touch control method. Development of proper keyboarding techniques while building basic accuracy and speed will be emphasized. Today's technology-driven environment makes keyboarding one of the most widely used skills as we utilize computers for work, school and in our personal lives.
- OIS 102 Keyboarding 2 (2-0) 2 Cr. Hrs.**
Prerequisite: OIS 100 or equivalent.
 This course continues the development of accuracy and speed in keyboarding. Students will enhance their keyboarding skills and incorporate them into the formatting of various business documents, reports and tables.

- OIS 105 Office Communication—Editing Skills (3-0) 3 Cr. Hrs.**
Prerequisite: A skill level of ENG 050 or higher on the placement test.
 OIS 102 strongly recommended.
 The ability to communicate clearly and accurately has been identified by employers as their number one priority. This course is designed to review and incorporate the principles of grammar, punctuation, vocabulary and spelling into the writing of or proofreading and editing of business documents.
- OIS 165 Microsoft Word for Windows (3-0) 3 Cr. Hrs.**
Prerequisite: OIS 105 or equivalent.
 This course is designed to provide practical hands-on experience using Microsoft Word for Windows. Students will create, format and edit business documents. In addition, students will work with tables, charts, graphs, diagrams, templates and wizards, AutoText, Web pages and hyperlinks. While manipulating text, students will learn to add visual appeal to documents as well as how to use writing tools and special features.
- OIS 185 Business Presentation 1—Fundamental Concepts (3-0) 3 Cr. Hrs.**
Prerequisite: OIS 165 or equivalent.
 This course will introduce students to the fundamental concepts of business presentations using Microsoft's PowerPoint software. PowerPoint presentations are one of the most widely used communication tools in today's workplace. Students will create basic business presentations, charts, graphs and flyers. Students will learn to link and embed objects and files as well as work with drawing tools, icons, various fonts and color to create a powerful presentation.
- OIS 195 Time and Project Management (1-0) 1 Cr. Hr.**
Prerequisite: None.
 In today's busy world, time management is an essential skill needed both professionally and personally. This course will assist students in gaining control of their office activities by showing them how to set and prioritize goals and events around individual values using a day planner.
- OIS 255 Office Procedures (2-0) 2 Cr. Hrs.**
Prerequisite: OIS 100 or equivalent.
 This course is designed to enhance the students' knowledge regarding basic office skills. Students will learn office functions such as reprographics, records management, telephone techniques and etiquette, mailing and shipping services, meeting and conference planning, travel arrangements, as well as the importance of written communication and public relations.
- OIS 260 Office Administration (3-0) 3 Cr. Hrs.**
Prerequisite: OIS 255 recommended.
 Today's administrative office manager must be an effective communicator who possesses strong skills in problem solving, time management, multitasking and human relations. This course concentrates on the principles of administrative office management, the importance of managing administrative services and operations and the skills and attitudes needed to be successful in today's office.

- OIS 265 Advanced Microsoft Word for Windows (3-0) 3 Cr. Hrs.**
Prerequisite: OIS 165.
 This course is a continuation of OIS 165 and will focus on the advanced functions of Microsoft Word for Windows. Students will create and modify styles, macros, footnotes and endnotes. In addition, students will work with sorting and selecting text, merging and managing documents, preparing forms, applying special features, adding visual effects and using WordArt.

PHARMACY

PHARM 101 Introduction to Pharmacy (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course will provide students with an overview of pharmacy and possible careers within the pharmacy field. Students will be presented a survey of the profession including its history, development, career opportunities, educational requirements, professional organizations, scope of practice, regulation, ethical foundations, contemporary issues and prospects for the future. In this course, students will self-assess their career compatibility within the field of pharmacy.

PHARM 201 Capstone—Portfolio Preparation

Prerequisite: PHARM 101. Must have taken PCAT or registered to take it during this course.

This course concludes the Pre-Pharmacy Program with the student's development of his/her admission portfolio for a prospective transfer university. Students will review their college learning experience as they collect, organize, and reflect upon evidence that demonstrates their attitudes, skills, knowledge and abilities in the sciences, mathematics and general education areas, according to the requirements of the transfer institution. In addition, students are required to take the PCAT (Pharmacy College Admission Test) for inclusion of results in the admission portfolio.

PHILOSOPHY

PHIL 243 An Introduction to Philosophy (3-0) 3 Cr. Hrs.

Prerequisite: None.

Designed to familiarize the student with philosophy as a foundation for life, this course provides an introduction to questions in metaphysics, epistemology, ethics, social and political philosophy and the philosophy of religion. Classical and modern philosophers from Western, Asian, African and Native American traditions are presented. Critical thinking and an application of theory to contemporary issues are emphasized.

PHIL 247 Logic (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is designed to assist the student in distinguishing good and bad reasoning. The course will address both informal logic which focuses on arguments in everyday language and how to evaluate them and formal logic which focuses on symbolic language and the formal methods for determining the validity of arguments. Common logical fallacies will be outlined and attention given to arguments on contemporary issues in the public forum.

PHIL 257 Bioethics (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course introduces students to a variety of ethical issues having to do with biology, health and medicine. Students will be introduced to ethical theories and will critically examine various central issues in bioethics. Topics may include: end of life treatment, abortion, allocation of scarce materials, organ donation, the vaccine debate, animal rights, informed consent, justice and healthcare, genetic engineering and the meaning of life/death and technology.

PHIL 277 Ethical Problems (3-0) 3 Cr. Hrs.*Prerequisite:* None.

In this course the student will be introduced to a variety of ethical theories as discussed by classical and contemporary moralists. The course experience also provides for an application of these theories to modern moral questions through a process of critical thinking to explore alternate solutions to present day moral problems.

PHYSICAL EDUCATION

PE 104 Physical Fitness and Conditioning (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course stresses vigorous body conditioning through progressive exercises, stretching, weight machine and free weight use. Cardiovascular fitness will be emphasized.

PE 105 Beginning Resistance Training (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Instruction will stress the development of strong muscle growth and bone health, as well as improvement of cardiovascular function through the use of resistance bands, X-er tubes, stability balls and free weights.

PE 106 Beginning Swimming (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course is for the student who has little or no skill and knowledge of swimming techniques. Fundamental instruction in the basic swimming strokes, including front crawl, back crawl, elementary back stroke, side stroke, elementary diving and water safety skills will be introduced.

PE 114 Pilates Mat Work (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course offers students an effective conditioning program for the entire body using a series of floor exercises to increase mobility, strength, flexibility and concentration. The exercise program is designed for those who want to improve core strength to maintain a healthy back, to ease into exercise and to improve posture and balance; it provides challenge with little to no impact to joints. Proper breathing and correct spinal alignment will be emphasized.

PE 115 Aerobic Dance Fitness (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Instruction will stress the development of an individual's aerobic capacity and cardiovascular endurance through aerobic dance and dance exercise.

PE 116 Intermediate Swimming (1-1) 2 Cr. Hrs.*Prerequisite:* None.

For students who have the ability to swim two lengths of the pool and stay afloat for three minutes. Designed to increase skill and knowledge in the basic swimming strokes, diving and water safety skills. Some stroke variations and synchronized swimming techniques may be covered.

PE 121 First Aid and Personal Safety (2-0) 2 Cr. Hrs.*Prerequisite:* None.

This course introduces accident prevention and care of victims using emergency-skill procedures. Cardiopulmonary resuscitation (CPR) for infant, child and adult and Automated External Defibrillator (A.E.D.) use will be presented. American Red Cross Certification Cards will be awarded to those successfully completing the requirements.

PE 132 Beginning Tennis (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course provides students with a basic history of tennis, techniques, fundamental skills, strategy, rules and the opportunity to participate in a competitive situation.

PE 141 Basketball (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course covers the history of the sport, basic techniques, fundamental skills, strategy and rules and gives students the opportunity to participate in a competitive situation.

PE 157 Paddleball/Racquetball (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course provides instruction in rules, safety practices, etiquette, strategy and skills of paddleball and racquetball. Tournament play in singles, doubles and cut-throat is included.

PE 166 Self Defense (1-1) 2 Cr. Hrs.*Prerequisite:* A physical examination is recommended.

This course combines various methods of self-defense with an emphasis on Judo. Related techniques of Jujitsu and Karate will be covered.

PE 194 Weight Training (1-1) 2 Cr. Hrs.*Prerequisite:* None.

Various methods of weight training for both men and women are taught. Proper lifting techniques learned. The concept of "total fitness and body awareness" is stressed.

PE 202 Lifestyle Fitness—Wellness (1-1) 2 Cr. Hrs.*Prerequisite:* None.

This course will introduce the student through lecture and practical demonstration to the various methods and benefits of physical and emotional fitness/wellness activities. A wide variety of topics pertinent to the physical and mental health and well-being of the individual will be presented and practiced, providing the framework for the student to make sound health choices.

PE 240 Physical Education for Elementary Teachers (3-0) 3 Cr. Hrs.*Prerequisite:* None.

Students will receive instruction in the use of basic movement, games, relays, stunts and organization for the early and later elementary grades. Emphasis is on the organization for P.E. at these levels. Students are required to make arrangements for observation of elementary classes during the latter part of the semester.

PHYSICS

PHYS 051 Basic Physics (4-1) 4 Cr. Hrs.*Prerequisite:* MATH 053 or one year of high school algebra.

This course is designed for students who have had no previous course in physics or need a review of the subject to prepare for college physics. Basic concepts in mechanics, sound, heat, electricity, light and modern physics are explored through lecture demonstrations, interactive activities and laboratory work.

PHYS 104 Introduction to Astronomy (3-2) 4 Cr. Hrs.*Prerequisite:* MATH 053 or one year of high school algebra.

PHYS 104 is a one-semester introduction to astronomy that utilizes laboratories and basic mathematics to assist in, and expand upon, the exploration of the course topics. Earth-sky relationships, the solar system, stellar astronomy, cosmology and astrobiology will be covered. Several space exploration missions will also be featured. This course is not intended for science majors.

PHYS 123 Applied Physics (4-2) 5 Cr. Hrs.*Prerequisite:* MATH 113.

This course in applied physics is designed for technical, business and applied health programs. Using trigonometry, the traditional topics of kinematics, dynamics, mechanics, heat, acoustics, electricity and magnetism, optics, modern physics and nuclear physics are treated in a practical and applied fashion with emphasis on laboratory work and scientific procedures. (This course may be used in place of PHYS 051.)

PHYS 181 General Physics 1 (4-2) 4 Cr. Hrs.*Prerequisite:* PHYS 051 or one year of high school physics or PHYS 123 and MATH 119.

This first semester course in general physics is designed for pre-professional students. Using algebra and trigonometry, the traditional topics of mechanics, fluids, energy, heat and sound are explored through lecture demonstrations, interactive activities and laboratory work. This course is not for engineering students or physics majors.

PHYS 182 General Physics 2 (4-2) 4 Cr. Hrs.*Prerequisite:* PHYS 181.

This second semester course is a continuation of PHYS 181. Using algebra and trigonometry, the more advanced topics of electricity, magnetism, light and modern physics are explored through lecture demonstrations, interactive activities and laboratory work. This course is not for engineering students or physics majors.

PHYS 211 Physics for Scientists and Engineers 1 (5-2) 5 Cr. Hrs.*Prerequisite:* PHYS 051 or high school physics and MATH 150.

This first semester, calculus-based course is designed for engineering students and science majors. Traditional topics of kinematics, dynamics, energy, fluids, heat, and sound are investigated through lecture demonstrations, simulations and laboratory work.

PHYS 212 Physics for Scientists and Engineers 2 (5-2) 5 Cr. Hrs.*Prerequisite:* PHYS 211 with grade of 2.0 or better.

This second semester, calculus-based course is a continuation of PHYS 211. Advanced topics such as electricity, magnetism, light and modern physics are investigated through lecture demonstration, simulations and laboratory work. This course is designed for engineering students and science majors.

POLITICAL SCIENCE

POLS 105 Survey of American Government (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is an introductory study of the American political system. Emphasis is placed on historical and contemporary political theories and ideologies as well as on political institutions, parties and interest groups. You will engage in analysis of decision-makers, power and controversial issues.

POLS 109 State and Local Government (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is an introductory study of America's state and local governments. Emphasis is placed on the nature of state constitutions, the structure and operation of state executive/legislative/judicial branches, and the organization and functioning of local governments. State/federal and state/local relations will also be covered in this course. Students will engage in analysis of decision-makers, power and controversial issues.

POLS 205 Political Parties (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course examines the organization and functions of American political parties. Emphasis is placed on the nature of political campaigns, party conventions, the organization and functioning of political parties and citizen participation in politics. A historical review of parties and their ideological developments is also included.

POLS 207 Comparative Government (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course is a comparative study of political communities. The course examines the development and spread of varied political ideologies (communism, fascism and liberalism) and their impact on crafting different approaches to governmental organization. A global approach to this topic will involve examining individual countries and regions from around the world.

POLS 209 International Relations (3-0) 3 Cr. Hrs.*Prerequisite:* None.

This course provides an examination of the social, economic and political forces that define international relations. Using the major theoretical approaches of the discipline, students will examine the major issues, actors and governmental structures that shape the political landscape of the world.

POLS 298 Political Science Honors Studies (.5-2.5) 3 Cr. Hrs.

Prerequisite: Successful completion of POLS 105 and written approval from the instructor and department representative.

An opportunity for a student to explore individually, in depth, under the guidance of a faculty member, a topic, issue, problem or fieldwork experience pertaining to or within a government office, political party, interest groups or other organization that allows them to relate their experiences to the study of political science. This study arrangement will take place under the guidance of a departmental faculty member.

PSYCHOLOGY

PSYCH 153 Human Relations (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is designed particularly for students in the career curricula. The course focuses upon a better understanding of human behavior as related to interpersonal relations on the job. Foundations of human behavior; strategies for effective human relations; fundamental skills of working as a team leader and team member; and ways of anticipating, preventing and coping with challenges of human relations are major areas of study.

PSYCH 201 Introductory Psychology (4-0) 4 Cr. Hrs.

Prerequisite: Recommended successful completion of courses in biology and social science at the 100 level.

Principles of human thought and action with emphasis on individuals in their environment; individual differences in intelligence and personality; effects of heredity and environment on the organism; and the nervous system, perception, learning, intelligence, motivation and emotion and social relationships will be explored.

PSYCH 205 Psychology of Adjustment (3-0) 3 Cr. Hrs.

Prerequisite: Twenty-six hours of transferable credit or consent of department.

Factors and processes involved in the adjustment of the individual to personal and social environment are the main focus of this course. Essentials for the development of an effective and mentally healthy individual are emphasized. Foundations for adjustment, personal lifestyle adjustment, interpersonal relationships, adjustment throughout life and coping with maladjustment are major areas of study.

PSYCH 206 Human Sexuality (3-0) 3 Cr. Hrs.

Prerequisite: PSYCH 201.

This course examines a variety of facets of human sexuality from the biological, psychological and social perspectives. We will investigate the intersections of sexuality and gender and survey the biological and psychological research concerned with constructs such as: anatomy, normative function, dysfunction and treatment, family planning methods, sexual communication, sexually transmitted diseases, sexual variation and attitudes toward one's body. Critical issues directly and indirectly associated with sexual behavior will also be addressed.

PSYCH 207 Social Psychology (4-0) 4 Cr. Hrs.

Prerequisite: PSYCH 201.

Regarded as a core area in psychology, social psychology examines the influence of social factors on human behavior. Particular topics include aggression, prejudice, group processes, attitude formation, the law, prosocial behavior, interpersonal attraction and social cognition.

PSYCH 209 Child Psychology (3-0) 3 Cr. Hrs.

Prerequisite: PSYCH 201.

This course examines the general characteristics of development, development of social behavior, feelings, emotions, language, growth of understanding and interests, with emphasis on personality and problems of adjustment.

PSYCH 219 Adult Development (3-0) 3 Cr. Hrs.

Prerequisite: Twenty-six hours of transferable credit or consent of department.

Successful completion of PSYCH 201 is highly recommended.

This course studies adult development and aging. It focuses on the developmental changes related to biological, psychological and social processes. Coping strategies and intervention techniques will be examined.

PSYCH 229 Life-Span Developmental Psychology (4-0) 4 Cr. Hrs.

Prerequisite: PSYCH 201.

Human development from conception through death is examined. Biological, cognitive and psychosocial development topics are explored with an understanding of the theories and research findings across the life-span.

PSYCH 239 Abnormal Psychology (3-0) 3 Cr. Hrs.

Prerequisite: PSYCH 201.

This course examines various psychological disorders from a contemporary perspective, specifically exploring anxiety disorders (phobias, obsessive compulsive disorder and post traumatic stress disorder), personality disorders (borderline, anti-social and dissociate disorders), mood disorders (depression and bi-polar disorder) and schizophrenia. The underlying pathology and treatments of each disorder will be covered.

PSYCH 249 Educational Psychology (3-0) 3 Cr. Hrs.

Prerequisite: None.

Principles of human thought and action with emphasis on individuals in their environment; individual differences in intelligence and personality; effects of heredity and environment on the organism; the nervous system, perception, learning, intelligence, motivation and emotion and social relationships will be explored.

QUALITY MANAGEMENT

QM 107 Quality Planning and Team Building (3-0) 3 Cr. Hrs.

Prerequisite: None.

Planning effective quality systems including error prevention through team building to support both recommended procedures and customer satisfaction is emphasized. Students will be introduced to planning methods, Six Sigma Methods, Quality Function Deployment (QFD), Failure Mode and Effects Analysis (FMEA) and new quality related programs used in process/product development validation. Control plans and teamwork will be used to demonstrate the dynamics of synergism in groups.

SOCIOLOGY

SOC 101 Introduction to Social Work (3-0) 3 Cr. Hrs.

Prerequisite: None.

Introduction to Social Work is an introductory course to the social work field designed to provide students with an overview of the profession. Content will include an analysis of the profession, its scope, methods, values and the organization of services. Attention will be paid to presenting information on policy and practice in a variety of social work settings with particular target populations. The course orients students to the roles of the generalist social work practitioner within a theoretical framework that consists of systems theory, the ecological perspective and a problem solving model. Attention will be paid to the kinds of needs and problems that bring clients to the attention of social workers. The term “client” is defined as an individual, family, group, neighborhood, organization or large social system. The course stresses self-assessment in determining suitability for a career in social work.

SOC 201 Principles of Sociology (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course provides a survey of the major theoretical perspectives, concepts and methods of sociology. Topics covered include social organization, culture, socialization, stratification systems, social institutions and social change.

SOC 205 Social Problems (3-0) 3 Cr. Hrs.

Prerequisite: SOC 201 recommended.

Consideration of current social problems, such as family stability, racism, sexism, poverty, crime, globalization and ecological problems using sociological theory and empirical studies. Analysis of structural factors underlying these problems and potential solutions will be explored.

SOC 209 Marriage and Family (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course offers a study of the impact that social changes have had on gender roles, relationships, marriage and family life. Topics covered in the course include diversity in family patterns, gender roles, intimate behavior, mate selection, problems of marital adjustment, family stability and crisis, divorce and parenting.

SOC 210 Cultural Diversity (3-0) 3 Cr. Hrs.

Prerequisite: SOC 201 or ANTH 112 recommended.

This course is an analysis of racial and ethnic diversity in the U.S. in relation to evolving social, economic and cultural factors. Various American minority cultures are studied with an emphasis on education, politics, religion and the resulting cultural effects. Sociological and psychological concepts and theories will be explored. The impact of the current wave of immigrants to the U.S. will be discussed and the incidents of hate crimes will be explored.

SOC 220 Urban Sociology (3-0) 3 Cr. Hrs.

Prerequisite: SOC 201 or ANTH 112 recommended.

This course provides a survey of the origin and development of cities and the processes of urbanization which includes a discussion of the ecology and social organization of urban life. The special problems and realities of urban society will be covered as well as perspectives for the future.

SOC 290 The Individual and Community—An Honors Capstone Course (3-0) 3 Cr. Hrs.

Prerequisite: HUM 190 and 75 Service Hours.

A required conclusion to the Schoolcraft Scholars Honors Program, this capstone course examines individual, social structural and social institutional relationships through multiple disciplines. Students will identify and analyze social and cultural trends and issues. During the course, students will complete and present results of service-learning projects.

SOUND RECORDING TECHNOLOGY

SRT 110 Keyboard Skills for Recording Engineers (1-0) 1 Cr. Hr.

Prerequisite: MUSIC 121.

Students will apply knowledge gained in MUSIC 121 to use with electronic keyboard instruments used in the modern recording studio. Emphasis is on the operation of modern electronic keyboard instruments, MIDI and developing the fundamental musical skills used in contemporary music production. These skills will be applied to individual projects in the laboratory.

SRT 121 Basic Sound and Recording Techniques 1 (3-0) 3 Cr. Hrs.

Prerequisite: None.

Fundamentals of the recording arts, including basic audio and acoustical theory, recording consoles, tape recorders, microphone design and technique, speakers and signal processing will be introduced in this course.

SRT 122 Basic Sound and Recording Techniques 2 (3-0) 3 Cr. Hrs.

Prerequisite: SRT 121.

Multi-track studio production techniques are developed through class discussion, demonstration and project assignments. Theory of digital audio technology and its integration into music production is emphasized.

SRT 150 Ear Training for Recording Engineers (2-0) 2 Cr. Hrs.

Prerequisite: SRT 121 or consent of department.

Listening skills particular to the recording engineer are developed through demonstration and ear training exercises. These skills include hearing and discriminating frequencies, levels, processing, phase, distortion and equalization. Application of these skills to multi-track mixing is emphasized and developed through hands-on assignments using a variety of professional mixing systems.

SRT 221 Advanced Audio Production 1 (3-0) 3 Cr. Hrs.

Prerequisite: SRT 122 and SRT 150.

This course is a comprehensive examination of the principles and applications of digital audio in today's recording and interactive media industries. Computer-based recording and editing is emphasized along with musical instrument digital interface (MIDI) technology.

SRT 222 Advanced Audio Production 2 (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course is a continuation of SRT 221 and recording in the digital domain. Areas of focus will include advanced mixing and editing techniques, synchronization, mastering, post-production and surround sound.

SPANISH

SPAN 101 Elementary Spanish 1 (4-0) 4 Cr. Hrs.

Prerequisite: None.

This course is intended for students who have no previous education in Spanish. The course will cover basic grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Hispanic culture will be an integral part of the course.

SPAN 102 Elementary Spanish 2 (4-0) 4 Cr. Hrs.

Prerequisite: SPAN 101 with grade of 2.0 or better or one year of high school Spanish or consent of instructor.

This course is a continuation of SPAN 101 and continues to review the basic Spanish grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Hispanic culture will be an integral part of the course.

SPAN 201 Intermediate Spanish 1 (4-0) 4 Cr. Hrs.

Prerequisite: SPAN 102 with grade of 2.0 or better or two years of high school Spanish or consent of instructor.

This course is a continuation of SPAN 102 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Hispanic culture will be an integral part of the course.

SPAN 202 Intermediate Spanish 2 (4-0) 4 Cr. Hrs.

Prerequisite: SPAN 201 with grade of 2.0 or better or three years of high school Spanish or consent of instructor.

This course is a continuation of SPAN 201 and continues to cover grammar patterns and build competence in all four skill areas: speaking, listening, reading and writing. Through varied activities, emphasis will be placed on oral proficiency and communication. An appreciation of Hispanic culture will be an integral part of the course.

THEATRE

THEA 101 Introduction to Theatre (3-0) 3 Cr. Hrs.

Prerequisite: None.

A survey course which examines all the elements of theatre: actor, director, playwright, scenery, costumes, makeup, lighting, sound, audience, theatre publicity, theatre management and critic. The course offers the opportunity for developing an appreciation of theatre and how it relates to the world.

THEA 120 Theatre Activities 1 (1-0) 1 Cr. Hr.

Prerequisite: None.

A brief introduction to all the elements of theatre: actor, director, playwright, scenery, costumes, makeup, lighting, sound, audience, theatre publicity, theatre management and critic. Students are required to work on a current production.

THEA 121 Theatre Activities 2 (1-0) 1 Cr. Hr.

Prerequisite: THEA 120 recommended.

This course is a continuation of THEA 120 and continues to explore all the elements of theatre: actor, director, playwright, scenery, costumes, makeup, lighting, sound, audience, theatre publicity, theatre management and critic. Students are required to work on a current production.

THEA 204 Stage Makeup (2-0) 2 Cr. Hrs.

Prerequisite: None.

An introductory course in stage makeup application. The course covers basic makeup, character makeup, old-age makeup and special effects. Discussion on types of makeup and practical student application projects.

THEA 207 Stagecraft and Lighting (3-0) 3 Cr. Hrs.

Prerequisite: None.

This course investigates stage designs and lighting theories with a practical application by work on the college production. The course also covers the basic knowledge of set construction, lighting and its equipment, costume construction, makeup techniques and costume maintenance. Students are required to work on a current production.

THEA 208 Acting 1 (3-0) 3 Cr. Hrs.

Prerequisite: None.

A beginning course to prepare the actor for acting. Training in voice and body development that not only is applicable to the stage but to daily life is covered. Exercise work in concentration, relaxation, awareness, sensitivity and body alignment is introduced and applied to scene work from modern drama.

THEA 209 Acting 2 (3-0) 3 Cr. Hrs.

Prerequisite: THEA 208 or consent of instructor.

An advanced course in the preparation of an actor for acting. Training in voice and body development with an emphasis on studying and applying the Stanislavski Method and the Alexander Technique of body alignment will be taught. The course includes presentation of scenes from classical and modern plays.

THEA 220 Theatre Activities 3 (1-0) 1 Cr. Hr.

Prerequisite: THEA 121 recommended.

This course is a continuation of THEA 121 and continues to explore all the elements of theatre: actor, director, playwright, scenery, costumes, makeup, lighting, sound, audience, theatre publicity, theatre management and critic. Students are required to work on current production.

THEA 221 Theatre Activities 4 (1-0) 1 Cr. Hr.

Prerequisite: THEA 220 recommended.

This course is a continuation of THEA 220 and will continue to explore all the elements of theatre: actor, director, playwright, scenery, costumes, makeup, lighting, sound, audience, theatre publicity, theatre management and critic. Students are required to work on current production.

THEA 231 History of Theatre 1 (3-0) 3 Cr. Hrs.

Prerequisite: None.

The development of dramatic art and practice from ancient times to the end of the 18th century stressing the evolution of the physical theatre and dramatic forms in relation to contemporaneous production facilities and innovations will be explored.

THEA 232 History of Theatre 2 (3-0) 3 Cr. Hrs.*Prerequisite:* None.

The development of dramatic art and practice from the beginning of the 19th century to the present stressing the evolution of the physical theatre and dramatic forms in relation to contemporaneous production facilities and innovations will be explored.

THEA 241 Oral Interpretation of Literature (3-0) 3 Cr. Hrs.*Prerequisite:* THEA 208 or COMA 103.

This course is designed to give students an understanding of Oral Interpretation of Literature through a two-fold technique: one, by practical experience in interpretive readings in various types of literature, and two, by the study of techniques used in the textbook. The class emphasizes the performance of literature through the use of the voice and body.

WELDING TECHNOLOGY

WELD 110 Introduction to Welding Basics for Fabrication (2-2) 3 Cr. Hrs.*Prerequisite:* None.

This class serves as an introduction for individuals that have no welding or fabrication experience in various welding and fabrication processes. Covered in the course will be the set up and safe operation of gas welding and brazing, shielded metallic arc welding, gas metallic arc welding, gas tungsten arc welding, resistance welding, gas cutting and plasma cutting equipment as well as the safe set up and operation of equipment found in a welding fabrication facility. This class produces a good foundation for WELD 113 and is recommended for students interested in art and related metallic sculpture.

WELD 111 Project Mathematics (2-2) 4 Cr. Hrs.*Prerequisite:* None.

A mathematics course covering basic skills needed to increase the quantitative literacy of skilled welders in engineering and industrial practice. Welding related problems are designed to increase understanding of basic mathematics as they relate to linear, angular, four sided, triangular and circular measurements. Topics covered in the course also include volumetric measurement of conventional shapes as well as irregular shaped objects, weight calculation and calculations used in bending metals.

WELD 112 Contemporary Metal Sculpture 1 (1-3) 3 Cr. Hrs.*Prerequisite:* None.

This course will explore the world of contemporary sculpture with metal. Emphasis will be on the different methods of welding, fabricating, forming metal and how these methods are applied to the principles of design in sculpture. Two critiques as well as pre-design layout will be required in the course. The required assignments will help develop fabrication techniques, conceptual thinking as well as artistic insight. This class is flexible enough to accommodate the entry-level or the advanced welder/artist.

WELD 113 Shielded Metallic Arc Welding (S.M.A.W.) (2-2) 3 Cr. Hrs.*Prerequisite:* None.

Theory and fundamentals of oxy/fuel cutting, welding, braze welding, shielded metal arc welding, joining and fabricating will be explored. Emphasis will be on basic welding skills, filler metals and techniques for using different welding rods. Welding machine set up and oxy/fuel welding equipment set up will be practiced extensively to insure good sound safety habits. Safety in all welding applications will be explained and students will be required to pass safety evaluations. This course will establish good sound work habits and provide a foundation for more advanced courses.

WELD 115 Gas Metallic Arc Welding (G.M.A.W./M.I.G.) (2-2) 3 Cr. Hrs.*Prerequisite:* None.

Theory and fundamentals of gas metallic arc welding commonly referred to as M.I.G. welding will be explored. This method of fusion of metals is widely used and is the fastest growing segment of the metal working industry. Emphasis will be on basic skill development and the establishment of sound work habits. The course is designed to provide entry level employability and a solid foundation for more advanced courses.

WELD 118 Adhesive Joining Technology (1-3) 4 Cr. Hrs.*Prerequisite:* WELD 113, MET 114 or consent of department.

Adhesive joining technology concentrates on the design and assembly of metallic and nonmetallic materials including ceramics. Two major categories, structural and non-structural adhesive bonding, as well as adhesives selection, joint design, methods of surface preparation and joint evaluation will be compared to general mechanical joining techniques.

WELD 119 Gas Tungsten Inert Arc Welding (G.T.A.W./ T.I.G.) (2-2) 3 Cr. Hrs.*Prerequisite:* None.

Theory and fundamentals of Gas Tungsten Arc Welding (G.T.A.W.) will be explored. This method of metal fusion is capable of producing very high quality welds in virtually all metals and one of the few methods of welding some of the more difficult to weld metals. The course is designed to provide entry level employability and solid foundation for more advanced courses.

WELD 120 Advanced Processes —Stick Electrode and M.I.G. Welding (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 115 or consent of department.

The student will gain additional knowledge and experience in both shielded metallic and gas metallic arc welding. Welding will be performed in all positions; flat, horizontal, vertical and overhead. The class will introduce the student to pipe cutting and pipe welding on heavy sections. Material will be formed and fabricated using power and hand operated tools and equipment. Students will produce several required projects that will simulate weld joints found in today's modern manufacturing and construction industry.

WELD 130 Advanced Processes—Gas Tungsten (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 119 or consent of department.

Advanced Processes—Gas Tungsten Arc Welding moves students to a higher level of welding that the student, as an employee, may find in a job. The course will cover welding of carbon steel, stainless steel and aluminum. This course will challenge the student to perform required elements that produce welds that would meet national standards. Proper fit up of weld joints, weld bead size, weld strength and appearance will be stressed. Lay out of complex weld joints will be another requirement evaluated in an ongoing process as welded exercises are preformed.

WELD 205 Welder's Print Reading (1-1) 2 Cr. Hrs.*Prerequisite:* WELD 120.

Welder's print reading provides detailed information to help welding students develop skills necessary to interpret working sketches and prints common to the welding/metalworking field. In addition, the welding student will gain knowledge in how to interpret conventional drafting symbology and specialized welding symbols and will have the opportunity to perform welds on test plates that are indicated by the welding symbols.

WELD 206 Welding Inspection and Qualification (1-1) 2 Cr. Hrs.*Prerequisite:* WELD 205.

Quality welders are in demand today. It is important that these welders possess a working knowledge of weld test equipment and qualification as well as be able to test and evaluate welds. Proper use of weld test gages and equipment, dye penetrant, fluorescent dye penetrant, magnetic particle and destructive testing equipment and techniques will be covered.

WELD 208 Advanced Metal Sculpture (1-3) 4 Cr. Hrs.*Prerequisite:* WELD 120 and WELD 130 or consent of department.

This course is structured around the advanced artist/welder. Emphasis will be on the different methods of welding, fabricating and forming metal and how these methods are applied to the principles of design in sculpture. Three projects, two critiques, as well as pre-design layout, will be required in the course. Students will have the opportunity to investigate alternative metal fabrication techniques and processes.

WELD 210 Preparation for Welder Certification in Shielded Metallic Arc Welding (S.M.A.W.) (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 113 or extensive welding experience.

The need for "Certified Welders" continues to grow. Certification comes as a result of demonstration of competence by passing performance examinations. Although Schoolcraft College does not qualify or certify welders, the College can duplicate these tests, provide instruction in the proper welding procedure and provide the appropriate testing equipment to examine and evaluate the results. This course addresses stick electrode welding techniques and competencies.

WELD 211 Preparation for Welder Certification in Gas Metallic Arc Welding (G.M.A.W./M.I.G.) (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 115 or extensive welding experience.

The need for "Certified Welders" continues to grow. Certification comes as a result of demonstration of competence by passing performance examinations. Although Schoolcraft College does not qualify or certify welders, the College can duplicate these tests, provide instruction in the proper welding procedure and provide the appropriate testing equipment to examine and evaluate the results. This course addresses competencies in gas metallic arc welding, which is a semi-automatic wire feed welding process.

WELD 212 Preparation for Welder Certification in G.T.A.W./T.I.G. (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 119 or consent of department.

The need for "Certified Welders" continues to grow. Certification comes as a result of demonstration of competence by passing performance examinations. Although Schoolcraft College does not qualify or certify welders, the College can duplicate these tests, provide instruction in the proper welding procedure and provide the appropriate testing equipment to examine and evaluate the results. This course addresses competencies in Gas Tungsten Arc Welding, which is a highly precise welding process that uses an electric arc producing torch and a hand-feed filler.

WELD 214 Preparation for Welder Certification in Pipe Welding (2-2) 3 Cr. Hrs.*Prerequisite:* WELD 130 or consent of department.

The need for "Certified Welders" continues to grow. Certification comes as a result of demonstration of competence by passing performance examinations. Although Schoolcraft College does not qualify or certify welders, the College can duplicate these tests, provide instruction in the proper welding procedure and provide the appropriate testing equipment to examine and evaluate the results. This course addresses competencies needed to become certified as a pipe welder. Shielded Metallic Arc Welding, Gas Metallic Arc Welding and Gas Tungsten Arc Welding can be used to produce these pipe welds.

WELD 223 Fabrication (2-4) 4 Cr. Hrs.*Prerequisite:* WELD 120 and WELD 130 or consent of department.

Fabrication of student/instructor selected projects will be the format for this course. Emphasis will be on the development of fabrication techniques, including design, material selection, layout, material preparation and use of fixtures. Welding skills developed in WELD 120 and WELD 130 will be applied. There will be an opportunity for students to further investigate other industrial welding processes.

WELD 262 Welding Metallurgy (1-2) 3 Cr. Hrs.*Prerequisite:* MET 102 and MET 152 or concurrent.

Welding metallurgy includes the influence of alloy composition, filler materials, fluxes and thermal interactions on the structure and properties of metals. Topics covered in the course will include the chemical, mechanical and physical properties of metals; mechanical behavior; microstructure and post-weld heat treating.

Becoming a Schoolcraft College Student

Enrollment Process

Admissions and Welcome Center, McDowell Center

General Admission Criteria

Regular admission to Schoolcraft is open to all applicants who are high school graduates as well as to those who have successfully completed the General Education Development (GED) test. Students who have not completed high school are also eligible for regular admission if their high school class has already graduated. There is no charge to apply for admission.

Some students may have special circumstances that do not meet the general admission criteria. These students need to follow a modified process for admission to the college depending on their specific circumstances, many of which are described under Special Admission Processes.

Admission to the college does not guarantee admission to all courses and programs of study, including limited enrollment or restricted enrollment programs that have additional requirements.

Application and Enrollment Process

- Complete the Schoolcraft College application for admission at www.schoolcraft.edu/apply.
- Submit high school transcript(s)/GED scores to the Student Records office, McDowell Center.
- Submit official college transcript(s), if applicable, to the Student Records office, McDowell Center. Official college transcripts must be sent directly from the transfer institution's Registrar's office. Hand carried or "issued to student" copies will not be accepted or considered official.
- Tour Schoolcraft College. Register online at www.schoolcraft.edu/tour for a campus tour of the main campus in Livonia or a tour focused on the culinary arts programs. Tours of the Radcliff Center in Garden City can be scheduled by calling 734-462-4786.
- Take placement tests for English, mathematics and reading to ensure proper placement in courses. Visit www.schoolcraft.edu/assessment/guide.asp for more information. You can also submit ACT/SAT scores that are not more than three years old to the Student Records office, McDowell Center.
- Attend a new student orientation session prior to registering for classes. Visit www.schoolcraft.edu/orientation to schedule.
- Meet with an academic advisor or counselor prior to registering. Call 734-462-4429 to schedule an appointment, or visit www.schoolcraft.edu/orientation to reserve a spot in new student orientation. Meeting with an academic advisor or counselor is included as part of the orientation process.

Special Admission Processes

Dual Enrollment—Allows students currently enrolled in high school to use funding from their K–12 district to pay for classes taken at Schoolcraft College. This process must be completed each term prior to registering. These requirements are subject to change in accordance with state legislation.

- Complete the high school enrollment application, available at www.schoolcraft.edu/admissions/special. This application requires approval from the student's high school principal or counselor.
- Meet with a Schoolcraft College academic advisor or counselor. Call 734-462-4429 to schedule an appointment.

Special High School Enrollment—Allows students currently enrolled in high school or home-school to pay for their own classes taken at Schoolcraft College. This process must be completed each term prior to registering. These requirements are subject to change in accordance with state legislation.

- Complete the high school enrollment application, available at www.schoolcraft.edu/admissions/special. This application requires approval from the student's high school principal or counselor, or home-school official.
- Meet with a Schoolcraft College academic advisor or counselor. Call 734-462-4429 to schedule an appointment.

Early Enrollment—Allows exceptional students under the age of 18 who demonstrate the ability to be successful in college-level classes and who do not qualify for regular admission or high school enrollment options to take classes at Schoolcraft College. This process must be completed each term prior to registering.

- Take placement tests for English, mathematics and reading to ensure proper placement in courses. Visit www.schoolcraft.edu/testing for more information. Students who have completed the ACT/SAT may use those scores instead of placement testing.
- Meet with the associate dean of counseling and student support. Call 734-462-4429 to schedule an appointment.
- Recommendation from high school principal or counselor, or from home-school official, may be requested.

Readmission of Former Students—Allows former students that have not attended Schoolcraft College for more than two years an expedited re-enrollment process.

- Complete the Schoolcraft College application for admission at www.schoolcraft.edu/apply.
- If student is in good academic standing, meet with an academic advisor or counselor to discuss and revise educational plan. Call 734-462-4429 to schedule an appointment.
- Academically dismissed students must follow the guidelines for appeal outlined in the dismissal notification.

Guest Students—Allows students attending another college or university to attend Schoolcraft College with an expedited enrollment process.

- Students attending another Michigan college or university should complete a Michigan Uniform Guest Application available at www.schoolcraft.edu/guest.
- Students attending a college or university outside of Michigan must submit a Schoolcraft College Application for Admission at www.schoolcraft.edu/guest and indicate their desire to be a guest student.
- Guest students are not required to take placement tests or meet with an academic advisor or counselor, but are welcome to do so. If a guest student does not indicate their guest student status through a Michigan Uniform Guest Application or on the Schoolcraft College application for admission, they may be required to follow the same Application and Enrollment Process described above. Also, guest students cannot apply their financial aid to the classes they take at Schoolcraft.

International Students—including Canadian citizens.

- Complete the Schoolcraft College application for admission at www.schoolcraft.edu/apply.
- Submit high school transcript(s)/GED scores to the Student Records office, McDowell Center.
- Submit official college transcript(s), if applicable, to the Student Records office, McDowell Center. Official college transcripts must be sent directly from the transfer institution's Registrar's office. Hand carried or "issued to student" copies will not be accepted or considered official.
- Obtain and maintain valid visa status. Schoolcraft College is authorized to issue eligibility visa documents (an I-20) for foreign nationals to obtain F-1 or M-1 student status either by changing their current visa status if they are in the U.S. or by obtaining an F-1 or M-1 visa through a U.S. consulate outside of the U.S. Prospective international students in the U.S. with another visa status must be sure that your current status allows full-time study.

To be issued the necessary visa documents the prospective international student must:

- Submit a completed international student packet that can be obtained from the international student services coordinator in McDowell Center, at www.schoolcraft.edu/admissions/international.asp or call 734-462-4429.
- Submit documentation of sufficient level of financial support and availability of funds. Examples of documentation include a bank statement of sponsor dated within the past four months; an earnings statement; the prior year's income tax statement; a letter from an employer; or two recent paycheck stubs verifying current and year-to-date earnings.
- Provide a copy of a valid passport identification page.
- If native language is not English, demonstrate adequate knowledge of written English proficiency: Test of English as a Foreign Language (TOEFL) paper test minimum score of 500 or computer test minimum score of 173; Michigan English Language Assessment Battery (MELAB) score of 70; or Michigan Test of English Language Proficiency (MTLP) score of 50.

- Provide proof of health insurance.
- Previous education credentials should be evaluated from an independent source. Evaluations are accepted from Educational Credential Evaluators (ECE, www.ece.org) or World Education Services (WES, www.wes.org).
- Meet with a Schoolcraft College academic advisor or counselor. Call 734-462-4429 to schedule an appointment.

Exceptions to any of the criteria described above can be made by the vice president of student services.

Registration Process

Registration Center, McDowell Center

Registration overview

Students must complete the application and enrollment process before they can register for credit courses. Registration is accomplished online using WebAdvisor, which is accessed via the college's website. Registration is available during official registration periods.

The deadline for payment of tuition and fees varies by semester. Tuition can also be paid in installments if you enroll in our tuition payment plan.

Information about registration, including registration periods and deadlines, is available at www.schoolcraft.edu/registration and in the printed registration guide.

Students cannot attend classes for which they are not registered.

Students are expected to complete the courses in which they are registered.

Current/Active students (those who are enrolled or have taken a class and earned a credit in one or more semesters in the previous year) can take advantage of assigned registration start times. Assigned registration start times are based on students' total number of credits earned to date. Assigned registration start times make it easier for those students close to graduation to register for classes they require and also help reduce the burden on the system for the benefit of all students. It is college policy that students with financial obligations to Schoolcraft College will not be allowed to register until the obligations have been paid or cleared.

New students without previous college experience are eligible to register during the open registration periods following assigned registration start times period after they have completed the necessary steps outlined in the Application and Enrollment Process section on pages 175–176.

Open Entry/Open Exit classes have flexible beginning and ending dates. Students may not add an Open Entry/Open Exit class beyond the registration date for Open Entry/Open Exit classes published on the Important Dates page of the college's website and in the printed registration guide.

Overload and late registration are sometimes requested by students who wish to enter a class that is full (overload) or join a class that has already started meeting (late entry). Overload and late entry require written approval from the instructor of the course the student wishes to enter. Students that have permission to overload, or who

are enrolling in a section that has already started must register in person at the Registration Center and bring the approval within two business days of having it signed. Students may not register past the midpoint for any course.

Added classes can be registered for up until the first class meeting of the section. If a class has already started, the student must follow the overload or late entry process described above.

Schedule adjustments are requested by students who wish to make changes to their course schedule. These adjustments may be made during the schedule adjustment period posted on the Important Dates page of the college's website and in the printed registration guide.

Schedule switching is sometimes necessary for those students who find they are in a class that is either too difficult or too easy. Students are encouraged to contact their counselor or academic advisor to discuss schedule switching options that may be available.

Auditing a class is an option for students who wish to attend a class without receiving a grade or earning college credit. Also called course auditing, it does require that the student submit an application for admission and pay tuition and fees for the class. A student's intention to audit the course should be made known at the time of registration. Students intending to audit need to work with the Registration Center, as audits cannot be declared when registering via WebAdvisor. A change from credit to audit after the registration period may be authorized through instructor/student consultation and written notification by the instructor to the registrar. This change must be made before the last day to withdraw from the class for that term. Any student auditing a class may participate as a regularly enrolled student except that no final grade or credit is issued to the auditor. The Official Transcript will show AUD for the grade. In order to retain their eligibility for federal financial aid, students must make "satisfactory academic progress" by completing a specified number of credits over a defined period of time. Audited classes do not award credit and cannot be counted toward satisfactory academic progress.

Dropping Classes vs. Withdrawing from Classes: There is a distinct difference between dropping a class for a refund and dropping a class during the withdraw period.

- Dropping a class during the refund/schedule adjustment period means the student no longer wishes to attend the class and wishes to receive a refund. Dropped courses do not appear on the official college transcript, and no grade is issued for dropped courses. To receive a refund, a drop must be completed in WebAdvisor on or before the last date for refund/schedule adjustment period posted on the Important Dates page on the college's website and in the printed registration guide.
- Withdrawing from a class means the student no longer wishes to attend the class but will not receive a refund because the refund/schedule adjustment period has ended. Students can officially withdraw from classes in WebAdvisor after the refund/schedule adjustment period through the last date for a W grade as posted on the Important Dates page on our website or in the appropriate term's registration guide. Withdrawing from a class will result in a W grade on the official college

transcript. W grades are not considered when calculating the grade-point average, but may impact a student's satisfactory academic progress as it relates to Financial Aid. A request for dropping a class can be submitted using WebAdvisor.

Refund and withdraw timeframes vary depending on the length of the course. Typically there are no exceptions to the refund/schedule adjustment or withdraw deadlines. However, students can request exceptions due to extenuating circumstances such as military service or unforeseen serious illness with doctor's documentation, by submitting a request via the online reporting system www.schoolcraft.edu/sccares. Appeal requests must be received within one year of the semester for which the exception is being requested. The college may not be able to grant appeals for reoccurring, ongoing or pre-existing situations. The exception committee will review all requests and provide the student with a decision in writing, generally within four weeks; however, it may take longer to receive a decision.

Non-Attendance: It is important that students do not simply stop attending classes. Students who register for a class but do not attend any class sessions, or attend only the first week of class and do not officially drop or withdraw from the class, will receive a grade of NS (No show). Students in Open Entry/Open Exit classes who never attend orientation or complete only orientation and no other assignments or tests will receive an NS grade. Students in online classes who never log-in to the course or who log-in and complete no other assignments or tests will receive an NS grade. Students in hybrid classes who never log-in to the course or attend on-campus sessions, or students who log-in but complete no assignments or tests and who do not attend on-campus sessions will receive an NS grade.

The NS grade signifies non-attendance, and will not be used in calculating the grade point average. The NS grade will result in a loss of, or reduction in, financial aid for the semester. Financial aid is only available for students who have established eligibility for financial aid through attendance. The student is responsible for the resulting balance.

Students who plan to transfer credits to another college or university should investigate the implications of an NS grade with the receiving institution. It is up to the receiving transfer institution to determine how the NS grade will be handled. If students attend more than the first week of class and/or complete some coursework, and then stop attending, the instructor will assign an appropriate final grade in relation to total course requirements achieved, which will impact grade point average. In order to retain their eligibility for federal financial aid, students must make "satisfactory academic progress" by completing a specified number of credits over a defined period of time. An NS grade means that the class in question cannot be counted toward satisfactory academic progress.

Issuance of an Incomplete Grade: An instructor may award an I grade to students who, because of extenuating circumstances, were unable to complete the course work within the regular college semester or session. Students must have successfully completed the majority of the course before the incomplete grade is granted. The responsibility for completing a course rests with the student. If an I grade reaches expiration, and the Student Records office has not received a change in grade form indicating another earned grade, the I grade will be automatically changed to a 0.0 grade.

Financial Aid

Student Financial Services Office

Financial aid overview

There are two basic categories of financial assistance: need-based and non-need-based aid. Need-based aid uses a formula to determine a family's financial strength and eligibility for a program. Non-need-based aid does not use the financial strength of the family, but may take into consideration other factors such as grade-point average. All programs, criteria and funding are subject to change without notice.

Additional information on financial aid may be found on the following websites:

schoolcraft.edu/aid	Financial Aid page at Schoolcraft College
schoolcraft.financialaidtv.com	Short video answers to common financial aid questions
ed.gov	U.S. Department of Education
fafsa.gov	Free Application for Federal Student Aid
students.gov	Gateway to the Federal Government
studentloans.gov	Direct Loan website (Entrance and Exit Counseling, Master Promissory Note, etc.)
michigan.gov/mistudentaid	Michigan Department of Treasury Student Financial Aid

Financial Aid Programs

Enrollment requirements vary by type of aid and the program, and may range from less than half-time to full-time enrollment each semester. Awards are based on students' ability to meet eligibility criteria, make satisfactory academic progress toward their degree and the availability of funding.

Non-need-based aid

Scholarships

Scholarships do not have to be repaid and are primarily based on academic achievement. Students should consult the scholarship postings in the Student Financial Services office, or the Radcliff Center's main office. Scholarship postings contain current scholarship offerings, criteria and deadline dates for each scholarship. In addition to those posted in the Student Financial Services office, the following scholarship opportunities are available.

- **Michigan Competitive Scholarships**—This state scholarship provides up to \$1,300 per academic year to students who achieve required scores on the ACT exam, demonstrate financial need and enroll in an eligible Michigan college or university. The Michigan Department of Treasury determines eligibility and award amount.
- **Schoolcraft College Athletic Scholarships**—Contact the Athletic Department at 734-462-4400, ext. 5324 for information.
- **Schoolcraft College Institutional Scholarships**—The Student Financial Services

office awards a limited number of scholarships each academic year to students who demonstrate financial need. Awards are made on a case-by-case basis and notification will be sent to eligible students. Students should contact the office for assistance.

- **Schoolcraft College Trustee Scholarship**—This scholarship program is available to entering fall semester first-year students who graduated the previous spring from select area high schools. By the deadline date, students must submit a Trustee Scholarship Application, a seventh-semester high school transcript reflecting a minimum cumulative 3.0 grade-point average and their ACT scores with a minimum composite score of 18. Students must register for at least 12 credit hours each semester, and the scholarship may be renewable for the second year of study, if credit hour and grade-point average requirements are met by the end of the spring term.
- **Schoolcraft College Foundation Scholarships**—Through generous public and private scholarship donations, the Schoolcraft College Foundation is able to offer several scholarships each year. In general, most scholarships require a 3.0 cumulative grade-point average and enrollment in at least six credit hours. Eligibility criteria, award amounts and deadline dates vary.
- **Schoolcraft College Faculty Academic Scholarships**—These scholarships are available to students who have earned at least 12 credit hours at Schoolcraft College, have a minimum 3.0 grade-point average and meet individual departmental scholarship criteria. Faculty committees establish scholarship requirements and select the recipients of these awards. Students must enroll in at least six credit hours.
- **Transition Center and Special Populations Scholarships**—These scholarships are available to those who may or may not qualify for federal or state financial aid. Specific scholarships established prior to Proposal 2 (Michigan Civil Rights Initiative) have a special emphasis on women. Students must complete the FAFSA to be considered. Information is available in the Counseling and Academic Advising office.

Need-based aid

Grant programs

Grants do not have to be repaid and are based primarily on demonstrated financial need.

- **Federal Pell Grant (FPELL)**—This federal grant program is for students who have not earned a bachelor's degree, are enrolled in an undergraduate program, and demonstrate exceptional financial need. Each academic year the federal government determines award eligibility and amount. The current range is \$602–\$5,550. Enrollment requirements range from less than half-time to full-time, depending on individual eligibility. Eligible students may receive this grant for a maximum of 12 full-time semesters, or the equivalent.
- **Federal Supplemental Educational Opportunity Grant (FSEOG)**—This federal grant program is for students who have not earned a bachelor's degree, are enrolled in an undergraduate program, and demonstrate exceptional financial need. The award is determined by the college and is based on funds available each year. Enrollment requirements range from less than half-time to full-time depending on individual eligibility.

- **Native American Tuition Waiver**—Michigan residents who are native North Americans, members of a federally recognized tribe, and are certified as having one-quarter blood quantum by their tribal association may be eligible for tuition assistance funds. Information and requirements are available through the Student Financial Services office. Students must contact the State of Michigan Department of Civil Rights regarding eligibility.
- **Tuition Incentive Program (TIP)**—This state grant program provides funding for tuition and mandatory fees to students who graduate high school or earn their GED by the age of 20. The Michigan Department of Treasury, through Family Independence Agency Medicaid records, certifies eligibility for each recipient. Students must register for the program prior to graduating from high school or earning their GED. TIP pays for a maximum of 24 credits each academic year. Allowable costs are limited to resident tuition, registration fees and instructional equipment fees. Students must enroll in at least six credit hours per semester.
- **Special Populations Program**—The Special Populations program has funds available for single parents, displaced homemakers and persons in programs considered nontraditional for their genders. Students must complete the FAFSA. Assistance is available for tuition, textbooks and child care. Information is available Counseling and Academic Advising office.
- **College Work Study Employment**—Student employment requires the student to work to earn the award. Work-study students are placed in jobs on campus, and their wages are paid by federal work-study funds. Student employment under these programs is limited to 20 hours a week. To be eligible, students must demonstrate financial need, qualify for the Pell Grant and register for at least six credit hours each semester for fall and winter and three credit hours each semester for spring and summer. Request forms are available in the Student Financial Services office and on WebAdvisor. Eligible students may receive this award for a maximum of 12 full time semesters, or the equivalent.

Student loans

Student loans are borrowed money and require repayment. To request a student loan, a student must:

- complete the Free Application for Federal Student Aid (FAFSA)
- complete Entrance Loan Counseling online at www.studentloans.gov
- sign a Master Promissory Note online at www.studentloans.gov
- complete and submit a Direct Loan Request form to the Student Financial Services office, which is available at www.schoolcraft.edu/aid or in the office.

Schoolcraft College recommends students request loan amounts they realistically will be able to repay. The approved loan amount is determined by the student's financial need, other financial aid and outside resources, program limits and loan amount requested.

The school determines student eligibility for a federal student loan. If reasons are documented and explained to students in writing, the Student Financial Services office may decline to certify an otherwise eligible loan application. In addition, a loan may be certified for an amount less than that for which the student would otherwise be eligible.

To be eligible for a student loan, students must enroll in at least six credit hours each semester for which a loan is requested. In addition, students need to make satisfactory academic progress at Schoolcraft College. Loans will not be approved for students on financial aid warning status or probation. Interest rates, repayment terms and borrowing limits are set by the federal Department of Education. Repayment on these low interest educational loans begins after a student stops attending school on at least a half-time basis. In addition, all students with loans must participate in online exit counseling at www.studentloans.gov upon leaving Schoolcraft or when their enrollment falls below half-time status.

Priority Processing Dates for Loans

Semester	File complete by	Loan request submitted by
SUMMER 2013	May 1, 2013	May 15, 2013
FALL 2013	July 1, 2013	July 15, 2013
WINTER 2014	November 1, 2013	November 15, 2013
SPRING 2014	March 1, 2014	March 15, 2014

- **Federal Direct Stafford Loan**—These low interest loans are the U.S. Department of Education's major form of self-help aid and are available through the William D. Ford Federal Direct Loan Program. There are two types of Federal Direct Stafford Loans: subsidized and unsubsidized. Because the funding for these loans comes directly from the Department of Education, students will not need to find a lender in order to borrow through this program. Interest rates on these loans are fixed for those loans first disbursed on or after July 1, 2006.

To receive a Subsidized Federal Direct Stafford Loan, the student must demonstrate financial need. Interest on subsidized loans is paid by the federal government during periods of enrollment, deferment and during the six-month grace period preceding repayment.

Unsubsidized Federal Direct Stafford Loans have the same terms as a Subsidized Federal Direct Stafford loan, except the loan is not based on demonstrated need, and borrowers are responsible for all interest, including that which accrues during periods of enrollment and the six month grace period preceding repayment.

More information on the application process is available by contacting the Student Financial Services office or at www.schoolcraft.edu/aid.

Veterans

Veterans and their dependents are encouraged to contact the Schoolcraft College veterans liaison for information regarding Veterans Administration (VA) educational benefits. The veterans liaison helps veterans apply for VA educational benefits and operates as a contact person between the veteran and the Veterans Administration. Veterans attending college under the provisions of the G.I. Bill (Chapters 30, 32, 35, Title 38, Chapter 1607 and Chapter 1606, Title 10) are entitled to privileges and are responsible for complying with all Schoolcraft College regulations. See Veterans, page 195 for more information.

Financial Aid Application Process

Students should apply for financial aid each academic year they wish to be considered for aid. Applications are processed year round, but students are advised to file applications as early as possible to receive notification of eligibility before tuition payments are due. This usually means **filing in the early spring** for the upcoming academic year.

The Free Application for Federal Student Aid (FAFSA) is available on January 1 for the next academic year. At Schoolcraft the academic year includes the summer, fall, winter, and spring semesters. For the current academic year (2013–14), students who have not completed the FAFSA should do so now. For the 2014–15 academic year, students should apply on or after January 1, 2014.

Applying for Financial Aid

1. Complete and submit the Schoolcraft College Application for Admission. The application is available online or from the Admissions and Welcome Center. While you do not have to be admitted to Schoolcraft College to apply for financial assistance, aid is not awarded until you have been admitted to the college and have a student number.
2. Complete and submit the FAFSA at www.fafsa.ed.gov. If you are unable to access the Internet, you may contact the Department of Education at 800-433-3243 to request a paper application be mailed to your home. Indicate Schoolcraft's federal school code (002315) on your FAFSA. This permits the Student Financial Services office to access your financial aid results electronically. If you are thinking about transferring mid-year, indicate your transfer institution first, then Schoolcraft College.
3. Approximately one to four weeks after you submit your FAFSA, you will receive a Student Aid Report (SAR). The SAR recaps the information you submitted on your FAFSA. Read the Information Summary, review your SAR for accuracy and submit any changes to the Department of Education. If Schoolcraft College is not listed, you may add our school code (002315) online or submit the SAR to the Department of Education with our school code added to it. If you provide an e-mail address, the Federal Processor will communicate with you via e-mail. Otherwise, correspondence will be by U.S. mail.
4. Schoolcraft College may request additional documents, if necessary. You will be notified of any necessary additional documents in writing, either by U.S. mail, email, or through the My Document section of WebAdvisor. Other information

may be requested as determined by the Student Financial Services office. Respond immediately to all requested information.

5. Eligibility for financial aid assistance cannot be determined until all requested documentation is on file. Students are notified via WebAdvisor, in writing, or by email of their eligibility status. Files are reviewed based on the date of completion. Files are complete when the student has submitted all requested information. See the following priority dates.

Priority Processing Dates

Semester	Submit FAFSA by	Financial aid file complete by
SUMMER 2013	March 1, 2013	May 1, 2013
FALL 2013	May 1, 2013	July 1, 2013
WINTER 2014	September 1, 2013	November 1, 2013
SPRING 2014	January 1, 2014	March 1, 2014

Applying for financial aid early gives students the best chance of having an award determination in time for the start of classes. Those applying after the priority dates may not have their eligibility determined in time for the start of classes.

6. Award notification will be sent out electronically to all students who provide the college or the Department of Education with an email address. Additionally, all financial aid students may view their award letter through WebAdvisor.
7. Inform the Student Financial Services office of changes in financial or family circumstances, such as loss of employment, death or disability of a family wage earner, divorce or separation. You may qualify for a re-evaluation of your financial aid information.
8. Keep your demographic information current with the college and the Federal Processor.

Rights and Responsibilities

Financial aid guidelines, rules, requirements and consumer disclosures are on the college website at www.schoolcraft.edu/aid, on WebAdvisor and on the Rights and Responsibilities page of the Award Letter. Materials sent to students from the Student Financial Services office and its service providers also may include information regarding requirements. All award and eligibility requirements are subject to change without notice. Financial aid applicants and recipients are expected to review these requirements and follow the policies and procedures established by the Student Financial Services office, the college and the financial aid programs. See Financial Aid Rights and Responsibilities, pages 198–200.

Succeeding as a Student

Academic Advising

Counseling and Academic Advising Office, McDowell Center

Academic advising services are designed to assist students in developing meaningful educational, career and personal plans that are compatible with their life goals. Meeting with an academic advisor or counselor is required as part of the application and enrollment process prior to registration. Academic advisors and counselors provide a number of services including but not limited to evaluating test scores and prior coursework for proper placement in classes; assisting with developing a schedule of classes; providing guidance for students planning to transfer to another college or university.

Academic Service Learning Endorsement

734-462-4400 ext. 5804 | servicelearning@schoolcraft.edu

www.schoolcraft.edu/scholars/community.asp

Academic Service Learning/Civic Engagement courses provide the opportunity for students to master course objectives, and apply new learning and skills through guided service opportunities. Volunteering within a community or organization enhances learning through real-world experiences and applications. To receive an Academic Service Learning Endorsement, students complete a minimum of 15 credit hours of classes designated as Service Learning.

Academic Standards Policies and Procedures

See Student Rights and Responsibilities, page 196–197.

Activities

See Student Activities Office.

Admissions

Admissions and Welcome Center, McDowell Center

Schoolcraft has an open door admissions policy; this policy reflects the college's commitment to making higher education accessible to individuals who are interested in, and capable of, extending their education beyond high school. Students must be admitted to the college before they can register for credit courses. The steps required for being admitted are described in the Admissions and Enrollment Process section starting on page 175–176. The staff of the Admissions and Welcome Center are available to answer questions and provide guidance to prospective students who are interested in attending Schoolcraft College, and assist those students moving through the admissions and enrollment process.

Application for Admission

Admissions and Welcome Center, McDowell Center

The Schoolcraft College Application for Admission is available online at www.schoolcraft.edu/apply. A completed application is a requirement of the admissions and enrollment process (see pages 175–176). There is no application fee.

Athletics

Physical Education Building

Schoolcraft College is a member of the National Junior College Athletic Association (NJCAA) and the Michigan Community College Athletic Association (MCCAA). Women's intercollegiate sports include basketball, bowling, cross country, soccer and volleyball. Men's intercollegiate sports include basketball, bowling, cross country, golf and soccer.

Students who participate in varsity athletics must have a grade-point average in keeping with the requirements established by Schoolcraft College, the MCCA and the NJCAA. Student-athletes who meet only NJCAA standards but not the Schoolcraft College standard will not be eligible to compete or to receive grant-in-aid funding.

Student athletes can take advantage of specialized support services such as academic coaching, academic monitoring, study tables, workshops and one-on-one professional learning assistance made available through Student Athletic Support System (SASS) in the Learning Assistance Center.

Attendance

Regular class attendance is expected. Faculty members announce any special attendance requirements during the first class meeting of each semester or session. Non-attendance resulting in an NS (no show) grade can impact Financial Aid status (see page 177).

- Students are expected to attend all classes except in the event of illness or an unavoidable emergency.
- Students are responsible for making arrangements to complete all work before attending athletic events, field trips or other college-sponsored events. Written assignments must be turned in to instructors before the event or at a time designated by instructors.
- Students are responsible for meeting all class requirements regardless of absences and/or tardiness from class.
- Students attending Schoolcraft College under special programs may have specific attendance requirements.

Auditing a Class

See *Becoming a Student*, page 177.

Bookstores

Livonia Campus, 734-462-4409 | Radcliff Center, 734-462-4478 | www.schoolcraftbooks.com

Schoolcraft College Bookstores offer a wide selection of items including new and used textbooks, college apparel, gift items, school supplies and study aids. The bookstore at the Livonia Campus has a TechZone offering computers, calculators, software and other devices, including Apple products. The Bookstores also offer a textbook buy-back service.

Cancellation of Classes

Single class meeting cancellations: Classes cancelled on a one-time basis during the semester due to instructor illness, etc. will be listed in the *Cancellations and Closings* link on the college's website.

Class cancellations due to weather or other emergency: See *College Closings Due to Emergency or Inclement Weather*.

No-classes-cancelled Guarantee: The SC No-classes-cancelled Guarantee serves students by not cancelling credit classes based on the number of students registered. This enables students to plan ahead and to achieve their educational goals at Schoolcraft if they know that certain classes are going to be available. As sections of classes fill up, Schoolcraft uses just-in-time scheduling to add sections based on student demand. There are situations in which a class might be cancelled for reasons other than the number of students enrolled. For example, if an instructor originally scheduled to teach a class becomes unavailable and the college is unable to find another instructor for that class, the college reserves the right to cancel that class. The college also reserves the right to cancel limited-enrollment or restricted-enrollment classes. These classes often depend on a minimum number of students enrolling to ensure the learning activities in the class can be accomplished. If a class is cancelled, students will be contacted to select another class or request a refund. Refunds are processed back in the method they were paid. The college may change the day, time or location of classes.

Career Counseling

Career Services Office, McDowell Center

The Career Services office provides a variety of resources for career exploration, career planning, developing employability skills, and student employment. Licensed professional counselors specializing in career counseling and professionally trained personnel are available to assist students in the following areas:

- Analyze career options with help from an experienced licensed counselor.
- Evaluate what career interests, skills or personality assessments tell you about yourself.
- Use the computerized career search engines DISCOVER and OPEN OPTIONS.
- Learn to write a targeted resume.

Career counseling is available to students and the community. Also see *Employment Services* for more information and resources.

Classification of Students

- Freshman—Fewer than 26 credit hours.
- Sophomore—26 or more credit hours.
- Full-time—12 or more credit hours per fall/winter semester; 6 or more per spring/summer.
- Part-time—Fewer than 12 credit hours per fall/winter semester; fewer than 6 per spring/summer.
- Special/Dual Student—High school student who is enrolled in Schoolcraft at the same time he/she is enrolled in a high school or home school curriculum.
- Advanced Standing—A student who has previously completed at least an associate degree at Schoolcraft or another college or university.

Clubs

See *Student Activities Office*.

College Closings Due to Emergency or Inclement Weather

The college uses text, email and voicemail messaging to notify students when the college is closed due to weather or an emergency. In order to receive these messages, students must sign up at www.schoolcraft.edu/stayconnected.

In addition to sending the text/email/voicemail message, the college will post updated information on the college's website (www.schoolcraft.edu) and on the college's Facebook page (www.facebook.com/schoolcraftcollege). Major news radio and television stations also provide school closing listings on their broadcasts and on their webpages.

Weather conditions can vary widely, even over a small geographic area. Students must exercise their own judgment concerning safety, whether the college is open or closed.

Code of Conduct

The Student Code of Conduct and Judicial Procedures is a document that describes the college's expectations for how students will conduct themselves academically and as members of the college community. A complete copy of this document can be found on pages 201–206.

Computers and Technology

Student Technology Resources

All students currently enrolled in credit classes are assigned a college user ID and password. This user ID and password will provide you access to the college's wireless network, student email and, if applicable, access to the Blackboard Learn system.

Open computer labs

McDowell Center, Room 100 | Radcliff Center, Room 140
734-462-HELP (4357) for information and hours

The college provides two open computer labs for students working on course assignments and academic research. Students must present an approved picture ID or current schedule for admittance to computer labs and must abide by posted rules and guidelines regarding computer use.

Library computer labs

The college has two libraries located on the Livonia Campus and the Radcliff Center. Computers are available for students working on academic research. Students must present an approved picture ID for access to the computers and must abide by posted rules and guidelines regarding computer use.

Academic computing labs and lab use policy

In addition to the two large open computer labs and library resources, there are another 55 computer labs that are designated for specific purposes and/or class use. The Academic Computing Lab Use Policy requires that students:

- Must currently be enrolled at Schoolcraft College and present proper identification when using the computer lab.
- Are restricted to using only the software that is available on the lab computers.
- Must use the computer for Schoolcraft College course assignments only.
- Must follow college policy by strictly adhering to legal use of copyrighted software.
- Not bring food or drink into computer labs.

Continuing Education and Professional Development

734-462-4448 | CEPD@schoolcraft.edu | www.schoolcraft.edu/CEPD

The Continuing Education and Professional Development department (CEPD) offers non-credit classes and programs designed to meet the needs and interests of the community. CEPD classes do not require a formal admissions process. Students can receive nationally recognized Continuing Education Units (CEUs) for most CEPD classes.

- Career transition exploration and training
- Professional development: computers, management, accounting, and recertification courses for nurses and teachers
- Physical fitness programs
- Personal enrichment classes: the arts, music, photography, culinary arts, and foreign languages
- Youth development programs and Kids on Campus summer camps
- Basic academic skills refresher courses
- Test preparation workshops
- English as a Second Language classes
- Motorcycle safety classes.

Counseling Services

Counseling and Academic Advising Office, McDowell Center

The Counseling and Academic Advising office provides quality services and professional staff to assist students in developing meaningful educational, career and personal plans that are compatible with their life goals. Counselors are available by appointment or on a walk-in basis to assist student who are undecided on a program of study with:

Academic choices

- Selecting a major or program of study.
- Creating an educational plan.
- Understanding certificate and degree requirements.
- Developing a strategy for selecting courses.
- Preparing to graduate.
- Making plans to transfer.

Personal life choices

- Managing the stress of school, work and personal commitments.
- Using time-management skills to create an effective balance.

Career opportunities

- Identifying and clarifying career goals.
- Connecting to resources for in-depth career counseling.
- Enrolling in a career decision-making course—HDS 110.

Transfer planning

- Connecting with representatives of four-year colleges and universities.
- Obtaining transfer guides.
- Using articulation agreements between Schoolcraft College and four-year colleges and universities.
- Providing guidance in selecting a transfer institution.

The Counseling and Academic Advising office also sponsors a Divorce Support Group, and Money Matters in Divorce and Ask an Attorney monthly information sessions (formerly sponsored by the Transition Center).

The Special Populations Program provides tuition assistance, support services and programs for single parents, displaced homemakers, individuals with disabilities, economically disadvantaged, those with limited English proficiency, and non-traditional job seekers.

Credit Hours

In general, students receive one hour of credit for each hour required in class per week during a 15-week semester. However, classes with labs, such as art, science, computers and technology, may require additional class hours. Credit hours are listed in the course description section of this catalog.

Course load

- **Fall and winter semesters:** A full-time load is 12 semester credit hours. Students must obtain permission from an academic advisor or counselor before the beginning of the semester to elect more than 18 hours. Normally, students eligible for credit hour overloads earned a minimum grade-point average of 3.0 in the previous semester at Schoolcraft College.
- **Spring and summer sessions:** The full-time course load in the spring and summer sessions is six semester credit hours. Students must obtain permission from an academic advisor or counselor before the beginning of the semester to elect more than nine hours. Normally, students eligible for credit hour overloads earned a minimum grade-point average of 3.0 in the previous semester at Schoolcraft College.

Credit for Prior Learning

The college recognizes that students have attended other institutions or have earned college-level learning from non-college sources.

The college offers several options for evaluating prior learning and/or college-level credit earned outside of Schoolcraft College including:

	What	How	Cost
College Credit	Courses taken at regionally accredited institutions will be evaluated for courses taught at Schoolcraft. Students must score 2.0/C or higher for consideration. Some programs may require higher grades for acceptance of transfer credit. We do not evaluate courses below 100 level.	Request official transcripts from your previous college to be sent directly to the Schoolcraft College Student Records office. Hand carried or “issued to student copies” are not accepted for the purposes of evaluating transfer credit. International students should use one of our evaluation sources: ECE (www.ece.org) or WES (www.wes.org).	No charge to student to have transcript evaluated, but previous institution may charge for official transcript. International transcript translation companies do charge for their services.
Advanced Placement Credit	Students who took the Advanced Placement exam scoring a minimum of 3 may be able to earn credit at Schoolcraft. Requests for credit from international baccalaureate (IB) will be reviewed individually.	Send Advanced Placement scores (from high school or collegeboard.com) to the Schoolcraft College Student Records office.	No charge to evaluate Advanced Placement scores.
CLEP/DSST Exams	Students can earn credit based on satisfactory scores on the CLEP (minimum score of 50) or DSST (minimum score of 400) exams.	Exams are given monthly through the Schoolcraft Testing Center.	Schoolcraft charges a registration fee and a test fee. Information online at www.schoolcraft.edu/assessment .
Credit By Exam	Students who present evidence of special course proficiency, experience or education can take an exam to prove college-level learning. Students must earn a 2.0 or higher to receive credit.	Students interested in credit by exam should contact the appropriate dean, associate dean or assistant dean of the discipline to discuss options.	Students pay the current in-district tuition rate (per credit hour).
Articulation Credit	Schoolcraft has articulation agreements with several area high schools and career/technical centers to earn specific credit for specific programs.	Students should have the high school instructor complete the “Passport” form and send to the Schoolcraft College Student Records office.	No cost to student to have articulated credit evaluated.
Special Licensure or Certification	Students who have earned nationally recognized licensure or certification can submit for assessment of comparable college courses.	Students interested in receiving credit for special licensure or certification should contact the appropriate dean, associate dean or assistant dean of the discipline to discuss options.	After earning 15 credits at Schoolcraft, students pay \$25 to have the credits applied to their transcript.
Work Life Experience	Students may have non-instructional life experiences that may make them eligible for credit.	Students interested in Work Life Experience should contact the appropriate dean, associate dean or assistant dean of the discipline to discuss options.	Students pay the current in-district tuition rate (per credit hour).

Dean's List

During the fall and winter semesters, the college recognizes students for high academic achievement by naming them to the Dean's List. The college sends a letter of recognition to students' homes, notifies hometown newspapers and publishes the names in the student newspaper, the *Schoolcraft Connection*. The minimum requirements are:

- Full-time students with a semester grade-point average of 3.5 or higher.
- Part-time students who, after completing a total of 12, 24, 36, 48 and 60 credit hours, have earned a cumulative grade-point average of 3.5 or higher.

Disability Support Services

Disability Support Services Office, McDowell Center

Schoolcraft College provides appropriate accommodations for students with documented physical, learning and emotional disabilities. Arrangements are designed to meet individual needs and are facilitated through a Disability Support Services Counselor. Services include, but are not limited to, specialized counseling, application assistance, referrals, adaptive equipment, textbooks on compact disks, testing accommodations, interpreters, note takers, tutoring, faculty liaison and modifications of computer and classroom facilities.

Distance Learning

Schoolcraft College provides students a variety of choices for earning credit. In addition to traditional in-class instruction, students can register for online courses, Open Entry/Open Exit courses or hybrid courses (each described in more detail in this section of the catalog).

Dropping a Class

See *Becoming a Student*, page 177.

Email for Students

See *Stay Connected*.

Emergency Notifications and Timely Warnings

Students may register to receive text, email and voicemail messages containing emergency notifications and timely warnings as well as information about weather-related college closings. Students can register for *SAlerts* via the Stay Connected webpage www.schoolcraft.edu/stayconnected.

- Emergency notifications are triggered by an event that is currently occurring or imminently threatening the campus.
- Timely warnings are issued when a crime has been committed on or near campus and represents a continuing threat to the campus community.

Employment Opportunities

Career Services Office, McDowell Center

This office has numerous resources for students, including:

- Jobs database updated daily for students and alumni. Database can be accessed at www.collegecentralnetwork.com/schoolcraft
- Job listings from local employers for full-time, part-time and temporary positions.
- Job listings for on-campus student employment.
- Publications with resume tips, sample cover letters, interview information, thank-you and acceptance letter examples.
- Job fairs and on-campus recruiting.
- Practice interviewing using the Perfect Interview, an interactive interviewing software program at www.perfectinterview.com/schoolcraft.

English Language Proficiency for Non-native Speakers/ English as a Second Language

Learning Assistance Center

A lack of English language proficiency does not prevent admission to Schoolcraft College; however, most college courses require basic proficiency in English. If English is not your first language, the college offers two different pathways to help you improve your English skills.

If you plan to pursue a college education in the United States, or you are on a student visa and need to earn credits toward a college program, you should enroll in our credit ESL courses. See pages 143–144 for credit course descriptions and page 176 for International Student Guidelines.

If your English skills are not strong enough for you to succeed in college-level classes, or if you would simply like to become more confident as you interact with American English speakers at work, home or school, you should consider the ESL classes are offered through Continuing Education and Professional Development. These classes do not grant college credit.

The LAC also offers an International Student Relations Club open to all non-native English students.

Fitness Center

734-462-4348 | www.schoolcraft.edu/fitnesscenter

The Schoolcraft College Fitness Center, located in the Physical Education Building, offers free memberships to all registered credit students and low-cost memberships to faculty, staff and the community. The Fitness Center is open seven days a week and features:

- state-of-the-art fitness equipment
- free fitness assessments and equipment orientation
- complimentary lockers
- free towel service.

Food Service

Henry's, located along Main Street in the VisTaTech Center, features an array of food and beverage choices to please any student or visitor to campus. A bountiful salad bar, fresh seafood, pasta and pizza are just some of the choices. Several homemade soups are prepared daily, and a wide selection of beverages is available, including freshly ground cappuccino and espresso. Henry's is the place to have breakfast, lunch or dinner while on campus. Hours are Monday–Thursday, 7:30 a.m.–7 p.m., Friday: 7:30 a.m.–2 p.m. Vending machines are located in every classroom building on the Livonia campus.

Options Snack Shop, at the Radcliff Center, offers soups, sandwiches and a wide selection of convenience foods.

FERPA (Family Educational Rights and Privacy Act)

See Student Rights and Responsibilities, page 196.

Global Endorsement

734-462-4400 ext. 5271 | international@schoolcraft.edu | www.schoolcraft.edu/scii

While earning a Global Endorsement, students have the opportunity to foster an international perspective and broader understanding of the global forces shaping their lives. In addition, these courses highlight the impact of global trends not only in relation to North America, but all over the world. The endorsement requires students complete a minimum of 15 credit hours of classes designated as Internationalized, containing at least two weeks of global or multicultural content.

Grades and Grade-Point Average

The grading system and computing method for grade-point averages are explained below.

Grades	Grade Scale
Excellent Performance	4.0–3.5
Very Good	3.4–3.0
Good	2.9–2.5
Average	2.4–2.0
Below Average	1.9–1.5
Poor	1.4–1.0
Failure	0.0
W *—Withdrawal	No points
I **—Incomplete	No points
AUDIT ***—No grade or credit awarded	No points
No Show (NS)****	No points
R—Repeated course	No points
* See Dropping Class(es) for a “W” Grade. Observe dates posted on the Important Dates page on our website. ** See Issuance of an Incomplete Grade. *** Students must request to audit when registering for classes. **** See Non-Attendance. Note: Individual programs may have special grade requirements.	

To calculate grade-point average, multiply the course credit hours by the grade received to get the grade points earned. Divide the total grade points earned by course credits earned to yield the grade-point average.

Graduation

Student Records Office, McDowell Center

When applying for graduation, students must:

- Complete degree requirements from the current catalog (year of graduation).

OR

- Complete degree requirements from the catalog in effect the year a student first entered Schoolcraft College or a subsequent catalog within the past six years. Students who have attended the college for five years or longer may be required to demonstrate skill in their fields before being approved as candidates for graduation.

OR

- Students who have not attended credit classes for three consecutive calendar years must follow the college catalog in effect when they return.

Any changes in these requirements must be approved in writing by the appropriate associate dean, dean, or the vice president of instruction.

Degree and certificate requirements are described on pages 11–16.

Applying for graduation

Students who plan to earn an associate degree or a certificate of program completion must complete an application for graduation and meet with an academic advisor or counselor. The registrar verifies the student for degree completion and, if appropriate, certifies the student for graduation. Degrees and certificates will be officially awarded and sent to the student approximately eight weeks after the end of the semester or session in which the student has completed the requirements and filed for the award.

Commencement ceremony

The commencement ceremony is held each year at the end of the winter semester, usually in late April or early May. The college encourages students earning associate degrees or certificates of program completion to participate in commencement ceremonies. Students completing their program requirements the following spring or summer session are qualified to participate. Commencement information is available on the college's website at www.schoolcraft.edu/graduation.

Grants

See *Becoming a Student*, page 178–179.

Guest Students

See *Becoming a Student*, page 176.

Health Insurance

Sickness and accident insurance is available for full- and part-time students. Insurance brochures are available in all student service offices in the McDowell Center and on the college website under Health Services.

Honors Program

See *Schoolcraft Scholars Honors Program*.

Identification

Each semester's tuition payment receipt identifies students as Schoolcraft College students. Students should carry it at all times when attending classes, using the library, computer labs, testing services or attending college-sponsored events.

Picture identification cards are available in the Registration Center at no charge for credit students. Another form of valid photo identification must be presented to obtain a card. There is a charge to replace a lost ID card.

International Students

Counseling and Academic Advising Office

For information about applying to Schoolcraft College as an international student, see *Becoming a Student*, page 176.

For information about English as a Second Language class offerings, see pages 143–144.

For information about services available for international students please contact the International Student Services Coordinator at 734-462-4400, ext. 5203.

Just-in-time Scheduling

As class sections fill up, Schoolcraft uses just-in-time scheduling to add sections based on student demand. Students are encouraged to frequently check WebAdvisor for newly added class sections.

Learning Support Services

Learning Assistance Center | www.schoolcraft.edu/lac

Bradner Library, 734-462-4436 | Radcliff Center, 734-462-4400, ext. 6021

Schoolcraft College provides a variety of learning support services and resources for students, emphasizing the student becoming an active and independent learner. Services and resources include:

- The Learning Assistance Center (LAC): students can access various tutoring and one-on-one services (faculty facilitators, peer-assisted learning, Writing Fellows), study skills development workshops and seminars, University Bound, DVDs for math skills, English language proficiency services, and student athlete support. More information about these resources and services are listed by their name in this section of the catalog.
- Libraries (see information below)
- Foundation and student success courses: designed to help students be as successful as possible in educational, occupational and personal endeavors. Includes College and Beyond, Human Development Services, Learning Resources, and several Collegiate Skills courses (each described in the Courses section of the catalog).

Libraries

Bradner Library, Livonia Campus, 734-462-4440 | Radcliff Library, 734-462-4400, ext. 6020

The college libraries support the curricular and personal enrichment needs of students, faculty and staff. In addition to an extensive collection of books and periodicals, the libraries provide online access from home and on campus to a variety of academic resources including partial and full text periodical databases, newspapers, e-books, almanacs, encyclopedias, the Schoolcraft library catalog and other reference resources. The libraries also provide computers with Internet access for academic research, and the Bradner Library provides free wireless Internet access via the Schoolcraft wireless network.

Schoolcraft students, faculty and staff may use and borrow books in both libraries. Community members may inquire about their eligibility to borrow under the statewide MichiCard borrowing program. During the fall and winter semesters, the Bradner and Radcliff Library hours are:

	Bradner Library	Radcliff Library
Monday–Thursday	7:30 a.m.–9 p.m.	8:30 a.m.–8 p.m.
Friday	7:30 a.m.–4 p.m.	9 a.m.–1 p.m.
Saturday	Noon–5 p.m.	Closed
Sunday	Noon–5 p.m.	Closed

Contact either library for hours of operation during break weeks, holiday periods and spring and summer sessions.

Loans

See financial aid information in the Becoming a Student section on page 179.

Lost and Found

All found items should be turned over to the Campus Security Police Department where the items will be recorded and held. For rules on disposition of these articles, see College Policy 1070.12, or call Campus Security Police at 734-462-4424.

Newspaper—The *Schoolcraft Connection*

Student Activities Office, Lower Waterman

The *Schoolcraft Connection*, Schoolcraft College's student-run newspaper, serves as a forum for expressing student opinion and a vehicle for reporting on college-related news and events from a student perspective. The *Connection* is open to all registered students on the basis of interest and demonstrated competency in writing, photography, layout, advertising, circulation or clerical skills. The *Connection* is distributed free to the campus community. Additional information and staff application forms are available in the Student Activities office and on the Student Activities office website, www.schoolcraft.edu/sao.

Organizations

See Student Activities Office.

Orientation

Admissions and Welcome Center, McDowell Center

Orientation provides new students with the essential information they need to make the transition to college. Schedule an on-campus orientation at www.schoolcraft.edu/orientation or by calling 734-462-4443. An online orientation is available at www.schoolcraft.edu/olo.

Paying for College

To help you meet your educational expenses, Schoolcraft offers a tuition payment plan for credit class tuition and fees, administered by Nelnet Business Solutions (NBS). NBS is a payment plan offered online that provides you with a low cost option for budgeting tuition and fees. It is not a loan program; therefore, you have no debt, there are no interest or finance charges assessed and there is no credit check. There is a \$30.00 per semester nonrefundable enrollment fee. Your enrollment fee and down payment will be processed immediately.

In addition to the NBS payment plan, the college participates in state and federal financial aid programs, including the Tuition Incentive Program (TIP), the Federal Pell Grant, and Federal Direct Student Loans. The college, in conjunction with the Schoolcraft College Foundation, offers scholarships to eligible students. For more information on financial aid, please see Becoming a Student pages 178–180.

Parking and Traffic

Traffic regulations with respect to speed and parking are posted on campus. Students, staff and visitors are required to follow the same traffic rules as on public streets. As a licensed operator of a motor vehicle, it is the driver's responsibility to observe the Michigan Vehicle Code laws as well as local ordinances. The speed limit on campus is 15 mph.

All parking lots are lined and vehicles are to be parked within the designated spaces. There is no parking on the diagonal yellow line areas on either end of parking rows in any parking lot. Several parking locations across campus are designated handicapped or staff and faculty parking only. Any vehicle that is parked improperly will be ticketed. No parking is permitted on any college street.

Livonia campus: Parking is available in the North, South and Central parking lots with the exception of restricted areas which are posted. Campus Security Police officers are authorized to write City of Livonia traffic citations by authority granted under Title VI, Chapter I, of the Livonia Code. Tickets are payable at the 16th District Court, 15140 Farmington Road, Livonia, Michigan. Information regarding the fines for violations can be obtained by calling the court at 734-466-2500, ext. 3542. Court dates must be set or tickets paid within 21 days.

Radcliff Center: Ample parking is available in a paved lot with entrances on Wildwood and Radcliff streets. Parking violations at Radcliff Center will be issued by the Garden City Police Department. Information for payment of fines can be obtained by calling 734-525-8805.

Performance Groups

Music ensembles

734-462-4403 | www.schoolcraft.edu/music

Schoolcraft College offers performance opportunities through the Chamber Singers, Choral Union, Jazz Band, Synthesizer Ensemble and Wind Ensemble. All groups rehearse regularly and perform concerts both on and off campus. Depending on the ensemble, the experience is available as an academic course that grants college credit, an academic course that can be audited (with no grading and no credit granted), and/or a Continuing Education and Professional Development course that does not grant college credit.

Theatre productions

734-462-4596

The Schoolcraft College Theatre Department presents two productions each year. Students are encouraged to audition, regardless of theatrical experience, and participate in other key roles such as set design, lighting, and sound.

Phi Theta Kappa

Student Activities Office, Lower Waterman

Phi Theta Kappa is the international honorary scholastic society for students attending community and junior colleges. The Schoolcraft College Omicron Iota Chapter has consistently been recognized as a five-star chapter since 1995, recognized for its community service contributions and leadership development opportunities for students. Eligibility information is available in the Student Activities office and on the office's website.

Refunds

Tuition and fees are 100 percent refundable through the end of the refund/schedule adjustment period. To receive a refund, a drop must be completed in WebAdvisor on or before the last date for refund/schedule adjustment period posted on the Important Dates page on the college's website and in the appropriate term's registration guide. Refund time frames may vary depending on the length of the class. Students who drop classes and receive a refund may have their financial aid adjusted and may owe money to the college.

Registration

See *Becoming a Student*, pages 176–177.

Residency Status

Residency status determines a student's tuition rate.

- A resident student is one whose legal residence is within the college district, which includes the public school districts of Clarenceville, Garden City, Livonia, Northville, Plymouth-Canton and part of Novi. Students are charged tuition based on the address on record in the Student Records office at the beginning of the semester. Students who move and change their residency status, but do not report the change, will be charged the appropriate tuition rate.
- A nonresident student is one who resides outside the college district.
- An out-of-state student is one whose legal residence is beyond the boundaries of the State of Michigan.
- International students who are admitted to the college are charged International tuition rates, regardless of length of residency within the district or state. Information on residency status reviews for visa holders is available by contacting the Student Records office.

The legal residence of unmarried students under 18 years of age is that of their parents or guardian, regardless of where the student may reside. For those older than 18, the legal residence is that city in which residence is permanently maintained.

Students who change their legal residence must complete a Change of Address form in the Student Records office. Students will be asked to provide one or more of the following items as proof of resident status:

- Valid driver's license, State ID or voter registration card showing the address in question.
- Bills from public utilities defined as electric, gas, or landline phone. Cell phone bills are not accepted.
- Current property tax statement/receipt, rental agreement/receipt, or tax return for the address in question.
- Pay stub or other proof the college finds acceptable.

The Registrar will review questions about resident and nonresident status. Residency rate reviews and address changes that impact tuition rates must be received on or prior to the deadline for the semester for which a review is requested. Deadlines are posted on the Important Dates page on the college's website and in the appropriate term's Registration Guide. Only students with adjustments of status pending may be eligible for a residency status review. Residency rate reviews will not be granted for previously attended semesters.

Safety and Security

Campus Security Police Department

Campus Security Police officers are on duty 24-hours-a-day, seven-days-a-week. In an emergency, Campus Security Police should be contacted immediately at 734-462-4424, or call 911. There are also blue emergency phones in each building that connect directly to Campus Security Police.

To promote safety and security on campus, the college provides two ways for students, faculty and staff to report an incident or complaint, report concerning or threatening behavior, or make a general report to Campus Security Police. One is the online reporting tool accessed on the SCcares webpage at www.schoolcraft.edu/sccares. Reports can be filed with a name or anonymously. Another way is to call Campus Security Police at the number listed above.

The Annual Security Report is available in the Campus Security Police Department located in the Service Building or on our website www.schoolcraft.edu/cleryact. The information is provided in compliance with the *Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act*.

Schedule Changes

See *Becoming a Student*, page 177.

Scholarships

See *Becoming a Student*, page 178.

Schoolcraft Scholars Honors Program

734-462-4400, ext. 5156 | honors@schoolcraft.edu | www.schoolcraft.edu/scholars

Schoolcraft Scholars, the college's honors program, links academic achievement with service to the community. Application to the program is accepted year-round and requires a 3.5 grade point average after graduation from high school or from 12 credits earned at Schoolcraft College. Note: High school students attending Schoolcraft through Dual or Special Enrollment are not eligible to participate in the Scholars Honors Program. Tuition is awarded for all honors classes as long as an honor student maintains an overall 3.5 grade point average while a student at Schoolcraft.

Students accepted into the program complete six honors classes and 100 hours of service. The first (Humanities 190) and final (Sociology 290) honors classes are required and are taken with other honor students. Students earn honors credit in four other courses of their choice by completing honors option projects under the direction of honors faculty members.

Stay Connected

www.schoolcraft.edu/stayconnected

Student email

Schoolcraft College requires email for all credit students. Students are expected to access their *SCmail* account at the Stay Connected webpage (web address listed above). Email is the primary means for communicating with students, and students will be held accountable for information shared by the college via the email account. Students may forward their Schoolcraft email to another email address. The college will not sell your email addresses or use them for any reason other than to communicate official college business and information.

Emergency alerts

Students may register to receive text, email and voicemail messages alerting them to weather-related college closings and other emergencies affecting Schoolcraft College and the surrounding area. Students can register for *SCalerts* at the Stay Connected webpage (web address listed above).

Reporting an incident/complaint

The college uses an online reporting tool for tracking and responding to complaints and incidents on campus. Students may use this online tool to submit an academic appeal, an appeal for late refund or W grade, or express a concern about academic integrity; report concerning or threatening behavior; or report an incident that is of general concern to the submitter. Reports can be submitted with a name or anonymously. Students can access *SCcares* through the Stay Connected webpage (web address listed above).

Mobile website

The college's mobile website delivers helpful content to smart phones, tablets and other mobile devices, including class cancellations due to instructor absence or other reasons, the college calendar of events and important dates, sports schedules, maps and more. Access *SCmobile* at www.schoolcraft.edu/m. A full description of the *SCmobile* features can be found through the Stay Connected webpage (web address listed above).

Student Activities Office

Lower Waterman, VisTaTech Center

Schoolcraft College believes out-of-classroom activities are essential to the total collegiate educational experience. Students are encouraged to participate in one or more college extracurricular activities for their personal enrichment and growth.

Schoolcraft College encourages students to organize college clubs and other groups that provide developmental experiences for their members, services to the campus and/or the local community, and opportunities to interact with a variety of people. Campus clubs and organizations focus on a wide variety of interests and opportunities including:

- professional and academic interests
- hobbies
- community involvement and service
- ethnic and cultural interests
- religious and political affiliations
- sports and fitness.

Information about current clubs and assistance in forming a new college student club are available in the Student Activities office and at www.schoolcraft.edu/sao.

Student Employment

See Career Counseling.

See Work-Study in *Becoming a Student*, page 179.

Study Skills

Learning Assistance Center (LAC) | www.schoolcraft.edu/lac

Bradner Library, 734-462-4436 | Radcliff Center, 734-462-4400, ext. 6021

Students who want to improve their textbook reading, note taking, memory retention, time management or test-taking skills can consult with a faculty facilitator at the LAC. Facilitators help students evaluate their learning skills, identify the appropriate courses and find resources for skill enhancement. In addition, a variety of handouts and Web resources are available to students seeking to improve their study skills, and the LAC regularly offers workshops and seminars addressing various subject areas and skills development.

Testing

Testing Center, McDowell Center

Placement testing

Placement in the appropriate class is important to academic success. Therefore the college may require new students to complete placement testing to assess readiness in English, mathematics, and reading. As an alternative to completing placement testing, applicants may submit ACT/SAT scores that are not more than three years old to the Student Records office. Students with guest student status are not required to take placement tests.

Students taking the placement test need to present their photo identification and their student number. There is no charge for your first test; however, there is a fee for subsequent attempts. Placement test scores are used to discuss course selection and academic planning with your academic advisor or counselor.

Make-up and distance learning tests

Instructors who permit students to make up exams may arrange for a make-up test to be taken at the Testing Center. Students taking online mathematics courses also may take their exams on a drop-in basis at the Testing Center as scheduled by their instructors.

College-Level Examination Program (CLEP)

CLEP is a national service offered by The College Board that enables students to earn college credits by taking an exam to demonstrate their knowledge and proficiency in a subject area. It is often referred to as credit-by-exam. CLEP exams are available in more than 30 subject areas and are offered by the Testing Center to students and the community. Pre-registration is required. Contact the Testing Center for information and registration materials or check the website at www.schoolcraft.edu/assessment.

DSST

DSST is a national testing program to receive college credit for learning acquired outside the traditional college classroom. More than 30 test titles are available through web-based testing. DSST exams are offered by the Testing Center and require pre-registration. Contact the Testing Center for information and registration materials. Additional information is available at www.schoolcraft.edu/assessment.

General Educational Development tests (GED)

The GED is a series of tests that measure knowledge and skills in reading, writing, mathematics, social studies and science. Candidates must be at least 18 years old. GED testing is scheduled on designated dates. Pre-registration is required. Contact the Testing Center for information or check the website at www.schoolcraft.edu/assessment.

ACT WorkKeys Examination Program

ACT WorkKeys Examinations are available for Michigan paraprofessionals who need to meet the No Child Left Behind Paraprofessional Certification requirements. Contact the Testing Center for test session dates and registration information or check the website at www.schoolcraft.edu/assessment.

Test proctoring site

The Testing Center offers community proctoring by appointment on an availability basis for other colleges. Virtual Learning Collaborative students may have their tests proctored in the Testing Center by making prior arrangements. Contact the Testing Center to schedule test proctoring.

Business and industry assessment services

The Testing Center offers proficiency testing of groups or individuals for purposes such as pre-employment, determining basic skills, entry-level skills or promotional eligibility. Various test instruments are available. Businesses are encouraged to visit or call for additional information.

Timely Warning and Emergency Notifications

See Emergency Notifications and Timely Warnings.

Tours

Admissions and Welcome Center, McDowell Center

A campus tour provides an excellent opportunity to learn about Schoolcraft's academic programs, see our facilities, and discuss campus life and other aspects of being a Schoolcraft student. Campus tours are offered at both the Livonia campus and the Radcliff Center in Garden City.

Culinary tours highlight how to apply to the culinary arts and culinary baking and pastry arts programs. Included is a tour of our state-of-the-art kitchens.

Visit www.schoolcraft.edu/tour to schedule either a campus tour or culinary tour at the Livonia campus. Contact the Radcliff Center directly at 734-462-4786 to schedule a visit.

Transcript Request

Student Records Office, McDowell Center

Students may request a transcript online through WebAdvisor, or by sending a fax request to 734-462-4506. When making a request to have a transcript sent, students must provide their name, Schoolcraft College ID number or last four digits of Social Security Number, signature, date of birth, and a complete address to which the transcript should be sent. (The college requires the student's authorization in order to provide a transcript. Authorization can come in the form of a signature or a request via an online secured system.)

Transcripts will be released only after all financial obligations to the college have been fulfilled. The college reserves the right to limit the number of transcripts sent to or on behalf of a student.

Students can print student/unofficial copies of their transcripts by accessing their WebAdvisor account. Only transcripts bearing the Schoolcraft College seal and Registrar's signature are considered official.

Transfer Options

Counseling and Academic Advising Office, McDowell Center

For information about transferring credits earned at Schoolcraft College to another college or university, see pages 17–19, or visit www.schoolcraft.edu/transfer.

For information about transferring credits earned from another college or university to Schoolcraft, see Credit for Prior Learning, page 185, or in the transfer credit equivalency section of WebAdvisor.

In the Counseling and Academic Advising office, students can work with an academic advisor or counselor on all the transfer tools needed for a smooth transfer to another college or university, including:

- Review transfer requirements for a specific major at another college
- Review academic history to ensure required courses have been met
- Discuss transfer options that best meet a student's needs
- Offer guidance on specific admission application requirements.

Transition Center

See Counseling Services.

Tuition and Fees

Cash, check, money orders, Visa, MasterCard, Discover and debit cards are accepted forms of payment. Tuition may be covered partially or in full by an approved financial aid award. The deadline for payment of tuition and fees varies by semester. See www.schoolcraft.edu/registration for dates.

A tuition payment plan is also available on WebAdvisor. This plan allows students to pay tuition and fees in installments. Payments are made via credit card (MasterCard, American Express and Discover) or via electronic withdrawal from a savings or checking account. There is an additional and separate enrollment fee for use of the tuition payment plan.

Residency status determines a student's tuition rate. See Residency Status.

Schoolcraft's fee structure provides an efficient and equitable combination of services into several modest fees that students pay each semester. The college reserves the right to assess additional fees as needed.

The Registration Fee helps defray the cost of the services related to your matriculation as a student. It encompasses services such as application processing, placement testing, registration, and the issuance of student ID cards.

Instructional Equipment Fees are assessed per credit hour to defray the increasing cost of maintaining, upgrading, and replacing the equipment used in our classrooms.

The Service Fee defrays the cost of several services that Schoolcraft provides to students for free including, but not limited to, parking and use of the Fitness Center (www.schoolcraft.edu/fitnesscenter).

Course Fees related to specific courses or programs are assessed depending upon your registration in specific classes. Course fees consist of a lab fee, an excess credit

hour fee or both. Lab fees cover the cost of special materials or equipment. Excess contact hour fees are charged when a class meets more hours during a week than the credit hours assigned to the class. Course fees are listed on WebAdvisor each semester and are in addition to tuition and other fees.

Students are required to purchase their own textbooks, supplies, personal attire (such as lab coats or clinic shoes, as required by courses), special equipment and tools. Most of these items may be purchased at the College Bookstore.

Company-Paid Tuition and Fees: The college will invoice companies for students' tuition, fees, books and supplies if the companies authorize the college to do so in a purchase order or authorization letter. The purchase order or authorization must be received by the Student Account Services office prior to registration. Authorizations are required each semester. Call 734-462-4586, for additional information.

Senior Adults Tuition Waiver: Students 60 years and older may take credit classes at Schoolcraft College at 50 percent of the resident tuition rate. For Continuing Education and Professional Development classes, a reduced course fee is specified for each course and is listed in schedules and brochures. In order to receive senior adult status, persons over sixty (60) years of age must verify their age (using a birth certificate, driver's license, or other legal documents) with the Registration Center (main campus), Continuing Education and Professional Development office, or the Radcliff Center (Garden City) at the time of registration or prior to the start of the course in order to receive the senior rate. No rate adjustments will be made after a course has started.

Tutoring

Learning Assistance Center (LAC) | www.schoolcraft.edu/lac

Bradner Library, 734-462-4436 | Radcliff Center, 734-462-4400, ext. 6021

Schoolcraft College provides free drop-in and online peer tutoring through the Learning Assistance Center (LAC). Schedules are available on Student Activities bulletin boards across campus and at the LAC. Students who would benefit from more extensive tutoring can meet with a Faculty Facilitator at the LAC to evaluate other tutoring options.

The Peer-Assisted Learning (PAL) program links participating instructors with their top former students (PALs) who provide academic support to current students. Under the direction of the instructor, PALs meet students outside of class to discuss course material, work on assignments and prepare for exams.

Writing Fellows are Schoolcraft students who are trained to help organize, evaluate and provide constructive feedback and technical help on writing assignments for any course.

University Bound

Learning Assistance Center, Bradner Library

University Bound is targeted toward students whose goal is transfer to a college or university for completion of a bachelor's degree. Students attend workshops and seminars, create an electronic portfolio, visit Wayne State University's campus, meet employers and develop mentor relationships with students and faculty. University Bound is a King-Chavez-Parks initiative in collaboration with Wayne State. The Freshman Focus component of the program targets incoming freshman to help them transition to a college setting and successfully complete their academic coursework.

Veterans

Counseling and Academic Advising Office, McDowell Center

Veterans Services Office

Veterans and their dependents are encouraged to contact the Schoolcraft College Veterans Liaison for information regarding Veterans Administration (VA) educational benefits. The Veterans Liaison helps veterans apply for VA educational benefits and operates as a contact person between the veteran and the VA.

Veterans attending college under the provisions of the G.I. Bill (Chapters 30, 32, 35, Title 38, Chapter 1607 and Chapter 1606, Title 10) are entitled to privileges and are responsible for complying with all Schoolcraft College regulations.

All financial obligations, including payment of tuition and fees, must be paid on the scheduled dates. A Veterans Request for Certification must be submitted to the Veterans Liaison each semester.

Chapter 31 (Vocational Rehabilitation) approved veterans are not required to pay tuition and fees at the time of registration.

Chapter 33 (Post 9/11) approved veterans are required to pay only their percentage, as determined by the Department of Defense, at the time of registration.

The VA allows a veteran to request advance payment of benefits to help defray the cost of registration. Eligible veterans must contact the VA Liaison to apply at least six weeks prior to the start of the semester. In compliance with the Department of Veterans Affairs, Circular 20-76-84, the college has developed the following standards for progress. Each student must conform to these standards to be eligible for VA Educational Benefit Certification:

- All veterans receiving educational benefits must have their class schedules approved by an academic advisor, counselor or the Veterans Liaison.
- A Request for Certification must be filed with the Veterans Liaison each semester.
- All changes of address, curriculum and withdrawal from courses must be reported immediately to the Veterans Liaison.

All veterans have the same rights and responsibilities regarding conduct and disciplinary action as other students.

Withdrawing from a Class

See Becoming a Student, page 177.

Work Study

See Becoming a Student, page 179.

Student Rights and Responsibilities

Privacy Rights

The Family Educational Rights and Privacy Act (FERPA) of 1974 protects the privacy of educational records, establishes the right of students to inspect and review their educational records and provides guidelines for the correction of inaccurate or misleading data. Each year Schoolcraft College notifies students of these privacy rights and outlines the public information that can be released outside the institution.

No one outside the institution shall have access to nor will the institution disclose any information, other than directory information, from students' educational records without the written consent of the student. Exceptions permitted under FERPA include:

- information released to qualified persons within the institution
- officials of other institutions in which students seek to enroll
- persons or organizations providing student financial aid
- accrediting agencies carrying out their accreditation function
- members of the Schoolcraft Community who are individually or collectively acting in the educational interests of students
- persons in compliance with a judicial order and in an emergency to protect the health or safety of students or other persons.

Upon request, Schoolcraft discloses education records without consent to officials of another school in which the student seeks or intends to enroll or where the student is already enrolled so long as the disclosure is for purposes related to the student's enrollment/transfer.

Students wishing to review their educational records must file a written request with the Registrar. Records covered by FERPA will be made available within 45 days of the receipt of the request. The right to a review or hearing under the Act does not include any right to challenge the appropriateness of a grade as determined by the instructor. However, students may use this process to verify that the instructor's grade has been properly transmitted to the student's records. Any inspection shall be made under the supervision of a Schoolcraft College employee. Students may not inspect or review the following as outlined by FERPA:

- financial information submitted by their parents
- confidential letters and recommendations associated with admissions, employment, job placement or honors to which they have waived their rights of inspection and review
- educational records containing information about more than one student, in which case the institution will permit access only to the part of the record which pertains to the inquiring student.

If an individual student feels that his or her official records are inaccurate, misleading or otherwise inappropriate, the student may discuss his/her concerns informally with the person(s) in charge of the records involved. If these persons agree with the student, the appropriate records will be amended. If not, the student will be notified within a reasonable period of time that the records will not be amended, and also will be informed by the vice president of student services of the student's right to a formal hearing.

At its discretion, the college is authorized to release directory information which includes, but is not limited to a student's name, address, telephone number, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and academic awards received, and the most recent previous educational institution attended by the student. Students may request that this information be withheld by notifying the Student Records office in writing.

Academic Standards Policies and Appeals Procedure

Schoolcraft College has an expectation that students will attend class regularly, be active participants in their education, avail themselves of services and resources that support the learning process, and make every effort to be successful. However, the college does recognize that circumstances may hinder a student's success and when they fail to meet the minimum academic standards, academic disciplinary action may be required.

Academic Probation

Students who have completed 15 credit hours and earned cumulative grade-point averages below 2.0 are placed on academic probation. The college records probationary status on student transcripts. Students on academic probation must meet with a counselor before registering for any semester or session until academic probation is removed. Academic probation is removed when the cumulative grade-point average is 2.0 or higher.

Academic Dismissal

Any student on academic probation who fails to earn a cumulative grade-point average of 2.0 or higher after completing a total of 30 credit hours will be academically dismissed from the college. The official record (transcript) reflect this status. The student will be notified by first-class mail. A student may appeal the dismissal. Students receiving financial aid assistance or Veteran benefits must meet the specific academic requirements that determine continuation for these programs.

Readmission for Academically Dismissed Students

In order to be readmitted, students must follow the guidelines for appeal outlined in the academic dismissal notification they receive via first-class mail.

Academic Forgiveness

Students can seek Academic Forgiveness for coursework completed more than 10 years ago if they have completed at least an additional 12 credit hours at or above a cumulative 2.0 GPA. Academic Forgiveness may be granted for one semester or session's worth of work (regardless of the number of credits) or a total of 12 credit hours total over several semesters or sessions.

Academic Forgiveness can only be granted once and is non-reversible once it is granted. Due to federal regulations the Student Financial Services office does not acknowledge Academic Forgiveness when determining eligibility for aid. Transfer institutions may or may not acknowledge Academic Forgiveness. Written request for consideration for Academic Forgiveness must be filed by the student, signed by the student's counselor or academic advisor, and submitted to the Registrar for consideration.

Appeals Procedure for Academic Matters

Students may appeal academic decisions regarding a grade or other actions resulting from their academic performance. Students must follow the proper steps in the appeal process, observing the time limits for completion of various steps in the process as follows:

Step I

Students must seek to resolve academic matters informally with the instructor within ten working days of the occurrence, or issuance of a grade. If the student's concerns remain unresolved after the discussion with the instructor, the student may proceed to Step II within ten working days after speaking with the instructor. During the spring/summer session(s), when an instructor may not be available, students may proceed to Step II after an effort is made to communicate with the instructor.

Step II

Students may formalize complaints by completing an online Incident Report form on our website at www.schoolcraft.edu/sccares.

The administrator will review the complaint, investigate the facts, and send a written decision to the student within ten working days. If both the student and administrator agree, the time limit may be extended.

Step III

If the academic issue is not resolved to the student's satisfaction, an appeal may be made to the vice president of instruction. The student must complete an online Incident Report form on our website at www.schoolcraft.edu/sccares within five working days of receipt of the Step II decision.

The vice president of instruction will hear the complaint, investigate the facts and, if needed, convene a hearing of the individuals involved. A written decision will be given within ten working days of submission of the appeal. Certain circumstances may make it impossible to respond within the ten day time limit. If both the student and the vice president of instruction agree, the time limit may be extended; otherwise a decision will be made on available facts. Occasionally a situation arises which requires more immediate action. Examples include deadlines such as graduation dates, external testing dates, and transfers to other institutions or employment opportunities.

The student may request an Expedited Process from the vice president of instruction by completing an online Incident Report form on our website at www.schoolcraft.edu/sccares. If the vice president of instruction and vice president of student services concur, the case will proceed immediately to Step IV.

Step IV

If the matter is still unresolved, the student must notify the vice president of student services by completing an online Incident Report form on our website at www.schoolcraft.edu/sccares no later than five working days after the Step III decision is rendered. The vice president of student services will convene and chair a Hearing Committee within ten working days. The Hearing Committee will have an equal number of faculty, students, and administrators. Students have a right to:

- Hear all statements made about the situation and examine relevant materials, as long as such examination does not violate the Family Rights and Privacy Act or other laws and policies.
- Question any person or material presented.
- Present their own cases including supporting material or testimony.
- Have an advisor or legal counsel present, who will not speak for the student.
- Tape record the hearing or otherwise make a record of the proceedings.

The vice president of student services will complete the process with a final written decision to the student no later than ten working days after the hearing. That decision* is final and concludes the appeal process.

**A review of the decision is conducted by the college president and/or designee and may involve legal counsel.*

Financial Aid General Rights and Responsibilities

Eligibility for Financial Aid

Eligibility requirements vary from program to program. Financial aid program awards are determined and disbursed in compliance with established federal, state and institutional requirements and guidelines. In addition to meeting program eligibility requirements, students must adhere to college policies and procedures.

Financial Need

Financial aid programs were developed on the premise that the student and spouse, if married, or the student's family, have the primary responsibility for financing a college education. Financial aid is available to supplement the student's and family's resources. Most aid dollars are awarded on the basis of a federal need analysis formula established by the U.S. Congress. The formula measures each family's ability to pay for college expenses and is calculated using all the questions and answers on the Free Application for Federal Student Aid (FAFSA). The result is the student's Expected Family Contribution.

The following formula is used to determine an individual student's need for financial aid: $\text{Cost of Attendance} - \text{Expected Family Contribution} = \text{Financial Need}$. Students may be awarded up to their total need from various financial aid programs.

Depending on eligibility, an award package can be any combination of grants, scholarships, work-study and loans. The student can accept or reject all or any part of the award package.

Selection of Recipients

In addition to program eligibility requirements and financial need, students are selected to receive financial aid based on deadlines and maintaining satisfactory academic progress.

Schoolcraft College awards financial aid in the following order, depending on the student qualifications: 1) grants, 2) scholarships, 3) work-study, 4) student loans.

The Student Financial Services office determines the type and amount of each award. The type and amount of award are based on a variety of factors including financial need, outside resources, class attendance, enrollment status, dependency status, program limitations and the availability of funds. When funds are limited, awards may be granted to applicants who meet all requirements and have a complete financial aid file.

Cost of Attendance for Financial Aid

Using rules established by the U.S. Congress, the college sets cost of attendance allowances in order to determine financial aid. These reflect modest book, travel, room, board and miscellaneous allowance, as well as average tuition and fee charges. In certain circumstances, if applicable, it may reflect costs related to dependent care, a disability and loan fees.

Typical Cost of Attendance for a Full-Time Student

	Resident	Non-Resident
Tuition and fees	\$2,752	\$3,792
Books and supplies	\$1,300	\$1,300
Transportation	\$1,984	\$1,984
Miscellaneous	\$1,372	\$1,372
Room and board	\$6,415	\$6,415
Total	\$13,823	\$14,863

Figures are based on 2012–13 academic year costs and subject to adjustment due to changes in law and Schoolcraft College Board of Trustee policy. Actual costs will vary from student to student.

Transferring to Another College

Students planning to transfer to a four-year institution should contact that institution's Financial Aid office for financial aid requirements, deadline dates and application procedures. Students usually begin the application process in January or February for the following September. Students who transfer from one institution to another within the same academic year will have their aid prorated based on use at the first institution attended.

Financial aid is generally not transferable from one institution to another. Students must complete the award process at each institution attended.

Transfer Scholarships

Colleges and universities award many scholarships to graduates of Schoolcraft College who plan to transfer to their institutions. Scholarships are awarded on the basis of academic achievement, financial need or other specified criteria. Contact the college to which you plan to transfer or the Schoolcraft College Counseling and Academic Advising office for information on transfer scholarships.

Attendance at Multiple Institutions

Students may not receive financial aid at another institution and Schoolcraft College concurrently. Students will be responsible for any over awards and will not be eligible for further aid until the funds are repaid.

Study Abroad

Students may be eligible for federal assistance for attending a study abroad program that is approved for credit by Schoolcraft College. Contact the Student Financial Services office to determine individual eligibility.

Class Attendance

Students enrolled in credit class(es) need to attend their class(es) to establish and maintain financial aid eligibility. Instructors record the attendance of all students each week. To establish attendance in an Open Entry/Open Exit (OE/OE) class, students must complete the orientation and submit at least one academic assignment or take at least one academic test. To establish attendance in online courses, students must log-in weekly and submit at least one academic assignment or take at least one academic test. To establish attendance in a Hybrid class, students must attend on-campus class sessions and submit at least one academic assignment or take at least one academic test. The Student Financial Services office is notified of the financial aid students who never attend or stop attending classes.

Not attending a class(es) may affect the amount of aid a student is receiving now and in the future. **Nonattendance usually results in the student owing money to the college.**

Withdrawals and Refunds

The college's tuition and fee refund policy is that tuition and fees are 100 percent refundable through the end of the schedule adjustment period for each course. Refund time frames may vary depending on the length of the course. See the Important Dates page on our website each semester for specific refund dates. Students who drop classes and receive a 100 percent refund may have their financial aid adjusted and may owe money to the college.

Students withdraw from courses through WebAdvisor. See the Important Dates page on our website each semester for specific withdrawal dates. Please contact the Registration Center with questions about online withdrawal. Students who withdraw from class(es) receive a W grade. The grade of W does not adversely affect the student's grade-point average. However, a W is considered an attempted and not completed course and does adversely affect the student's completion rate. See the Academic Progress Policy.

Complete Withdrawal (Return of Title IV Funds and Unearned Financial Aid)

When a student completely withdraws or walks away from his/her classes before completing at least 60 percent of the semester, federal law requires the college and sometimes the student to return a percentage of the Title IV funds received by the student. Title IV program funds include Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, College Work Study, and Federal Direct Student Loans.

The number of days students have attended during the semester determines the amount of the students' earned Federal Title IV funds. Earned Title IV financial aid may be used to pay for institutional charges of tuition and fees, or used toward non-institutional expenses such as room and board, books, supplies and transportation.

Unearned Title IV funds must be returned to the federal government. The college must return a portion of the students' unearned aid. Students will owe the college for any resulting unpaid institutional charges (tuition, fees and bookstore charges). In addition, students must return to the federal government a portion of unearned funds received in excess of tuition and fees. Students will be ineligible for future financial aid at any college or university if the unearned funds are not repaid to the U.S. Department of Education.

Contact the Student Financial Services office for current Return to Title IV Funds schedules and examples.

Financial Aid Satisfactory Academic Progress Policy

In addition to meeting individual financial aid program requirements, students have to make satisfactory academic progress toward completing a degree or certificate program to receive aid.

The Schoolcraft College Satisfactory Academic Progress Policy applies to all students who receive financial aid from any program we administer. Federal regulations require that the policy includes reviewing semesters for which students did not receive aid, as well as the semesters students did receive aid.

The following guidelines describe the requirements necessary to maintain financial aid eligibility at Schoolcraft College.

1. Eligibility Requirements—A student must:

- Successfully complete at least 67 percent of all Schoolcraft College credit hours attempted or be a first-time student at Schoolcraft College.
- Have a cumulative Schoolcraft College grade-point average of at least 2.0.
- Along with transfer credits, not have attempted more than 90 credit hours or 150 percent of the student's official Schoolcraft College academic program requirements.

2. Evaluation of Eligibility

Eligibility is determined when a student applies for financial aid each academic year and/or upon student request. Applicants who have not made satisfactory academic progress are notified by U.S. mail.

3. Warning

Financial aid applicants who have attempted fewer than 12 credit hours and do not meet the eligibility requirements will be given a warning and granted aid for one semester. After the completion of the warning semester, the student must meet grade point average and completion ratio standards of progress.

4. Probation

Students who have attempted 12 or more credit hours and do not meet the eligibility requirements will be denied financial aid. In order to be considered for a probationary period of financial aid, students must submit a letter of appeal, including appropriate documentation, to the Student Financial Services office (see below).

Students who fail to make satisfactory academic progress after the probationary period will have their financial aid withdrawn until they meet the standard or submit an acceptable appeal. Loans are generally not awarded to students on probation.

5. Appeals

A student whose financial aid has been terminated may appeal in writing. All appeals must include appropriate documentation. Extenuating circumstances considered for appeals include personal illness or accident, serious illness or death of an immediate family member, or other circumstances beyond the reasonable control of the student. Students in extended credit-hour programs and/or second degree programs, who have attempted more than 90 credit hours, may submit appeals. They must submit a Degree Worksheet with a Course Selection Plan signed by a

counselor, and must write a letter explaining their request to the Student Financial Services office.

Acceptable documentation includes letters from a physician, attorney, social service agency, parole officer, or an obituary notice, divorce decree and/or academic records. The student will be notified of the appeal results in writing. Appeals can result in a) denial of reinstatement, b) reinstatement of the student's eligibility, or c) a probationary period.

If your situation does not fall under this category, you must follow the reinstatement process listed below.

6. Reinstatement

A student may be reinstated after meeting one of the following conditions. (Classes taken at institutions other than Schoolcraft College are not considered for reinstatement purposes.)

- The student has taken, without funding from the Student Financial Services office at least six credit hours and has passed those six credit hours. The student will be given probationary aid for one semester. Students who successfully complete all registered credits with a 2.0 or higher, and no W, I, or NS grades, may be eligible to have their probation status extended on a term-by-term basis.
- The student has taken, without funding from the Student Financial Services office, enough credit hours to meet the grade-point average and completion rate requirements. The student will be reinstated without probation.
- The student meets the grade-point average and completion rate requirements after the probationary period. The student will be reinstated without probation.

7. Grades and Successful Completion

Credit hours attempted include all grades recorded on the transcript of 4.0 through 0.0, W, R, NS and I (W = Withdrawal, R = Repeated course, NS = No Show, I = Incomplete). Repeated courses are identified as R on the transcript and are considered as credit hours attempted. Successful grades are 1.0 through 4.0. Unsuccessful grades are 0.0, W, R, NS and I. Unsuccessful grades are considered attempted and not passed for purposes of determining satisfactory academic progress.

8. Audit and Credit by Exam

Classes taken for audit or credit earned by exam are not considered when determining financial aid eligibility.

9. Repeat Courses

Students may repeat failed courses or courses in which the student does not attain the minimum grade required for their program. However, excessively repeating courses is discouraged and could affect financial aid eligibility.

10. NS (No Show) Grades

The NS grade signifies non-attendance. Financial aid will be reduced or eliminated for courses with an NS grade. The student is responsible for any resulting balance. Please see the Non-Attendance section under Registration for more information.

Student Code of Conduct and Judicial Procedures

Introduction

Schoolcraft College exists to serve students and the surrounding community, providing a transformational learning experience to increase the capacity of individuals and groups to achieve their intellectual, social, and economic goals. The college is also a community, and students are important members of this community. Schoolcraft College supports a positive educational environment that will benefit student success. In order to ensure this vision, to ensure the protection of student rights and the health and safety of the college community, as well as to support the efficient operation of college programs, Schoolcraft College has established a Student Code of Conduct. Every student should know the responsibilities that students assume toward other students, faculty and staff as equal members of this community. Schoolcraft College cannot condone or support any action or activity by an individual or group that impinges on the rights of others, whether these individuals are members of the student body or the community at large.

Student Rights

Members of the student body enjoy the same rights and privileges guaranteed to them as citizens of the United States and as residents of the State of Michigan; they enjoy the same freedoms of speech and peaceable assembly as all citizens, but they are under certain legal obligations in the exercise of these freedoms by virtue of their membership in the college community. As a member of the Schoolcraft College community, a student is free to take advantage of all the educational opportunities available and to participate in all extracurricular activities sponsored by the college.

Student Responsibilities

Along with rights come certain responsibilities. No student may take any action that restricts other individuals from pursuing their educational goals or interferes with the Board of Trustees, its representatives and college faculty and staff in the performance of their duties. In cases of noncompliance with the Student Code of Conduct, the college will impose discipline that is consistent with the impact of the offense on the college community. Schoolcraft College reserves the right to pursue criminal and/or civil action where warranted.

Students and student organizations have a right to expect enforcement of the Student Code of Conduct rules and regulations. Schoolcraft College expects students and student organizations to abide by this Code. It is important to note that unfamiliarity with these regulations is not grounds for excusing infractions.

Definitions

1. The term “college” means Schoolcraft College.
2. A “student” under this Code is defined as anyone who has been admitted to the college and with a continuing educational interest in the college. The term includes all persons taking courses at the college, either full-time or part-time. Persons who withdraw after allegedly violating the Student Code, who are not officially enrolled

- for a particular term but who have a continuing relationship with the college or who have been notified of their acceptance for admission are considered “students.”
3. The term “faculty member” means any person hired by the college to conduct classroom or teaching activities or who is otherwise considered by the college to be a member of its faculty.
 4. The term “college official” includes any person employed by the college, performing assigned administrative or professional responsibilities.
 5. The term “member of the college community” includes any person who is a student, faculty member, college official or any other person employed by the college.
 6. The term “college premises” includes all land, buildings, facilities, and other property in the possession of or owned, used, or controlled by the college (including adjacent streets and sidewalks).
 7. The term “college sponsored or supervised activities” includes, but is not limited to: field trips, off-campus social activities organized by the college, official activities of college clubs, etc.
 8. The term “organization” means any number of persons who have complied with the formal requirement for college recognition as a student club or organization.
 9. The term “Student Conduct and Disciplinary Committee” means any person or persons authorized by the vice president of student services to determine whether a student has violated the Student Code and to recommend sanctions that may be imposed when a rules violation has been committed.
 10. The term “chair of the Student Conduct and Disciplinary Committee” means a college official authorized on a case-by-case basis by the vice president of student services to impose sanctions upon any student(s) found to have violated the Student Code. The vice president of student services may authorize a college administrator to serve simultaneously as the chair of the Student Conduct and Disciplinary Committee and the sole member or one of the members of the Student Conduct and Disciplinary Committee. The vice president of student services may authorize the same chair of the Student Conduct and Disciplinary Committee to impose sanctions in all cases.
 11. The vice president of student services is the person designated by the college president to be responsible for the administration of the Student Code.
 12. The term “policy” means the written regulations of the college as found in, but not limited to, the Student Code of Conduct, the college website and catalog.
 13. The term “complainant” means any person who submits a charge alleging that a student violated the Student Code of Conduct. When a student believes that she/he has been a victim of another student’s misconduct, the student who believes she/he has been a victim will have the same rights under the Student Code of Conduct as are provided to the complainant, even if another member of the college community submitted the charge itself.

14. “Academic Honesty” is expected of all students. Academic honesty is ethical behavior in which students produce their own work and do not represent others’ work as their own, either by plagiarism, by cheating or by helping others to do so.
15. “Plagiarism” is the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.
16. “Cheating” is:
 - The use of any unauthorized assistance in taking quizzes, tests or examinations.
 - The use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments.
 - The acquisition, without permission, of tests or other academic materials belonging to a member of the college faculty or staff.
 - Engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion.
 - Allowing or participating in cheating by other students.
 - Copying from someone else’s work.
 - Submitting others’ work as your own or submitting your work for others.
 - Altering graded work and falsifying data.

ARTICLE I: AUTHORITY

The Student Code of Conduct shall apply from the time of admission to the college and continue as long as the student remains enrolled at the college. It shall also be applicable to a student’s conduct even if the student withdraws from school while a disciplinary matter is pending.

The college may take disciplinary action for a violation of the Student Code of Conduct when the offense takes place on college premises or at college sponsored, endorsed, supported or related events which occur on or off campus, or when an offense which occurs off campus is such that in the judgment of the vice president of student services, failure to take disciplinary action is likely to interfere with the educational processes or orderly operation of the college, or endanger the health, safety and welfare of the college community.

The vice president of student services (or designee) shall:

- Determine the composition of the Student Conduct and Discipline Committee and the Appeals Board.
- Develop policies for the administration of the Code of Conduct.
- Develop procedural rules for the conduct of student hearings which are consistent with the provisions of the Student Code of Conduct.
- Authorize the suspension of any student when the circumstances warrant immediate action such as in cases of threatening or assaultive behaviors (See “Emergency Sanctions”).

- Determine whether or not the Student Conduct and Discipline Committee shall be authorized to hear each matter.

The Student Conduct and Discipline Committee may be designated as the arbiter of disputes within the student community in cases that do not involve a violation of the Student Code. All parties must agree to arbitration and to be bound by the decision with no right of appeal.

Decisions made by the Student Conduct and Discipline Committee and/or the vice president of student services (or designee) are final.

ARTICLE II: ACADEMIC AND PERSONAL BEHAVIORS

This section establishes the rules and regulations all students and student organizations are expected to follow. In consideration of the rights of and responsibilities to each member of the college community, and in compliance with the requirements of local and state statutes, the Board of Trustees of Schoolcraft College has adopted the following regulations and prohibits all students from engaging or participating in any of the practices or behaviors listed below. From time to time, additional rules and regulations may be added or amended during the year if necessary; announcements will be made upon adoption of the changes or additions and the website will be updated.

The following list is illustrative and not meant to be an exhaustive enumeration of inappropriate behavior.

Prohibited Behaviors/Violations

1. Obstruction or disruption of teaching, lecturing, research, administration, disciplinary procedures or other authorized activities on college property. Interference with the proper educational functions and the appropriate educational climate of the college, including aiding and abetting another to breach the peace on college-owned or controlled property, at college sponsored/supervised functions, or off-campus conduct that adversely affects the college community and/or the pursuit of its objectives. Such activity includes, but is not limited to, behavior in a classroom or instructional program that interferes with the instructor or presenter’s ability to conduct the class or program, or the ability of others to profit from the class or program.
2. Physically harming or restraining another person. Actions which result in physical harm, have the potential for physically harming another person, which create conditions that pose a risk of physical harm to another, or which cause reasonable apprehension of physical harm are prohibited. Conduct which threatens to cause harm to persons, or creates hazardous conditions for persons, such as dropping, throwing, or causing objects or substances to fall from windows, doors, ledges, balconies or roofs is also prohibited.
3. Discrimination, harassment and offensive conduct against any person, student, or staff member on the basis of race, creed, color, sex, age, marital status, disability, and/or national origin.
4. Retaliatory harassment, which is any adverse educational action taken against a person because of the person’s participation in a complaint or investigation of discriminatory or sexual misconduct.

5. Bullying, harassment and conduct or expression (verbal or written) which threatens or endangers the health or safety of any person. Cyber bullying, which is willful and repeated harassment and intimidation of a person through the use of digital technologies, including, but not limited to email, blogs, texting, social websites, chat rooms, “sexting,” instant messaging, recording another person without his/her consent and transmitting images of another person without his/her consent.
6. Stalking another person, defined as repeated contact without his/her consent and which causes significant mental suffering or distress. Cyber stalking, which is engaging in a course of conduct to communicate, or to cause to be communicated, words, images or language by or through the use of email or other digital technologies, directed at or about a specific person, causing substantial emotional distress to that person.
7. Gender-based and/or sexual misconduct, which includes, but is not limited to the following offenses: Sexual discrimination, sexual harassment, non-consensual sexual intercourse (or attempts to commit same), non-consensual sexual contact (or attempts to commit same), sexual exploitation or other conduct that threatens the health and safety of any person on the basis of actual, expressed or perceived gender identity.
8. Hazing is an act which endangers the mental or physical health or safety of a student, or which destroys or removes public or private property for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in, a group organization and/or sport. No student or person associated with Schoolcraft College or attending the college will commit any act that injures, degrades, or disgraces any person attending the college. The express or implied consent of the victim will not be a defense. Apathy or acquiescence in the presence of hazing are not neutral acts; they are still violations of this rule.
9. Gambling on campus or at any college-sponsored function (excludes approved charitable fundraising activities).
10. Attempted or actual theft of or damage to property.
 - a. THEFT: Theft of any kind, including seizing, receiving, or concealing property with knowledge that it has been stolen, is prohibited. Sale, possession, or misappropriation of any property without the owner's permission is also prohibited.
 - b. DAMAGE TO PROPERTY: Damage to or destruction of property owned by another and/or some actions that have the potential for such damage or destruction is prohibited. Conduct which threatens to damage, or creates hazardous conditions such as dropping, throwing, or causing objects or substances to fall from windows, doors, ledges, balconies or roofs is also prohibited. This includes, but is not limited to, unauthorized application of graffiti, paint, etc. to any property.
11. Any act of arson, creating a fire hazard, falsely reporting a fire or other emergency, falsely setting off a fire alarm, possession of and/or use of fireworks (including sparklers) or explosives of any kind, misusing or damaging fire or life safety equipment, possessing or using, without proper authorization, flammable materials or hazardous substances on college property.
12. Unauthorized entry in or use of college facilities and/or premises, including unauthorized possession, duplication, or use of keys to any college premises. Unauthorized entry into, presence in, or use of college facilities, equipment, or property that has not been reserved or accessed through appropriate college officials is prohibited.
13. Making, possessing, submitting or using any falsified college document or record; altering any college document or record, including identification cards. Attempted or actual financial aid fraud or corresponding behaviors that would allow a student to receive monetary benefit for which he or she is not eligible. Altering any college document or record without permission is forbidden, including, but not limited to, furnishing false personal or student organization registration information, withholding material information from the college processes or procedures, or any other type of fraudulent act involving documentation provided to or for the college.
14. Acts of academic dishonesty, including but not limited to cheating, plagiarism, or any other form of academic dishonesty.
15. The use of college resources to infringe upon copyright laws (print, digital and internet) is prohibited. This applies to all forms of electronic media including, but not limited to, software, electronic encyclopedias, image files, video files and sound files.
16. Illegal or unauthorized use, possession, or distribution of alcoholic beverages or being under the influence of alcohol. Students and student organizations must comply with the published regulations and any and all applicable laws concerning the transport, display, provision, and consumption of beer, wine, and other alcoholic beverages. Violating any other provision of the Student Code of Conduct while under the influence of alcohol is a violation of this alcohol policy.
17. Use, possession, distribution, manufacture, sale of drugs or being under the influence of marijuana, heroin, narcotics or other controlled substances except as expressly permitted by federal law. The possession, use, manufacture, sale, or distribution of any counterfeit, illegal, dangerous, “designer,” or controlled drug or other substance is prohibited. Violating any other provision of the Student Code of Conduct while under the influence of any illegal or illegally obtained drug is also a violation of this policy. The use of prescription medications by anyone other than the person to whom the medication is prescribed is prohibited and may result in student conduct action against both parties.
18. Failure to comply with directions of college employees, Campus Security Police, or any other law enforcement officers acting in the performance of their duties. Students are required to produce identification for a college official when asked, specifically for their student ID card.
19. Serious or repeated violation of campus traffic rules and regulations. Skateboarding, roller-skating and in-line skating are prohibited on college property.

20. Possession or use of firearms, tasers, stun guns, explosives, other weapons, dangerous chemicals, or improper use of fire extinguishers on college property.

NOTE: Exceptions to possession or use of firearms are:

- a. Certified law enforcement officers
 - b. Students enrolled in Schoolcraft College classes requiring firearms training
 - c. College-owned firearms used for instructional purposes.
21. Participation in a campus demonstration which disrupts the normal operations of the college and infringes on the rights of other members of the college community. Leading or inciting others to disrupt scheduled and/or normal activities within any campus building or area; intentional obstruction which unreasonably interferes with freedom of movement, either pedestrian or vehicular, on campus.
22. Violating Schoolcraft College Computer Usage policies, including but not limited to:
- a. Unauthorized entry into a file to use, read, or change the contents, or for any other purpose.
 - b. Unauthorized transfer of a file.
 - c. Unauthorized use of another individual's identification and password.
 - d. Use of computer facilities to interfere with the work of another student, faculty member, college personnel, or employee.
 - e. Use of computer facilities to interfere with normal operation of the college computing system.
 - f. Sending or receiving material of a profane, pornographic or threatening nature.
 - g. Use of personal information from college systems to harass students, staff, or faculty on or off campus.
23. Conduct that is indecent or obscene including but not limited to:
- a. The use of any device to capture audio, video, or digital record or photograph of any person while on college premises or college events where there is a reasonable expectation of privacy (i.e., restrooms, locker rooms, etc.).
 - b. The storing, sharing, and/or distributing of such unauthorized records by any means is also prohibited.
 - c. Indecent or obscene conduct includes making obscene remarks, exposing oneself in an indecent manner, entering restrooms against the gender designation, urinating or defecating in public and/or engaging in sexual activities in public places.
24. Violation of federal, state and local laws. Engaging in conduct that violates any municipal or county ordinance, federal or state law.
25. Misusing, failing to comply with, or jeopardizing Code of Conduct procedures, sanctions/interventions, or interfering with participants. Abuse of the Student Conduct System includes but is not limited to:
- a. Failure to obey the summons of the Student Conduct Committee or a college official.
 - b. Falsification, distortion, or misrepresentation of information before the Student Conduct and Disciplinary Committee or the vice president of student services.

- c. Disruption or interference with the orderly conduct of a hearing.
- d. Institution of a hearing or proceeding knowingly without cause.
- e. Attempting to discourage an individual's proper participation in, or use of, the Student Conduct System.
- f. Attempting to influence the impartiality of a member of the Student Conduct Committee or the vice president of student services prior to and/or during, and/or after a proceeding.
- g. Harassment (verbal or physical) and/or intimidation of a member of the Student Conduct Committee or Appellate prior to, during, and/or after a proceeding.
- h. Failure to comply with the sanction(s) imposed under the Student Code.
- i. Influencing or attempting to influence another person to commit an abuse of the Student Conduct System.

Violation of the Law and College Discipline

If a student is charged only with an off-campus violation of federal, state, or local laws, but not with any other violation of this Code, disciplinary action may be taken and sanctions imposed for grave misconduct that demonstrates flagrant disregard for the college community.

College disciplinary proceedings may be instituted against a student charged with violation of a law which is also a violation of this Student Code; for example, if both violations result from the same factual situation, without regard to the pendency of civil litigation in court or criminal arrest and prosecution. Proceedings under this Student Code may be carried out prior to, simultaneously with, or following civil or criminal proceedings off campus.

When a student is charged by federal, state or local authorities with a violation of law, the college will not request or agree to special consideration for that individual because of his or her status as a student. If the alleged offense is also the subject of a proceeding under the Student Code, however, the college may advise off-campus authorities of the existence of the Student Code and of how such matters will be handled internally within the college community. The college will cooperate fully with the law enforcement and other agencies in the enforcement of criminal law on campus and in the conditions imposed by criminal courts for the rehabilitation of student violators.

ARTICLE III: JUDICIAL PROCEDURES (Due Process)

1. Any member of the college community may file charges against any student for misconduct. Incident Report forms may be completed online at www.schoolcraft.edu/sccares and are routed automatically to the vice president of student services and Campus Security Police. Any charge should be submitted as soon as possible after the event takes place.
2. The vice president of student services will designate an administrator to conduct an investigation to determine if the charges should be disposed of administratively by mutual consent of the parties involved or by the formal conduct hearing process. Such disposition will be final and there will be no subsequent proceedings. If the charges cannot be disposed of by mutual consent, the designated administra-

tor will refer the matter to the Student Conduct and Discipline Committee or the accused student may request a hearing.

3. All charges will be presented to the accused student in written form. A time will be set for a hearing, no less than five nor more than fifteen calendar days after the student has been notified, barring exigent circumstance. Maximum time limits for scheduling of hearings may be extended for cause at the discretion of the chairperson of the Student Conduct and Discipline Committee.
4. If the accused student does not respond to the written notice of the hearing and does not appear, the hearing will take place as scheduled. If the Student Conduct and Discipline Committee finds that the accused student violated the Student Code, sanctions may be imposed.
5. Hearings will be conducted by the Student Conduct and Discipline Committee according to the following guidelines:
 - a. Hearings will be conducted in private. Admission of any person to the hearing will be at the discretion of the chairperson of the committee.
 - b. In hearings involving more than one accused student, the chairperson will conduct hearings concerning each student separately.
 - c. The complainant and the accused have the right to be assisted by any advisor they choose, at their own expense. The advisor may be an attorney. The complainant and/or the accused is responsible for presenting his or her own case. Therefore, advisors are not permitted to speak or to participate directly in any hearing before the Student Conduct and Discipline Committee.
 - d. The complainant, the accused, and the Student Conduct and Discipline Committee may present witnesses subject to questioning by the Student Conduct Committee. Witnesses who are not present or available may submit statements instead.
 - e. Pertinent records, exhibits, and written statements may be accepted as evidence for consideration by the Student Conduct and Discipline Committee at the discretion of the chairperson.
 - f. After the hearing, the committee will determine (by majority vote) whether the student has violated the relevant section(s) of the Student Code that the student is charged with violating.
 - g. The Student Conduct and Discipline Committee's decision will be made on the basis of whether it is more likely than not that the accused student violated the Student Code.
6. There will be a record, such as an electronic recording, of all hearings before the Student Conduct and Discipline Committee. The recording will be the property of the college.
7. Except in the case of a student charged with failing to obey the summons of the Student Conduct and Discipline Committee or a college official, no student may be found to have violated the Student Code solely because the student failed to appear before the committee.

Student Conduct and Discipline records are maintained or expunged after seven years, except in the case of suspensions and expulsions, which remain a part of the vice president of student services' student discipline files.

ARTICLE IV: SANCTIONS

The following sanctions may be imposed upon any student found to have violated the Student Code.

1. *Written Warning*—A notice in writing to the student that the student is violating or has violated institutional regulations.
2. *Probation*—A designated period of time that includes the probability of more severe disciplinary sanctions if the student is found to be violating any institutional regulation(s) during the probationary period.
3. *Loss of Privileges/Restriction*—Denial of specified privilege or access for a designated period of time.
4. *Restitution*—Compensation for loss, damage, or injury. This may take the form of appropriate service and/or monetary or material replacement.
5. *Discretionary Sanctions*—Work assignments, service to the college or community, or other related discretionary assignments. (Such assignments must have the prior approval of the vice president of student services.)
6. *Suspension*—Separation of the student from the college for a definite period of time after which the student is eligible to return. Conditions for readmission may be specified.
7. *Removal from program of study*.
8. *Expulsion*—Permanent separation of the student from the college.

More than one of the sanctions listed above may be imposed for any single violation.

Emergency Sanctions

The vice president of student services, or designee, may authorize immediate interim suspension of any student when the circumstances warrant this action, such as:

- To ensure the safety and wellbeing of members of the college community or preservation of college property; or
- To ensure the student's own physical or emotional safety and wellbeing; or
- If the student poses an ongoing threat of disruption of, or interference with, the normal operations of the college.

The suspension will remain in effect pending the outcome of the Student Conduct and Discipline process. Any student who is being immediately banned from campus will be notified by the appropriate authorities, and will receive written notification of this sanction at his/her email address and address of record.

Interim suspension will take effect immediately upon the direction of the vice president of student services, or designee, and last for no more than ten (10) days. The ten-day (10-day) period may be extended for good cause by the vice president of student services or by agreement with the student.

During the interim suspension, the student will be denied access to the campus (including classes) and/or all other college activities or privileges for which the student might otherwise be eligible, as the vice president of student services, or designee, may determine to be appropriate. The interim suspension does not replace the regular discipline process, which shall proceed on the normal schedule, up to and through the completion of the Student Conduct and Discipline Hearing, if required.

Sanctions for Student Organizations

Although not all acts of individual group members can or should be attributable to the group, any group or collection of its members acting in concert should be held responsible for its actions. In determining whether a group may be held collectively responsible for the individual actions of its members, all of the factors and circumstances surrounding the specific incident will be reviewed and evaluated. As a guiding principle, groups will be held responsible for the acts of their members when those acts grow out of, or are in any way related to a practice or pattern of behaviors established or encouraged by the group. Isolated violations of individuals may not be chargeable to the group, but evidence of group conduct exists where:

1. Members of the group act in concert to violate college standards of conduct.
2. A violation arises out of a group-sponsored, financed, or endorsed event.
3. A group leader (s) has knowledge of the incident before it occurs and fails to prevent or report the act(s).
4. The incident occurs on the premises owned or operated by the group.
5. A pattern of individual violations is found to exist.
6. Members of a group act in concert, or the organization provides the impetus or incentive for the violation.

The following sanctions may be imposed upon groups or organizations:

1. Those sanctions listed above in Sanctions, 1–8.
2. Deactivation—Loss of all privileges, including college recognition for a specified period of time.

In each case in which the Student Conduct Committee determines that a student has violated the Student Code, the sanction will be determined and imposed by the committee. Following the hearing, the committee chairperson will within ten (10) calendar days advise the accused in writing of its determination and of the sanctions imposed, if any.

ARTICLE V: APPEAL PROCESS

1. The accused, having been found in violation of any portion of the Student Code, may appeal the decision/sanctions imposed by the Student Conduct administrator and/or committee under the following circumstances:
 - a. There has been an error in due process.
 - b. New evidence that was not available at the time of the hearing has come to light.
 - c. Sanctions are inconsistent with institutional precedent.

2. The appeal must be submitted in writing to the vice president of student services within ten (10) days from the date that the accused is notified by the chairperson of the Student Conduct and Discipline Committee regarding the committee decision or sanctions.
3. The vice president of student services and the appeals board will review all pertinent data regarding the appeal and will render a written decision within ten (10) calendar days or as soon as practicable. This decision is final.

ARTICLE VI: SEX OFFENDER NOTIFICATION AND REGISTRATION

The following language satisfies the notice required to the college community regarding registered sex offenders:

In accordance with the “Campus Sex Crimes Prevention Act” of 2000, which amends the Jacob Wetterling Crimes against Children and Sexually Violent Offender Registration Act, the Jeanne Clery Act, and the Family Educational Rights and Privacy Act of 1974, Schoolcraft College is providing a link to the Michigan State Police Sex Offender Registry. This act requires institutions of higher education to issue a statement advising the campus community where law enforcement information provided by a state concerning registered sex offenders may be obtained. It also requires sex offenders already required to register in a state to provide notice of each institution of higher education in that state at which the person is employed, carries a vocation, or is a student. In the State of Michigan, convicted sex offenders must register with the Sex Offender and Crimes Against Minors Registry maintained by the State Police.

The Sex Offenders Registration Act, MCL 28.721 et seq., directs the Michigan State Police to develop and maintain a public registry and provides guidelines on the type of offender information available to the public. The registration requirements of the Sex Offenders Registration Act are intended to provide the people of this state with an appropriate, comprehensive, and effective means to monitor those persons who pose a potential danger.

In accordance with the Wetterling Act, Megan’s Law, and the Campus Sex Crimes Prevention Act of 2000, it is now mandatory that all registered sex offenders report to the law enforcement agency having jurisdiction in which the institution of higher learning is located. The Michigan Public Sex Offenders Registry can be accessed at www.mipsor.state.mi.us/

Registered sex offenders who are members of the college community, upon enrollment at the college and/or anytime thereafter while they remain a student at the college, are obligated to notify Campus Security Police that they have registered at Schoolcraft College and are required to register with the Michigan Public Sex Offenders Registry. Failure to notify the college is deemed to be a violation of the Student Code of Conduct, and subjects those students to all available college Judicial Processes and the Sanctions set forth. Tier 3, Tier 2, Tier 1 and multiple offenses individuals are required to meet with the director of student relations and Campus Security Police annually, as requested by appointment.

Schoolcraft College Personnel

ADMINISTRATORS

Bonner, April 1981

Director of ERP Management and Maintenance
AAS Schoolcraft College
BS Madonna University
MS Walsh College

Borton, Jeffrey 1990

Executive Director of Information Technology Management
AAS Schoolcraft College
BS Lawrence Technological University

Cerny, Glenn R. 2010

Vice President and Chief Financial Officer
BBA University of Michigan
MBA Eastern Michigan University

Champagne, Gerald M. 2013

Associate Dean of Public Safety Programs
AAS Schoolcraft College
BS/MLS Eastern Michigan University

Cicchelli, Cynthia 2001

Director of Operations, Curriculum and Assessment
BA Concordia University
MEd Wayne State University

Daiek, Deborah B. 1998

Associate Dean of Learning Support Services
BA and MEd Western Michigan University
PhD Wayne State University

Denny, Christopher C. 2012

Director of Information Technology Support
AAS Grand Rapids Community College
BS University of Phoenix
MA Central Michigan University

Fox, Sidney I. 2006

Director of Athletics
BS and MEd Wayne State University

Genig, Dennis K. 2013

Director of Special Projects
AA Concordia Junior College
BA Concordia University
MA and EdD University of Michigan

Gooden, Samuel 1995

Director of Media Services
AS Schoolcraft College

Green, Stephen J. 2007

Director of Building Systems and Maintenance
AS Henry Ford Community College

Hagen, Cheryl M. 2001

Vice President of Student Services
BA Valparaiso University
MA Eastern Michigan University

Hawkins, Cheryl D. 1996

Dean of Liberal Arts and Sciences
BS Eastern Michigan University
MS Wayne State University

Heator, Martin G. 2001

Associate Dean of Enrollment Management
BS and MA Eastern Michigan University

Heckard, Bonnie L. 2011

Associate Dean of College Centers
AAS Ferris State University
BBA Saginaw Valley State University
MBE and EdD Central Michigan University

Holman, Cheri 1997

Associate Dean of Distance Learning
AAPS Schoolcraft College
BBA Cleary University
MSA Central Michigan University

Holtzman, Joseph 2012

Director of College Bookstore
BA Carleton College
MA University of Michigan

Jeffress, Conway A. 1982

President
BA Washington and Jefferson College
MEd and PhD University of Pittsburgh

Jones, Amy M. 1994

Associate Dean of Occupational Programs
AA Schoolcraft College
BBA Walsh College
MBA Wayne State University

Kattuah-Snyder, Laurie 2006

Associate Dean of Advising and Partnerships
BS Western Michigan University
MA University of Michigan

Kaufman, Steven 2011

Campus Security Police Chief
AA Madonna University
BA and MS Concordia University

Koenigsknecht, Cindy 2003

Executive Director of Human Resources
BA Albion College
MA Central Michigan University
MA and PhD Northcentral University

Kohler, Elizabeth E. 2013

Director of Development
BA Michigan State University

Koss, Michelle T. 2011

Associate Dean of Counseling and Student Support
BS and MA Oakland University

Krause, Louis K. 2011

Director of Student Financial Aid Operations
AA Schoolcraft College
BS and MA Eastern Michigan University

Lamb, Jon W. 2012

Director of Accounting
BS Central Michigan University
Certified Public Accountant

Leadley, Jr., Robert J. 2011

Dean of Occupational Programs and Economic Development
BS Michigan State University
MBA Saint Joseph's University
MS University of Wisconsin
PhD University of Kansas

Leavens, Brenda K. 1999

Director of Student Financial Services
AAS Schoolcraft College
BBA Cleary University

Lilley, Jeffrey 1987

Director of Finance
BS Lawrence Technological University

McCardell, Catherine 2002

Director of Registration Services
AB and BBA Cleary University

Mosley, Regina 2005

Executive Director of Student Financial Services
BS University of Michigan-Flint
MS Central Michigan University

Petty, Leslie I. 2010

Associate Dean of Continuing Education and Professional Development
BA Clark University
MEd and EdD Harvard University

Piotrowski, John 1992

Director of Programming and Software Applications
AAS Schoolcraft College

Polkowski, James 1986

Executive Director of Business Services and Risk Management
BS Wayne State University

Ruggirello, Frank 2013

Director of Community and Media Relations
BA Michigan State University

Ryan, James 2008

Executive Director of Institutional Advancement
BS and MS Eastern Michigan University
EdD Nova Southeastern University

Sather, Susan A. 1986

Director of Payroll/Payables
AAS Schoolcraft College

Savage, Thomas S. 1985

Director of Food Service
AA Henry Ford Community College
BA Michigan State University

Schaffrath, Rochelle R. 1980

Director of Student Relations
AAS Schoolcraft College
BBA Cleary University

Shaughnessy-Smith, Jean 1989

Director of Children's Center
AAS Schoolcraft College
BA Spring Arbor University

Stando, Michelle L. 2008

Director of Organizational Development Research
BBA University of Michigan

Stirton, Edward R. 2001

Director of Business Intelligence
BA University of Michigan-Dearborn
MA New Mexico State University

Stover, Stacey M. 2002

Director of Admissions and Student Engagement
BA Michigan State University
MEd University of South Carolina

Stowell, Todd A. 1996

Director of Student Activities
AA Schoolcraft College
BBA Eastern Michigan University
MA Michigan State University

Vendittelli, Deborah S. 1989

Associate Dean of Nursing
AA Lake Superior College
BSN Lake Superior State College
MSN University of Texas

Vu, Tho 2012

Director of Business Process Quality Management
BS Michigan Technological University
MSA Central Michigan University

Wavrek, Diane M. 1967

Director of Special Projects
AAS Schoolcraft College

Weinkauf, Richard J. 2007

Vice President of Instruction
AAS Paul Smith's College
AAS Schoolcraft College
BS State University of New York
BS Syracuse University
MS University of Michigan

Wilson, Matthew W. 2001

Director of Purchasing
BA and MBA Michigan State University

Wilson-Fennell, Nicole L. 2002

Registrar
BA Eastern Michigan University
MA University of Michigan

Wright, John E. 2010

Executive Director of Facilities Operations
AS Schoolcraft College
Licensed Builder

FULL-TIME FACULTY

Abbas, Mohammed 1991

Professor, Biology
BS Baghdad University
MS Purdue University
PhD Wayne State University

Addi, Omar, 1990

Professor, English
BA University of Mohamed V
MA State University of New York

Arsznov, Janet M. 1996

Professor, Mathematics
BS and MA University of Michigan
MA Eastern Michigan University

Austin, Holly 2004

Associate Professor, Nursing
BS Northern Michigan University
MSN Eastern Michigan University

Baker, Stuart C. 1973

Counselor, Associate Professor
AA Henry Ford Community College
BBA Western Michigan University
MA University of Michigan

Baron, Timothy S. 2013

Instructor, Computer Information Systems
BS Ohio Northern University

Bearden, Lois J. 1990

Professor, Mathematics
BA and MA University of Michigan

Berg, Steven L. 2000

Associate Professor, English/History
BA, MA, PhD Michigan State University

Brendel, Heidi 2012

Instructor, Nursing
AAS and ALA Oakland Community College
BSN and MSN Oakland University

Burrell, Graham C. 1975

Librarian, Professor
BA and MLS University of Michigan

Butkevich, Nickolas 1995

Professor, Biology
BS and MS Eastern Michigan University

Campbell, Tamara 1995

Professor, Nursing
BSN Mercy College of Detroit
MSN University of Michigan

Case, Colleen M. 1996

Professor, Computer Graphics Technology
BS University of Wisconsin, LaCrosse
MLS Eastern Michigan University

Chaudhery, Sumita 1968

Professor, English
BA and MA Howard University
PhD University of Michigan

Cook, Steven J. 2009

Assistant Professor, Biology
BS and MS Central Michigan University

Courie, John 2007

Assistant Professor, Criminal Justice
BS and MS Wayne State University
JD University of Detroit-Mercy

Cronin, Brenda 2011

Instructor, Nursing
BSN and MSN Eastern Michigan University

Decker, Joseph 1991

Professor, Culinary Arts
Certified Master Pastry Chef

Dickson, Paul M. 2001

Associate Professor, Chemistry
BS University of Michigan-Dearborn
PhD Wayne State University

Ditouras, Helen 2006

Assistant Professor, English
BA University of Windsor
MA Wayne State University

Dolgin, Steven 1990

Professor, English
AA Oakton Community College
BA and MA University of Illinois-Springfield
CAS Northern Illinois University
DA Illinois State University

Donahee-Rader, Mary 2011

Instructor, Medical Assisting
AGS Schoolcraft College
BBA Cleary University
Certified Medical Assistant

Ellis, Timothy 1999

Associate Professor, Computer Information Systems
BBA Eastern Michigan University

Feldbauer, Janice M. 2008

Professor, Business
BS and MBA University of Detroit-Mercy

Ferman, Catherine 1992

Professor, CAD/Drafting
BS, GMI, Engineering and Management Institute
MS University of Michigan
Professional Engineer

Flynn-Hahn, Diane E. 1996

Associate Professor, Child and Family Services
BS and MA Eastern Michigan University

Fruth, Kristin 2011

Instructor, Biology
BS and MS University of Toledo

Gabriel, Jeffrey M. 1987

Professor, Culinary Arts
AOS Culinary Institute of America
Certified Master Chef

Galperin, Frederick D. 1966

Professor, Economics
AB University of Michigan
MA and EdS Eastern Michigan University

Gawronski, Kevin P. 1982

Professor, Culinary Arts
AAS Schoolcraft College
Certified Master Chef

Grace, Elizabeth A. 2000

Associate Professor, Child and Family Services
AAS Schoolcraft College
BGS University of Michigan
MEd Wayne State University

Gray, Stacey 2007

Assistant Professor, Biology
BS University of Michigan-Dearborn
MS Eastern Michigan University

Haight, Marcus 2003

Associate Professor, Culinary Arts
Certificate Culinary Arts Schoolcraft College
Certified Executive Chef
Certified Executive Pastry Chef

Harris, Mark C. 1997

Professor, English
BA Michigan State University
MA University of South Carolina

Hartman, James R. 1987

Professor, Theatre, Communication Arts
BS and MEd University of Cincinnati

Holody, Paul 2002

Associate Professor, Physics
BS University of Michigan
PhD Michigan State University

Howie, Cedric 1991

Professor, Economics
BA University of North Carolina
MS Murray State University

Hugelier, Daniel 1991

Professor, Culinary Arts
Certified Master Chef

Huston, Mark R. 2006

Assistant Professor, Philosophy
BS Central Michigan University
PhD Wayne State University

Jackson, Lisa R. 2009

Assistant Professor, Psychology
BS Bowie State University
MA and PhD University of Michigan

Jankoviak Anderson, Katherine 2001

Associate Professor, Mathematics
BS Northern Michigan University
MS Michigan State University
BA and MA Wayne State University

- Johnson, Rodney 1986**
Associate Professor, Welding
Certificate Schoolcraft College
Certified Welding Educator
Certified Associate Welding Inspector
Residential Builder License
Certificate Welding Fabrication
Certificate Applied Physical Metallurgy
Metallurgical Co-Operative Experience Completion
Certificate Hazardous Materials Management
- Kavanaugh, Edward A. 1982**
Professor, Mathematics
BS and MA University of Michigan
- Kerr, Sandra J. 1994**
Professor, Mathematics
BSE University of Michigan
MA Wayne State University
- Keyes, Gene M. 2012**
Instructor, Manufacturing
Certified Manufacturing Engineer
- Kirkpatrick, Kent 1992**
Professor, Political Science
BS and MA Eastern Michigan University
- Kramer, James R. 1986**
Professor, Electronic Technology
BA, BS and MS Eastern Michigan University
- Krystyniak, Karen 2000**
Counselor, Assistant Professor
BS Madonna University
MA Eastern Michigan University
- LaJoy, Mary B. 2001**
Counselor, Associate Professor
BS Western Michigan University
MA Eastern Michigan University
- Lavis, Jerome M. 2010**
Instructor, Chemistry
BS Ecole Supérieure de Physique et Chimie
MS University of Paris VI
PhD Michigan State University
- Lazarski, Andrea L. 2006**
Assistant Professor, Mathematics
BS University of Michigan
MA Wayne State University
- Loving, Shawn 2008**
Assistant Professor, Culinary Arts
AAS Schoolcraft College
Certified Executive Chef
- Maheshwari, Archana 2002**
Associate Professor, English
BA and MA Osmania University
MA Wayne State University
- McCoy, Michael D. 2009**
Assistant Professor, Mathematics
BS Western Michigan University
MS University of Nebraska-Lincoln
- McNutt, Caroline H. 2000**
Associate Professor, Biology
BS and MS University of Western Ontario
- Mehall, Michael J. 1998**
Professor, Computer Graphics Technology
BFA and MA Wayne State University
- Mellnick, Gerard J. 2007**
Assistant Professor, Business
AC Henry Ford Community College
BBA University of Michigan-Dearborn
MBA Wayne State University
Certified Public Accountant
- Mingela, Audrone M. 2000**
Associate Professor, Mathematics
BS University of Michigan
MA Eastern Michigan University
- Moore, Josselyn 1995**
Professor, Anthropology,
Archaeology, Sociology
BA Washington University
MA Hunter College City
University of New York
- Nag, Prantosh 1969**
Professor, Economics
BA Scottish Church College
Calcutta University, India
MS and PhD University of Minnesota
- Nesbit, P. Diane 1985**
Librarian, Professor
AA Michigan Christian College
BA Marygrove College
MLS Wayne State University
- Nissen, James C. 1996**
Professor, Humanities
BM, MM, and DMA University of Michigan
- Nofz, Andrea L. 1999**
Associate Professor, Spanish
BA and MA Michigan State University
- O'Connell, Diane 1990**
Professor, Geography
BA College of William and Mary
MS Eastern Michigan University
- O'Connor, Thomas A. 1990**
Professor, Biology
BA and MS Purdue University
PhD University of Washington
- Olson, Sarah M. 2000**
Associate Professor, Art
BAEd, BFA, MA University of Michigan
- Ontko, Susan M. 2006**
Associate Professor, Business
BA General Motors Institute
MBA University of Michigan
- Orick, Michael 1993**
Professor, Biology
BA University of Michigan-Dearborn
MS Eastern Michigan University
- Palmer, Nancy 1995**
Professor, Nursing
BSN Mercy College of Detroit
MSN Wayne State University
- Pickett, Kenneth M. 2006**
Associate Professor, Metallurgy
Certified Welding Educator
Certified Welding Inspector
AAS Schoolcraft College
BS Madonna University
MSIT Eastern Michigan University
- Pilgrim, Colleen C. 2000**
Associate Professor, Psychology
BS Michigan State University
MA and PhD Wayne State University
- Polcyn, Brian D. 1997**
Associate Professor, Culinary Arts
Certified Executive Chef
- Polot, Barton L. 2001**
Associate Professor, Music
BM, MM and PhD University of Michigan
- Pricer, Wayne F. 1994**
Librarian, Professor
ALA Oakland Community College
BA Madonna University
MSLS Wayne State University
- Ramey, La Vonda G. 1985**
Professor, Accounting
BBA and MBA University of Michigan
Certified Public Accountant
- Randall, Michelle F. 2001**
Associate Professor, Accounting
BBA University of Michigan
MBA Wayne State University
Certified Public Accountant
- Regner, Deborah A. 2006**
Assistant Professor, Psychology
BS and MS Eastern Michigan University
- Rexius, James E. 1981**
Professor, Geology
BA University of Michigan
MS Eastern Michigan University
- Richards, Christopher M. 2001**
Counselor, Associate Professor
BS and MA Eastern Michigan University
- Rybicka, Elzbieta T. 2006**
Associate Professor, English
BA and MA Jagiellonian University
- Sager, Todd S. 2009**
Assistant Professor, Sound Recording Technology
BM and MM University of Michigan
- Schaumann, Karen E. 2007**
Assistant Professor, Sociology
BS and MA Eastern Michigan University
- Schell, Denise L. 2012**
Counselor, Instructor
AGS Macomb Community College
BA and MA Oakland University
MA Wayne State University
- Scheller, Jody E. 1993**
Professor, Health Information Technology
AS, BS and MS Mercy College of Detroit
- Schlick, William E. 1995**
Professor, Computer Information Systems/
Electronic Technology
AAS Schoolcraft College
BEE Wayne State University
Microsoft Certified Systems Engineer
Certified Bio-Medical Electronic Technologist
- Schwartz, Randy K. 1984**
Professor, Mathematics
BA Dartmouth College
MA University of Michigan
- Sheppard, Cynthia M. 2002**
Associate Professor, Nursing
BSN Mercy College of Detroit
MSN Madonna University
- Simmons-Short, Ida C. 1990**
Professor, English
BA and MA University of Michigan
- Smith, Laurie 2012**
Instructor, Nursing
BA Michigan State University
BSN Wayne State University
MSN and MPA Eastern Michigan University
- Snyder, Cheryl A. 1998**
Professor, Chemistry
BA SUNY at Plattsburgh New York
MS Purdue University

Stetson, Bradley D. 2006
Assistant Professor, Mathematics
 BS University of Michigan
 MS University of Florida

Suess Kaushik, Anita B. 2006
Assistant Professor, French/German
 BA Eidgenossische Dolmetscherschule
 MA University of Paris
 MA and PhD University of Cincinnati

Taylor, Bonnita K. 2002
Associate Professor, Biology
 BS Michigan State University
 MS Eastern Michigan University

Taylor, JuJuan C. 1989
Professor, Communication Arts
 BA Mercy College
 MA University of Detroit
 PhD Michigan State University

Thomson, Alexander 1999
Associate Professor, Political Science/History
 BA, MA and PhD Wayne State University

Waldyke, Michael J. 2001
Associate Professor, Chemistry
 BS Calvin College
 MS University of California, Berkeley

Wood, Christopher J. 2006
Associate Professor, Physics
 BS and MS University of Michigan
 MS Eastern Michigan University

Worthington, Thomas P. 2012
Instructor, Emergency Medical Technology
 AAS Baker College
 EMS Instructor Coordinator

Wroble, Stephen A. 1991
Professor, Art, Computer Graphics Technology
 BFA Michigan State University
 MA Wayne State University

Zaccone, Lisa A. 2000
Associate Professor, Mathematics
 AAS Delta College
 BS Michigan Technological University
 MS Capella University
 MA Eastern Michigan University
 Professional Engineer

SUPPORT STAFF

Adams, Lisa 2002
Primary Caregiver

Adams, Susan 1991
Help Support Specialist

Agostinelli, Janet 2008
Programmer/Analyst

Anchor, Elizabeth 1997
Marketing Associate

Anderson, III, Bruce 1999
Electronic Technician

Arambasich, Denise 2003
Assistant Director of Financial Aid-Direct Loan Program

Authier, Adam 2013
Instructional Designer

Barney, Cynthia 2000
Financial Services Office Assistant

Bazylewicz, Christina 2002
Supervisor, Duplication Design Center

Belknap, Jeffery 2010
Computer Technician

Bellino, Pamela 2000
Senior Buyer

Berendt, Amy 1989
Compensation Specialist

Bialo, Michele 2006
Program Manager

Bloedel, Mary 2004
Administrative Assistant III

Bona, Roberta 1995
Registration Associate

Boopalan, Subashini 2012
.NET/PHP Programmer/Analyst

Boyle, Charlene 1992
Accounts Payable Associate

Brdak, III, Raymond 2010
Campus Security Police Officer

Brown, Bernice 1990
Curriculum and Assessment Associate

Brown, Catherine 2001
Senior Administrative Assistant I

Brown, David 1997
Media Technician

Brown, Paul 1983
General Maintenance

Burtka, Rachel 2005
Financial Aid Client Services Coordinator

Bushaw, Lisa 2005
Coordinator of Admissions

Butler, Gloria 2008
Coordinator, Testing Center

Cardinal, Kimberly 2009
Accounts Payable Associate

Carney, Mary 2011
Utility II

Chatham, Robert 2001
Campus Security Police Officer

Cheema, Lakhbir 1996
Culinary Sanitarian

Cichonski, Carol 1995
Administrative Assistant III

Colflesh, Melissa 2001
Electronic Technician

Colling, Gregory 1985
Campus Security Police Officer

Cook, Aaron 2004
Assistant Director-Food Service/Executive Chef

Cook, Jennifer 1997
PE Attendant

Coutts, Roger 1995
Network Support Specialist

Cowles, Angela 2000
Administrative Assistant III

Cox, Kathleen 1999
Coordinator, Student Employment

Crawford, Cali 2012
Coordinator-Athletic Operations

CyruInnik, Susan 2010
Benefits Manager

Czajka, Amber 2013
Account Manager

Czeszewski, Scott 2007
Computer Technician

Dani, Deborah 1992
Human Resources Technician

Deane, Jann 1998
PTAC Coordinator

Dillard, Shauna 2010
Administrative Assistant III

Dixon, Shirley 1989
Research Coordinator

Downing, Carrie 2010
Financial Aid Associate

Duka, Kenneth 1986
Utility II

Duncan, Jr., Timothy 1997
Networking and Software Specialist

Durling, Brenda 1998
VisTaTech Conference Center Manager

Eleson, Belinda 1979
College Receptionist

Elya, Leslie 2012
Curriculum Technologist

Engstrom, Mark 2012
Campus Security Police Lieutenant

Erisman, Bradley 1995
Bookstore Operations Associate

Evans, Pendency 2006
Administrative Assistant III

Everhart, Wayne 2011
Utility II

Favor, Erin 2013
Bookstore Assistant C

Fenton, Linda 2008
Administrative Assistant II

Fichtenberg, Christa 2002
Coordinator of New Student Orientation

Ford, Rachel 2006
Learning Options Associate

Ford, Jr., Thomas, 2000
Technical Support Specialist

Fournier, Jeffrey 2001
Media Technician

Fournier, Kimberley 1998
Learning Resources Assistant

Fournier, Ronald 1998
Skilled Maintenance, HVAC

Fox, William 1986
Computer Technician

Frader, Sheri 2006
Senior Administrative Assistant I

Frentzos, Karla 1993
Executive Assistant

Frost, Laurin 2013
Document and Layout Associate

Fuher, Michele 2012
Programming Coordinator

Fuller, Barbara 2011

Utility II

Fulton, Gary 2003

Coordinator, Academic Computing Labs

Gaynier, Michelle 2007

Coordinator, College Communications

Geinzer, Christine 2000

Project Manager

George, Kimberly 2006

Payroll Associate

Gernert, Kerry 2001

Interior Design Coordinator

Gillow, Janine 1998

Accounting and Budget Manager

Glowinski, Kellie 2011

Purchasing Assistant

Gniewek, Donna 1999

Senior Graphic Designer

Goodrich, Stephen 2002

Media Technician

Gosur, Maria 2011

Web/Application Developer

Greenshields, Thea 2000

Senior Administrative Assistant I

Greifenberg, Jason 1997

Technical Support Specialist

Gumina, Sara 1996

SBTDC Technician

Gumm, Debra 2007

Registration Associate

Hamm, April 1995

Senior Buyer

Hanley, Susan 2011

Applications Programmer

Harrison, Becky 1988

Utility II

Healy, Jana 2009

Office Assistant, Counseling

Henry, Kurt 1994

Utility II

Heusner, Scott 1997

Lead Programmer/Analyst

Hinzman, Sylvia 1988

Public Safety Education Associate

Hochberg, Ellen 1998

Senior Graphic Designer

Holtschneider, Donna 1996

Primary Caregiver

Hooper, Mary 2001

Primary Caregiver

Howell, Bradley 1999

Skilled Maintenance

Huber, Anne 2012

Curriculum Designer

Hudson, April 2004

Utility I

Hudson, Jr., Robert 1980

Utility I Leader

Hunt, David 2011

Utility II

Isabell, Agnes 1995

Executive Assistant

Jackson, Andre 2010

Utility II

Jarvis, Sandy 2005

Payroll Associate

Jones, David 1995

Campus Security Police Officer

Jones, Terasa 1991

Office Assistant, CEPD

Kalnasy, Angela 2009

Primary Caregiver

Kelley, Maureen 2007

Lead Account Manager

Kendall-Williams, Michele 2007

Record Retention/Archive Specialist

King, David 1980

Utility II

Kiurski, Catherine 1976

Executive Assistant

Klotz, Holly 2002

Operations Manager

Komiensky, Adam 2006

Utility II

Kovacs, Chris 1991

Campus Security Police Sergeant

Kramer, Phyllis 2002

CEPD Technician

Kudlawiec, John 1994

Storekeeper Leader

LaBenne, Amy 2011

Financial Aid Associate

LaForest, Elizabeth 2011

Facilities Management Associate

Lamphiear, Allison 2009

Senior Academic Advisor

Landau, Brent 2006

Senior Academic Advisor

Larente, Janice 2006

Primary Caregiver

Laster, James 2011

Skilled Maintenance

Latarski, Daniel 2007

Media Technician

LaVeque, II, Randolph 2010

Utility II

Law, Darlene 2010

Cashier III

Lightfoot, Russell 1977

Utility I Group Leader

Logan, Caroline 2002

Scholarship Program Associate

Losey, Kenneth 2010

Campus Security Police Officer

Losey, Kevin 1994

General Maintenance

Loudermilk, Jason 2009

Security Systems Specialist

Lounsbery, Richard 1989

Campus Security Police Officer

Lowe, Claudette 1998

Administrative Coordinator

Ludwiczak, Kimberly 2003

Accounting Manager

Lynch, Marjorie 1973

Special Events and Student Scholarships Coordinator

Machniak, Elizabeth 1994

Administrative Assistant II

Mackinder, Jennifer 2013

Development Specialist

Maisano, Joseph 1999

Networking and Software Specialist

Majewski, Krystal 2013

Market Research Analyst

Malinowski, Karen 1995

Continuing Education Associate

Manning, Gregory 1978

Skilled Maintenance

Mansfield, James 2002

Utility I

Margherini, Randy 2004

Utility II

Martin, Colleen 2008

Senior Academic Advisor

Mason, Denise 1992

Utility II

Matusik, Sherrine 1983

Technical Support Coordinator

Mayes, Matthew 2012

Campus Security Police Officer

McCardell, Timothy 2001

Utility II Leader/Repair Technician

McCollister, Donna 2004

Utility II

McDermott, Holly 2005

Service Supervisor

McDonald, Cheryl 1990

Instructional Operations Specialist

McVittie, Donald 1979

Technology Lab Coordinator

Mertens, Diane 2002

Administrative Assistant II

Milewski, Danny 1977

Bookstore Assistant A

Milewski, Robert 1986

Bookstore Assistant B

Miller, Donald 2005

Utility II

Miller, Sandra 2008

Finance and Business Services Coordinator

Miller, Tracy 2006

Assistant Registrar

Miner, Christopher 2009

Utility II Leader/Repair Technician

Misiak, Christopher 1986

Culinary Arts Program Coordinator

Modica, Jeffrey 2004

Skilled Maintenance, HVAC

Mog, Patrick 1983

Skilled Maintenance, HVAC

Moloney, Steven 1996

Multimedia Coordinator

Moorodian, Paul 2008

Utility I

Moss, Carl 1996
Utility II

Noeske, Natalie 2008
Human Resources Manager

Novak, Frank 2013
Promotions Coordinator

Nowacki, Darryl 1987
Networking and Software Specialist

Oates, Todd 2011
Skilled Maintenance

O'Connor, Debra 1996
Lead Help Support Specialist

Oliver, Sheba 2007
Graduation/Records Coordinator

Patow, Craig 2005
Coordinator, Academic Computing Labs

Patterson, Elaine 2007
Laboratory Technician

Paxton-Keehner, Pamala 2003
Veteran's Services Coordinator

Perez, Patricia 1973
Senior Administrative Assistant I

Perugia, Colette 1995
Project Manager

Peterson, Ronald 2012
Textbook Buyer

Piasentin, Gerard 1997
Project Engineer

Psilidis, Kelly 2008
Admission and CRM Representative

Puhlman, Sharol 2004
Administrative Assistant II

Ragan, Sr., Michael 1976
Custodial and Operations Leader

Rapitis, Markos 2010
Knowledge Management Coordinator

Rauhut Robak, Linda 2011
Data Mining Analyst

Rice, Ruth 2000
Utility II

Richards, Christina 2004
Utility II

Riemke, Kimberly 2006
Media Technician

Riopelle, Lisa 2007
Financial Aid Coordinator

Roberts, Lynne 2010
OE/OE Lab and Testing Administrator

Rose-Laird, Giselle 2010
Administrative Assistant III

Rodriguez, Robert 2007
Health Professions Simulation Lab Technician

Rourk, Jr., Thomas 2003
Utility II

Rybarczyk, Meghan 2010
PTAC Technician

Rydzewski, David 2000
Shipping and Receiving Operations Supervisor

Sarb, Daniel 2011
Utility II

Sauder, Janel 1999
Sous Chef

Schopieray, Kristen 2008
CEPD Technician

Schultz, Robert 2007
Media Technician

Seewald, Mathias 2007
General Maintenance

Shelley, Rory 2011
Utility II

Siegel, Marie 1999
Health Professions Simulation Lab Coordinator

Sinitski, Carrie 2009
Customer Service Associate

Skaggs, B. Ione 2001
Document and Layout Associate

Skiera, Katie 2006
Employment Coordinator

Smereka, Corinne 2010
Contracted Training Coordinator

Smith, Emily 1997
Registration Associate

Smith, Ian 2011
Utility II

Smith, Jonathan 1998
Account Management Associate

Smith, Kenneth 1987
Storekeeper

Spaniak, Ginny 2007
Records Office Assistant

Staknis, Barbara 1996
Administrative Assistant III

Stanton, Fred 2007
Public Safety Education Coordinator

Stapula, Jeanne 1999
Campus Security Police Associate

Storm, Nicole 2011
Administrative Assistant III

Stull, Corey 2012
Utility I

Sullivan, Patrick 1988
PE Attendant

Swisher, Amy 2010
Registration Associate

Tagarel, Lyndsay 2003
Bookstore Purchasing Associate

Taylor, Patsy 2002
Primary Caregiver

Tellitocci, Joyce 1997
Media Coordinator

Theakston, Jennifer 2002
Administrative Assistant III

Thompson, Kevin 2002
Coordinator, Academic Computing Labs

Thomson, Tammy 1998
SBTDC Coordinator

Tisdale, Jennifer 2012
PTAC Coordinator

Tremblay, Lou-Ann 2002
Utility II

VanHeusden, Valerie 2007
Administrative Assistant III

VanLue, Jr., Robert 1997
Programmer/Operator

Vert, Penelope 1996
Purchasing Assistant

Wagers, Mark 1998
Utility II

Wallen, Kerri 2000
Operations Specialist

Watkins, Joel 1989
Laboratory Coordinator

Weber, Rebekah 1998
Administrative Assistant III

Wesolowski, Douglas 2003
Utility I

Whiddon, Stacy 2012
Instructional Designer

White, Ann 2007
Student Financial Services Manager

Wiktor-Proffitt, Michelle 1988
Instructional Operations Office Assistant

Worosz, Richard 2011
Skilled Maintenance, HVAC

Yakowich, Kevin 2011
Utility I

Zachos, Patricia 1999
Executive Assistant

Zub, Sarah 2011
Administrative Assistant II

ADJUNCT, PART-TIME FACULTY

The following part-time adjunct instructors have earned a minimum of 100 points in one or more Schoolcraft disciplines. Some have expertise in more than one discipline. Highest earned degree is indicated.

Adjunct Professor

(Min. 14 yrs. service & 200 points)

Allen, Robert, PhD PHIL
Alway, Peter, MS PHYS
Ames, Carol, BSN NURS
Andersen, Katherine, MA MATH
Anderson, Diane L., MS BIOL/HIT
Anderson, Jr., Thomas, PhD HIST
Bagdadchi, Mahin, MS CHEM
Baker-Reed, Shirley, MA CCD
Balfour, Linda, MA MATH
Baron, Timothy, BS CIS/COMPS/ELECT
Begle, Catherine, BS CGT
Behler, Conrad, MA HIST
Bielat, Robert, MA ART
Bell, Carolyn, PhD ENG
Binkowski, Christine, MS MA
Boron, James, MA CIS
Bowers, Jr., A. Anne, PhD COMA
Boyde, Silvia A., MA COLLS
Breger, William, MBA ACCT
Brennan, Judith M., MS PSYCH
Brooks, Gale, BSN NURS
Buchta, Patricia, BSN NURS
Burke, William, MA POLS

Cardellio, Carla, MA BUS
 Cavan, Paul, MS COR
 Cavanaugh, Gerald, MA CAD
 Cieslak, Daniel H., BS BUS
 Clack, Donna, MA COLLS
 Cramb, Jr., Richard, MA CJ
 Delonis, Richard, JD CJ
 Dembicki, Helen, MA ENG
 Derderian, Harry, MBA BUS
 Derr, Carol L., MA HIST/SOC
 DiDonato, Jeanine A., MS MATH
 Donkers, Sylvia, MEd CIS
 Driscoll, Faye, MA COUNS/HDS
 Edwards, Allan, EdD MATH
 Ellies, Karen, MBA BUS
 Enteshary-Najafabady, Abbas, MS CIS
 Fletcher, Debra, MA BIOL
 Fox, Harvey, MS CIS
 Friedrich, Paul, MA MATH
 Garcia, Glenda, MA PSYCH
 Gates-Palombo, Debora, MA ECOUN
 Gibbons II, Charles, AAS WELD
 Glass-Boyd, Crystal, MA GEOG
 Gordon, Suzanne, BSN NURS
 Grant, Dorothy, MA COLLS
 Grewe, Barbara, MSN NURS
 Griffith, Robert, MBA ACCT
 Grodsky, Elliott, MA ENG
 Gullledge, Kira, BA SPAN
 Haldane, Judith, MA MATH
 Harden, Shirley, EBM MUSIC
 Harper, Ellen, MSA AHE
 Harper, Michael, AAS FIRE
 Hewelt, Barry, MA ENG
 Hiller, David, MS CJ/PA
 Hochberg, Ellen, MA CGT
 Hoffmann, Jr., Walter, MEd PSYCH
 Holman, Cheri, MSA BUS/OIS
 Holtzman, Roberta, MA FR/SPAN
 Hopfner, John, MBA BUS
 Hummer, Herbert, MS COR

Hurick, Patricia, MA COUNS
 Jackson, Harold, MA MATH
 Jacobs, Elisabeth, MA CGT
 Jacobs, Jan, PhD PSYCH
 Johns, Michael, MA HIST
 Johnson, Theodore J., MBA CJ
 Jooharigian, Robert, PhD PHIL
 Jubenville, Lawrence, ME SOC
 Kappen, Orville, MA CJ
 Keller, Mary J., BS CCD
 Kitakis, Frank G., PhD BIOL
 Kiurski, Thomas E., MPA FIRE
 Koelzer, Leonard, MBE CIS
 Kohlert, Peter A., MSA MATH
 Korenchuk, Nancy I., MA COMA
 Kurland, Sheila, MS BIOL
 LaBerge, Brenda, BSN NATP/NURS
 Lai, Hongyuan, PhD MATH
 Laird, Anita S., MS CIS
 Lane, Robert H., MA BIOL
 Langdon, Julie E., BAA CGT
 Lesko, John, MS PHYS
 Levy, Barbara S., MSN NURS
 Lindenberg, Arthur, MFA ENG
 Liss, Marianna, MA COMA
 Lonigro, Antonio, MA ITAL/SPAN
 Lovelace, II, Robert, AS EMT
 Madsen, James, MA CJ
 Marroso, Marlynn MSN NURS
 Marilley, David, MS MATH
 McCartney, James, MA BUS
 McPherson, Doris, EdD CIS
 Meehan, George, MEd MATH
 Melia, Nancy, BS BIOL
 Mendenhall, Heather, BSN NURS
 Misiak, Christopher, BA CAP/CHEM
 Mogelnicki, Margaret, MA CIS
 Moucoulis, Ellen, MA ART
 Moylan, Mark, MA COMA
 Murphy, Susan, MBA CIS/OIS
 Musto, Samuel A., MA CAP

Nathan, John, PhD ENG
 Ndukwe, Ernest, PhD GEOG
 O'Kelly, James, MA POLS
 Oakes, Michael, MA GEOG
 Olech, Timothy, MS BIOL
 Parsons, Wayne A., MA CIS
 Partyka, Patricia, MEd CIS/OIS
 Peters, Chris, AAS BMET
 Phillips, Clyde T., MS CIS
 Prescott, Jennifer, MBA MATH
 Probeliski, James, MS MATH
 Qiu, Yun, MS MATH
 Rabotnick, Seymour, MBA ACCT
 Redmond, Charles, MS CIS
 Reynolds, John R., MA HIST
 Robinson, Ronald, MA POLS
 Rothstein, Barbara, MA FR/GER
 Rubio, Patricia, MSA HIT/MA/MT
 Safran, Kenneth, JD BUS
 Sarris, Cynthia, MFA ART
 Sarris, Stephanie, MFA ART
 Schaden, J. R., PhD PHIL/PSYCH
 Schuett, Faye, PhD ENG
 Siegel, Marie C., MSN NURS
 Sikorski, Gary PA
 Simo, C.T., MSA BUS
 Sitzler, Mardell, MA MATH
 Smilnak, John, BS FIRE
 St. John, Beverly J., MS BIOL
 St. Louis, Mary, MA MATH
 Stanley, Dorothy, MA MATH
 Steffen, Carolyn, PhD BIOL
 Stuber, Patricia A., MEd ECOUN
 Switalski, Jurgen, PhD CHEM
 Swope, Michael, MA HIST
 Szabo, Sharon, MEd CIS
 Talbert, Linda S., MA COLLS
 Taylor, Kathy, BS HIT/MT
 Temporelli, Barbara, MS CHEM
 Towner, Jr., Melvin, MBA CIS
 Trembath, Darryl, MBA BUS

Trpovski, Jovan, BAA POLS
 Turnau, III, William, BS CAD
 Vendittelli, Deborah, MSN NURS/NATP
 Viksne, Edgars G., MBA BUS
 Wale, Jerry, MSEE CIS/ELECT
 Walker, Andrew FIRE
 Washka, Jack, MEd PE
 Wlosinski, Raymond, BS FIRE
 Woods, Robert, MA ENG/PHIL
 Wroblewski, Veronica, MA COLLS/FR
 Yee, Donald, MA BUS

Adjunct Associate Professor

(Min. 8 yrs. service & 150 points)

Abani, Kaveh, MA CIS
 Anderson, Mark E., MA HIST/POLS
 Aquila, Dominic, PhD HIST/HUM/MUSIC
 Arnold, Jacinta, MA ENG
 Bacon, Anthony, MEd ART/HUM
 Badry, Peter, MA ECON
 Blau, Ben, AAS SRT
 Brewer, Janice, MS ACCT
 Brodowicz, Pamela J., MS BIOL
 Burhans, Bruce, MA HIST
 Buslawski, Jr, Robert, MA COMA
 Callahan, Dena L., BA ENG
 Catalano, Timothy FIRE
 Chaudhery, Malasri, MA PSYCH
 Chaudhery, Virinder, PhD HUM
 Coursey, Donald, MS BIOL
 Crawley, Christopher FIRE
 Davis, Gary, MA MATH
 Dowdy, Kristen, AAS CAP
 Dreyfus, Raymond, MBA BUS
 Frame, Kathleen, MA COMA
 George, Philip FIRE
 Ginsberg, Lorraine, MA MATH
 Gordon, L. G., MS/MSA BIOL
 Graham, Jeanne R., BA ENG
 Gueorguiev, Emil A., MA MATH
 Handelman, Nancy, MA COLLS
 Haynes, Constance, MSBA OIS

Hays, Samuel K., MA.....ENG
 Hill, Clarice, MACOR
 Hill, Michele L., MSACCT
 Homsher, Ruth, PhD.....CHEM
 Hunley, Ellen M., MAENG
 Hunt, Dennis, MAECON
 Jawad, Badri, MBAECON
 Johnson, Kelly, MSPSYCH
 Kairis, Tony, MASOC
 Kallas, Jason, MA.....ENG
 Kheder, Niran, MA.....ENG/ESL
 Kirkby, Frederick, MA.....COMA
 Knox, Mary, BA.....CJ
 Kronk, James, MBA.....BUS
 Lewton, Kelli L.....CAP
 Maheras, Nancy, BSN.....NURS
 Maheshwari, Neal, MBA, MSMATH
 Martin, James, MAPHIL/PSYCH
 Mathieson, Karen K., BSN.....NURS
 Matthews, Janice, MSBA.....BUS
 Mazur, Brian, MBA.....BUS
 McCulloch, Celia M., AASCGT
 McGinnis, Jr., Donald, MA.....POLS
 McLane, Patricia, MAHIT
 McMahon, George, EdDSOC
 Mercer, Sarah E., BS.....CAP
 Moss, Frederick, MMMUSIC
 Mott, Madeline, MSN.....NURS
 Murray, Steven M., PhD.....PSYCH
 Nanian, Marjorie, JD.....POLS
 Nicklaus, Ronald, MAMATH
 Oxley, Robert, PhDPHIL/POLS/SOC
 Paholsky, Kathleen, BAMAS
 Paton, Nancy, MEdART/HUM
 Pawlik, Patricia, MSNNURS
 Pearce, Robert F., MPA.....COR/CJ
 Peper, Karen, MSNNATP/NURS
 Pfaendtner, Jean, MSW.....CCD
 Pfannes, Daniel P., MACJ/PA
 Puggini, Julie, MACOUNS/HDS
 Rainey, Anne, ME.....MATH

Reed, Gary B., MSBIOL
 Reeds, Janet, MA.....ANTH
 Renas, Kim, MAMUSIC
 Rintz, Michael, MS, JDCM
 Rochon, Steven, MBACAD
 Rogers, Jerry, MS.....BIOL
 Roney-Hays, Sandra, MA.....ANTH/SOC
 Scott, Michelle, MA.....ENG
 Scott, Todd, PhDCJ/HS
 Skrocki, Allan, MLSCJ/PA
 Spolsky, Susan, MSWPSYCH/SOC
 Steele, Ramona, MEdCOLLS
 Stegbauer, Katherine, BSN.....NURS
 Sypniewski, Matthew, MAENG
 Taracuk, Deborah Z., MA.....COMA/ENG
 Thomson, Anne M., JDBUS/POLS
 Thomson, Anne R., MEdENG
 VanOrnum, Scott, BMMUSIC
 Vaysman, Lyudmila, MSCHEM
 Veerasamy, Parmeswaree, ML....FR/POLS
 Vescan, Ioana, MSPHYS
 Vinod, Roshin, MS.....BIOL
 Vitori, Karen, JDBUS
 Wallace, SandraCAP
 Woodside, Kenneth, MSCHEM
 Yemets, Alexander, MSMATH
 Zorn, Lila K., MS.....ENG
 Zuccarini, Deborah, MAART/CGT

Adjunct Assistant Professor

(Min. 3 yrs. service & 100 points)

Augustinaitis, Maria, MA.....SPAN
 Azizi, Jahan, AASELECT
 Bayne, Nancy, PhDBIOL
 Beafore, Jr., Louis, MAPOLS
 Behen, Michael, PhDPSYCH
 Bell-Wade, Sharon, MSN.....NURS
 Bennett, Steven, MS.....BIOL
 Bethel, Robert, MSBUS
 Billingsley, Suzanne, MSNNURS
 Bolling, Jack, JDCJ
 Carlton, Sharon, MA.....ART

Chapo, Peggy, MS.....HIT
 Christmas, Charles, PhDACCT
 Corral, Michael, MAMATH
 Crowley-Harpenau, Patricia, MS.....BIOL
 Derian, Janice, BSMUSIC
 Donohue-Ebach, Patricia,PE
 Drake, Jonathan, DMHUM/MUSIC
 Edwards, Sharon, BSN.....NURS
 Eliasson, Jonene, MAFR
 Emert, Randall, AASCAP
 Ewing, Kevin, MFA.....ART/HUM
 Fedewa, David, MA.....PE
 Fichtenberg, Christa, MA ..CAB/COLLS/ESL
 Fitzpatrick, Kandance, BS.....HIT
 Gerich, Ronald, MSMATH
 Gildner, Douglas, BS.....FIRE
 Glubzinski, Ann, MBABUS
 Goncharoff, Darryl, MAENG
 Gordon, Richard F., MPA.....CJ
 Gorzenski, Leni, BSNNURS
 Gould, Rosemary, MEdMATH
 Gutierrez, Linda, MASOC
 Ham-Kucharski, Dawn, MAENG
 Hanna, Samer, MS.....CHEM
 Harden, April, MAENG
 Hendin, Tara, MAENG
 Hoffman, Diane, CMAMA
 Horton, Kameka, BSNNURS
 Inman, ChristopherCGT
 Jannot, Kenneth, MAENG
 Jenzen, Cynthia, MAANTH
 Johnson, Michelle, BSN.....NURS
 Jones, Andrew, MSCHEM
 Kelly, RobertMAS
 Koenigskecht, Cindy, PhD.....PSYCH
 Kolpacke, Joseph, MACOLLS
 Korri, Joy F., BSN.....NURS
 Kremer, Katherine, BAHIT
 Kusiak, Mark, AASCJ/PA
 LeBlanc, Kayla S., MBA.....BUS
 Leib, Arthur, MA.....PE

Lowell, Carole, MACOLLS/ESL/CAB
 Malafouris, Elaine, MSCCD
 Malalahalli, Jayalakshmi, ME.....HIST
 McAdaragh-Hain, M. Kathleen, PhD..BIOL
 McDonald, Patrick, MAHIST
 Meehan, Linda, DMA.....MUSIC
 Michalsen, Paul, MEd.....MUSIC
 Miller, Natalie, MA.....CCD
 Milnes, Charlotte, MACOLLS/MAS
 Mocon, Tracey, MAENG
 Morgan, Tom, PhDPSYCH
 Mumm, DouglasCGT
 Munro, Joyce, MAENG
 Muse, Wilson, PhDBIOL
 Newth, Joshua, MAART
 Nutter, Guy, BS.....CJ
 O'Hagen, David, PhD.....BIOL
 Paris, Jill, ADN.....MA
 Pavloff, VickieEMT
 Pollak, Jacob, BAS.....CGT
 Ponzi, CathyJo, MSA.....AHE
 Prusaitis, Laura, AAS.....EMT
 Rice, Kristina, MA.....HUM
 Robinson, Jeffrey, BASRT
 Rosenbaum, Daniel, PhDPSYCH
 Roth, Diane, MAMATH
 Ruff, Annette, MSBIOL
 Sadowski, Mark, BBAACCT/BUS
 Saffold, James, MSAHS/CJ
 Schulz-Perez, Karen, PhDPSYCH
 Shaw, Eric, MAENG
 Siddiqui, Ayesha, PhDBIOL
 Seippel, Steven, MSCAD
 Smith, Dennis, MAMATH
 Smith, Janice, MEdCOLLS/ESL
 Sosnoski, Steven, MA.....ENG
 Soyko, KyleFIRE
 Stitchler, Suzanne, MASPAN
 Suter, Ronda, MS.....ACCT
 Switaj, Sheryl, MASOC
 Thompson, Velonda, MS.....CIS

Timacdog, Jeffensen, BSN NURS
 Townsend, Katrice, MA COMA
 VanHellemont, Susan, MA ENG
 Wakar, Theodore, AAS CAP
 Walker, Leland, MS CIS
 Weinkauf, Richard, MS. BIOL/CAP/CM
 Wernholm, Audrey, MA. COLLS/CAB
 White-Underwood, Robin, MS PSYCH
 Wicker, Arnold, MS HS/CJ/PA
 Williamson, Agnes, MA ENG
 Worden, Jessica, MSW ANTH
 Wrone, Tamara, PhD. BIOL

EMERITUS–HONORAIRE EMPLOYEES

❖ = Deceased

Adams, Jon P. 1965–1973 ❖
Dean of Applied Sciences Emeritus

Ahland, Virginia 1969–1991
Secretary Learning Resources Honoraire

Allen, Kenneth M. 1965–1993
Biology Professor Emeritus

Allison, Lea M. 1975–1998
OIS Associate Professor Emeritus

Anderson, Roger 1968–2002
Biology Professor Emeritus

Andrews, Elizabeth 1973–1989 ❖
Assistant Dean, CES Emeritus

Arlen, Richard 1969–1994
Accounting Professor Emeritus

Attalai, Peter 1964–1984 ❖
German, Spanish Professor Emeritus

Balfour, Linda M. 1990–2010
Mathematics Professor Emeritus

Baumgartner, William H. 1967–1986
Electronics Professor Emeritus

Beaudoin, Mary 1974–2011
Bursar Emeritus

Bedford, John P. 1964–1981 ❖
Geology Professor Emeritus

Benson, Richard 1967–1993
Culinary Arts Professor Emeritus

Berkaw, Molly 1988–2003
Secretary to the Assistant Vice President for Instruction Honoraire

Bettis, Patricia J. 1995–2011
Accounts Payable Associate Honoraire

Black, Agnes J. 1973–1992
Personnel Specialist Honoraire

Black, J. Robert 1966–1992 ❖
Art Professor Emeritus

Blazic, Carol S. 1992–2010
Secretary III-Learning Support Services Honoraire

Bloom, Bradley 1968–2001
Music Professor Emeritus

Bloom, Stuart C. 1965–1996
History Professor Emeritus

Bogarin, Russell 1965–1991 ❖
Registrar Emeritus

Boisseau, Patricia K. 1992–2010
Coordinator-Testing Center Honoraire

Bolcer, Eileen 1971–1995
Nursing Professor Emeritus

Bowe, Stella 1986–2008
Admissions and Enrollment Center Office Assistant Honoraire

Boyce, Marilyn Joyce 1973–1994
Doc-U-Center Supervisor Honoraire

Boye, Dale 1970–1995
Mathematics Professor Emeritus

Bradner, Eric 1961–1971 ❖
President Emeritus

Braun, Sharon 1992–2006
Director of Health, Fitness and Senior Adult Programs Emeritus

Breithaupt, Robert L. 1966–1987
Assistant Dean of Culinary Arts Emeritus

Burke, William 1967–2004
Political Science Professor Emeritus

Burnell, John R. 1968–1998 ❖
Manufacturing Professor Emeritus

Burnside, Robert 1967–1996
Counselor Professor Emeritus

Butler, Patrick 1962–1984 ❖
Director of Library Emeritus

Carleton, Midge 1970–2002
Associate Dean-Sciences Emeritus

Castillo, Charles W. 1964–1985 ❖
Communication Arts Professor Emeritus

Cavanaugh, Gerald 1969–2004
Related Trades Professor Emeritus

Clack, Donna 1988–2004
Developmental Education Professor Emeritus

Collins, Lois 1970–1993 ❖
Secretary to the Dean of Educational Services Honoraire

Cook, Lowell T. 1967–1997
Business Professor Emeritus

Cooley, Margot 1997–2007
Business Services Secretary Honoraire

Cotton, Sharon A. 1980–2000 ❖
Accounting Professor Emeritus

Covert, Christine 1965–1982 ❖
OIS Professor Emeritus

Dagher, Joseph 1967–1988 ❖
English Professor Emeritus

Dansby, Edwynna 1979–1994 ❖
Dean of College Centers Emeritus

Diebel, Thaddeus E. 1973–1985
Dean of College Centers Emeritus

Doinidis, Elgene 1988–2009
Director of College Centers Emeritus

Doll, Rodman E. 1968–1997
Mathematics Professor Emeritus

Dorsey, Juanita 1979–2010
Secretary III-Sciences Honoraire

Drouillard, Clarence 1966–2004 ❖
Facilities Management Utility II Honoraire

Dufort, Robert C. 1969–1999
Art Professor Emeritus

Edmunds, Margaret 1991–2002
Continuing Education Office Assistant Honoraire

Ellis, Midge B. 1974–1991
Coordinator of Special Events Honoraire

Feenstra, Fernon 1964–2002
Associate Dean-Business and Technology Emeritus

Ferrari, Dorothy E. 1982–1992
Personnel Specialist Honoraire

Fleming, Michael J. 1983–2011
Operations Technician Honoraire

Florek, Sandra P. 1969–1999
Dean of Marketing and Development Emeritus

Foley, Maureen F. 1983–2000
Chemistry Professor Emeritus

Gaitskill, Lawrence R. 1964–1985 ❖
Political Science Professor Emeritus

Gans, Marvin 1964–2002
Assistant Dean, Continuing Education Services Emeritus

Garrett, Evan 1968–2004
History Professor Emeritus

Garritano, Rocco 1966–1991 ❖
Mathematics Professor Emeritus

Geil, Barbara A. 1964–1995 ❖
Vice President for Student Services Emeritus

Gerarge, Elaine E. 1983–2011
Coordinator-Student Employment Honoraire

Gibbons, II, Charles L. 1976–2005
Metallurgy Associate Professor Emeritus

Gilbert, Betty J. 1986–2001
Executive Director of Human Resources Emeritus

Gordon, Richard 1969–2004
English Professor Emeritus

Green, Anne 1978–2002
Administrative Coordinator to the President Honoraire

Greenwell, Diane F. 1978–2004
Accounts Receivable Associate Honoraire

Griffith, Ronald 1971–2003
Assistant Vice President for Instruction Emeritus

Gudan, Sirkka 1980–1998 ❖
Assistant Dean for Academic and Assessment Services Emeritus

Hammond, Patsy R. 1970–1995
Nursing Professor Emeritus

Harju, Debbie 1980–2002
Assistant to the Director of Enrollment Management Honoraire

Hayes, Sylvia J. 1989–2009
Culinary Arts Marketing/Merchandising Specialist Honoraire

Heinzman, David L. 1970–1986
Assistant Dean for Instruction Emeritus

Heise, William R. 1969–1998 ❖
Counselor Professor Emeritus

Hershoren, Gary 1967–1996
Counselor Professor Emeritus

Hoffmann Jr., Walter O. 1964–2004
Psychology Professor Emeritus

Holtzman, Roberta 1964–2004
Foreign Language Professor Emeritus

Hulik, Kathleen 1996–2007
Public Relations/Media Coordinator Honoraire

Hurick, Patricia 1990–2002
Counselor Professor Emeritus

Huston, D. Louise 1964–1982 ♦
Director of Accounting, Payroll Honoraire

Jawor, Mary 1964–1989
English Professor Emeritus

Jones, Claren 1964–1979 ♦
Chemistry Professor Emeritus

Joswiak, Fran 1992–2005
Executive Assistant Honoraire

Kaplan, Suzanne 1964–2002
English Professor Emeritus

Keene, Robert 1968–1979 ♦
Instructional Vice President Emeritus

Kelley, Ralph B. 1964–1984 ♦
English Professor Emeritus

Kelly, Cecilia 1964–1983 ♦
Art Professor Emeritus

Kelly, Sandra L. 1976–2006 ♦
Counseling Secretary III Honoraire

Kianfar, Mehdi 1967–1987 ♦
Political Science Professor Emeritus

Kirkland, Jo Ann 1989–2000
Human Resources Operations Assistant Honoraire

Kolenda, Janet 1971–2001 ♦
Nursing Professor Emeritus

Kyriacopoulos, John 1965–1992
English Professor Emeritus

LaBo, Holly 1987–2010
PE Attendant Honoraire

Lao, Lincoln 1968–1999
Art Professor Emeritus

Larkin, Virginia E. 1985–1998
Secretary to Associate Dean of College Centers Honoraire

Lesko Jr., John S. 1969–2002
Physics Professor Emeritus

Lichy-Mayes, Elizabeth F. 1967–1992
English Professor Emeritus

Lindenberg, Arthur 1967–2002
English Professor Emeritus

Lindner, W. Kenneth 1962–1987 ♦
Vice President for Business Services Emeritus

Lockwood, J. Bryce 1964–1988 ♦
Physics Professor Emeritus

Loehne, Joyce 1969–1986
Assistant to the Vice President for Business Services Honoraire

Ludwig, Joyce 1964–1992
Secretary to the President Honoraire

Lurain, Jane 1966–1985
Secretary to Assistant Dean Community Services Honoraire

Martin, Candis 1965–1997
Assistant Dean Math, Information Systems, and Business Emeritus

Marroso, Marlynn J. 1998–2012
Nursing Associate Professor Emeritus

Matson, Richard E. 1968–1990 ♦
Computer Information Systems Professor Emeritus

Mattson, Lorna M. 1987 – 2012
Accounts Receivable Associate Honoraire

Mayes, La Salle S. 1964–1992 ♦
English Professor Emeritus

McBride, Ronald 1974–2005
Electronics Professor Emeritus

McDowell, Richard W. 1981–2001
President Emeritus

McNally, Edward V. 1963–1981 ♦
Vice President for Student Affairs Emeritus

Miller, James 1986–2011
Utility I Honoraire

Miller, Ralph 1966–1985 ♦
Geography Professor Emeritus

Minock, Donna 1967–1996
English Professor Emeritus

Monge, John A. 1997–2012
Campus Security Police Chief Emeritus

Monroe, Carl 2002–2012
Counselor Associate Professor Emeritus

Moorhead, Rex K. 1968–1981 ♦
Mathematics Professor Emeritus

Morand, Mary 1993–2010
Administrative Coordinator Honoraire

Morgan, Harriet C. 1964–1990 ♦
Biology Professor Emeritus

Morelock, Donald L. 1967–2012
Music Professor Emeritus

Munday, Janice M. 1991–2008
Transfer Coordinator Honoraire

Munn, Wilson E. 1964–1995
Mathematics Professor Emeritus

Munro, Gerald 1970–1996
Executive Director of Human Resources Emeritus

Munro, Kenneth F. 1986–2006
Physical Education Attendant Honoraire

Naslund, Raymond L. 1966–1985 ♦
Accounting Professor Emeritus

Nathan, John G. 1975–2004
English Professor Emeritus

Nickels, William G. 1968–2001
Chemistry Professor Emeritus

Niergarth, Grover G. 1965–1990
Biology Professor Emeritus

Nordman, Donna J. 1986–2010
Director of Counseling/Career Transfer Center Emeritus

Nuffer, Roy 1985–2011 ♦
Librarian Emeritus

Ochs, Marion J. 1964–1980 ♦
Business Professor Emeritus

Olson, John A. 1973–1985 ♦
Librarian Emeritus

Ordowski, Lawrence E. 1965–1995
Associate Dean of Liberal Arts Emeritus

O'Sullivan, Jill F. 1982–2009
Vice President/Chief Financial Officer Emeritus

O'Toole Jr., Michael A. 1964–1992
English Professor Emeritus

Palm-Leopold, Mary Alice 1993–2010 ♦
English Professor Emeritus

Partyka, Patricia A. 1978–2010
OIS/CIS Professor Emeritus

Pearce, Robert F. 1996–2010
Associate Dean of College Centers Emeritus

Perkins, W. David 1964–1985
English Professor Emeritus

Pike, Jean 1964–1997
Associate Dean of Students Emeritus

Plemmons, Larry M. 1990–2010
Campus Security Police Officer Honoraire

Pletcher, E. Rachel 1968–1983 ♦
Payroll Employee Honoraire

Poupart, Oscar 1967–1992 ♦
CIS Professor Emeritus

Powell, Mary S. 1966–2004
English Professor Emeritus

Proffitt, Carol M. 1992–1999
Document and Layout Associate Honoraire

Raby III, Adelard H. 1981–2001
Vice President for Business Services Emeritus

Randall, Ronald 1969–2002
Registrar Emeritus

Reibling, Louis A. 1980–2004 ♦
Vice President for Instruction Emeritus

Richmond, Merle J. 1970–1999
Accounting Professor Emeritus

Rief, Mary Jo H. 1987–2004
Administrative Assistant to the Vice President for Finance and Business Services Honoraire

Rogowski, Ronald W. 1970–2001
Counselor Professor Emeritus

Roncoli, Thomas C. 1967–1992
Physical Education Professor Emeritus

Rosenberger, Roberta L. 1995–2010
Campus Security Police Officer Honoraire

Rousseau, Clara M. 1962–1981
Administrative Assistant Honoraire

Rudick, Lawrence W. 1964–1983 ♦
Communication Arts Professor Emeritus

Rupp, Louis E. 1969–1988 ♦
Counselor Professor Emeritus

Ryan, William A. 1964–1979 ♦
Geology Professor Emeritus

Ryktarsyk, Donald 1964–2004
Business Professor Emeritus

Ryktarsyk, Donna 1967–2003
Assistant Director-Financial Aid Honoraire

Sampson, Dorothy 1967–1998
Nursing Professor Emeritus

Sattig, Harriett H. 1963–1980
Director of Health Careers Emeritus

Schaden, J. Robert 1993–2004
Philosophy Professor Emeritus

Scharmen, Barbara D. 1991–2009
Administrative Assistant/Budget Coordinator Honoraire

Scharmen, Larry L. 1985–2000
Biomedical Engineering Technology Professor Emeritus

Schewe, Stephen J. 1972–2004
Physics Professor Emeritus

Schneider, Janet 1989–2004
Librarian Emeritus

Schuett, Faye 1992–2012
English Professor Emeritus

Shon, Maybelle B. 1966–1983 ♦
Secretary to Dean of College Centers Honoraire

Sipes, Delavan W. 1965–1987 ♦
Electronics Professor Emeritus

Smith, Mary 1965–1988
Nursing Professor Emeritus

Smith, Piera 1985–2010
Coordinator-Support Services Honoraire

Snyder, Edmund S. 1962–1974 ♦
Librarian Professor Emeritus

Snyder, Gordon G. 1965–2000
Biology Professor Emeritus

Springer, Sherry L. 1983–2009
Coordinator, Student Activities Honoraire

Stec, Leonard 1966–1990
Culinary Arts Professor Emeritus

Stefanski, Frederick 1966–1980
Instructional Dean Emeritus

Steffen, Carolyn A. 1975–2010
Biology Professor Emeritus

Stein, Joanne 1967–2002
English Professor Emeritus

Sullivan, Monica 1989–2010 ♦
Vice President of Instruction Emeritus

Sutherland, Roger A. 1964–1990
Biology Professor Emeritus

Swanborg, Nancy K. 1989–2008
Director of Women's Resource Center Emeritus

Swiger, Curtis W. 1979–2012
Sergeant Honoraire

Sylvester, James 1967–1997
Counselor Professor Emeritus

Sylvester, Luann K. 1995–2008
Programmer/Analyst Honoraire

Szabo, Sharon F. 1981–2001
Computer Information Systems Professor Emeritus

Szukielowicz, Gail 1989–2010
Transfer Credit Specialist Honoraire

Tang, Kin Ling 1990–1999
Psychology Associate Professor Emeritus

Tews, Carolyn H. 1977–1999
Mathematics Professor Emeritus

Timte, Jacqueline 1994–2004
Secretary, Business Services Honoraire

Titus, John L. 1997–2009
Counselor Assistant Professor Emeritus

Tomalty, R. Elaine 1987–2001
Secretary for Women's Resource Center Honoraire

Tomalty, Richard L. 1970–2000
Counselor Professor Emeritus

Tomey, Carolyn S. 1991–2005
Registrar's Office Assistant Honoraire

Tomey, John B. 1974–2005
Executive Vice President Emeritus

Udrys, Janina 1973–2004
Mathematics Professor Emeritus

Verlinich, Mary 1973–1989
Secretary for Financial Aid Honoraire

Vukmirovich, Sylvia 1967–2001
Counselor Professor Emeritus

Wallen, Lynn 1994–2009
Administrative Coordinator Honoraire

Washka, Jack A. 1967–2004
Health and Physical Education Professor Emeritus

Watson, Andrew C. 1964–1999 ♦
Chemistry Professor Emeritus

Webber, John R. 1965–1993
Director of Counseling Emeritus

Williams, Larry G. 1969–2006
Mathematics Professor Emeritus

Wilson, Gordon 1968–2004
English Professor Emeritus

Wilson, John M. 1965–1993
History Professor Emeritus

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Do you have limited English Proficiencies?

Schoolcraft College assures that the lack of English skills will not be a barrier to admission into instructional programs. Information in the catalog and schedule of classes is available to limited English proficient students. Contact the Learning Assistance Center at 734-462-4436 if you have further questions.

Si usted quiere recibir esta información en español, favor de llamar 734-462-4436. El colegio universitario de Schoolcraft asegura que la falta de habilidad en inglés no será impedimento para personas que quieran ingresar.

About this Catalog

Schoolcraft College publishes this Catalog for information purposes only. Its contents do not constitute a contract between this institution and prospective or enrolled students.

The information contained in this general College Catalog reflects the current curricula, policies and regulations of the college. However, these are subject to change at any time by action of the Board of Trustees or the administration.

Livonia Campus (SC)

**18600 Haggerty Road
Livonia, MI 48152-2696
734-462-4400**

Applied Sciences Building

Business Programs
Classrooms
Computer Graphics Technology Program
Computer Programs
Dean of Occupational Programs and
Economic Development
Nursing Program
Technology Programs

Biomedical Technology Center

Classrooms
Health Professional Simulation Lab
Open Entry/Open Exit Lab
Science Programs
Technology Programs

Bookstore**Bradner Library**

Archives
Learning Assistance Center

Continuing Education Center**Children's Center****Forum Building**

Art Programs
Classrooms
Forum Recital Hall
Music Programs
Science Programs

Grote Center

Human Resources
Institutional Research
Marketing Department
Office of the President

Liberal Arts Building

Associate Dean of Learning Support Services
Classrooms
Dean of Liberal Arts & Sciences
Liberal Arts Programs
Liberal Arts Theatre

McDowell Center

Admissions and Welcome Center
Career Services
Cashier
Classrooms
Computer Labs
Counseling and Academic Advising
Vice President of Student Services
Disability Services
Distance Learning
Finance and Business Services
Financial Aid
Office of Instruction
Open Entry/Open Exit Office
Operations, Curriculum and Assessment
Purchasing
Registration Center
Student Account Services
Student Records
Testing Center
Vice President of Instruction

Physical Education Building

Classrooms
Fitness Center
Gymnasium
Pool

Service Building

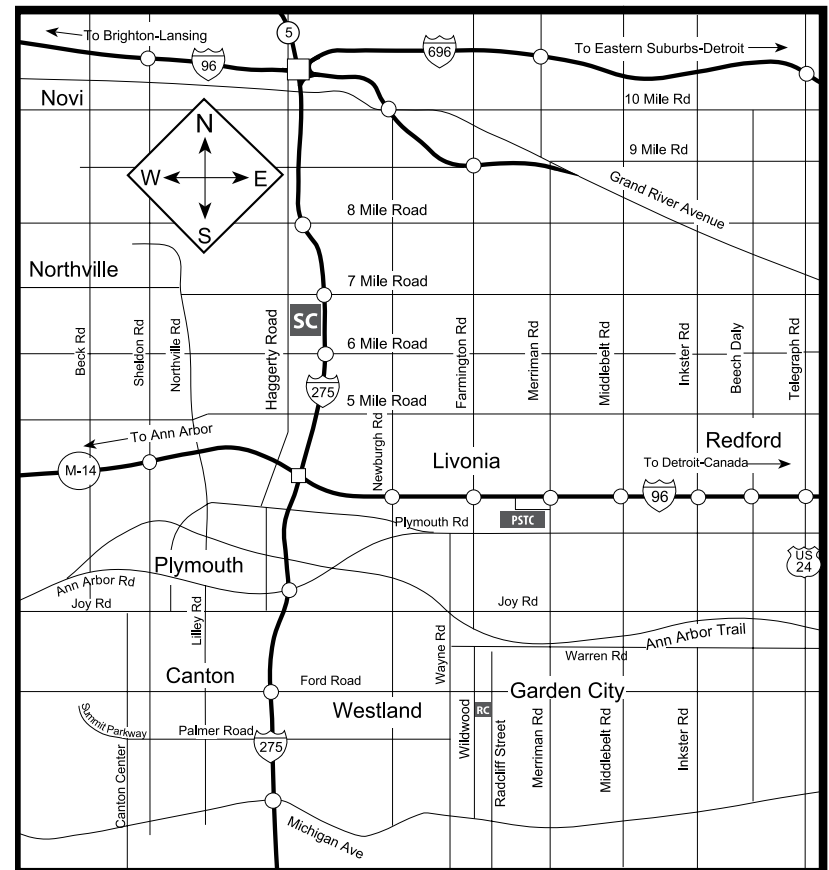
Campus Security Police
Facilities Management
Lost and Found

VisTaTech Center

American Harvest Restaurant
Business Development Center
Classrooms
Culinary Arts Program
Grants
Institutional Advancement
Main Street Cafe
Schoolcraft Foundation

Waterman Wing

Food Services
Henry's Food Court
Meeting Rooms
Recreational Areas
Student Activities
Student Clubs
Study Area

**Radcliff Center (RC)**

**1751 Radcliff Street
Garden City, MI 48135
734-462-4770**

Associate Dean, College Centers
Allied Health Programs
Emergency Medical Technology
Library
Massage Therapy Program

Public Safety

**Training Complex (PSTC)
31777 Industrial Road
Livonia, MI 48150
734-266-4639**

Academy Training Center

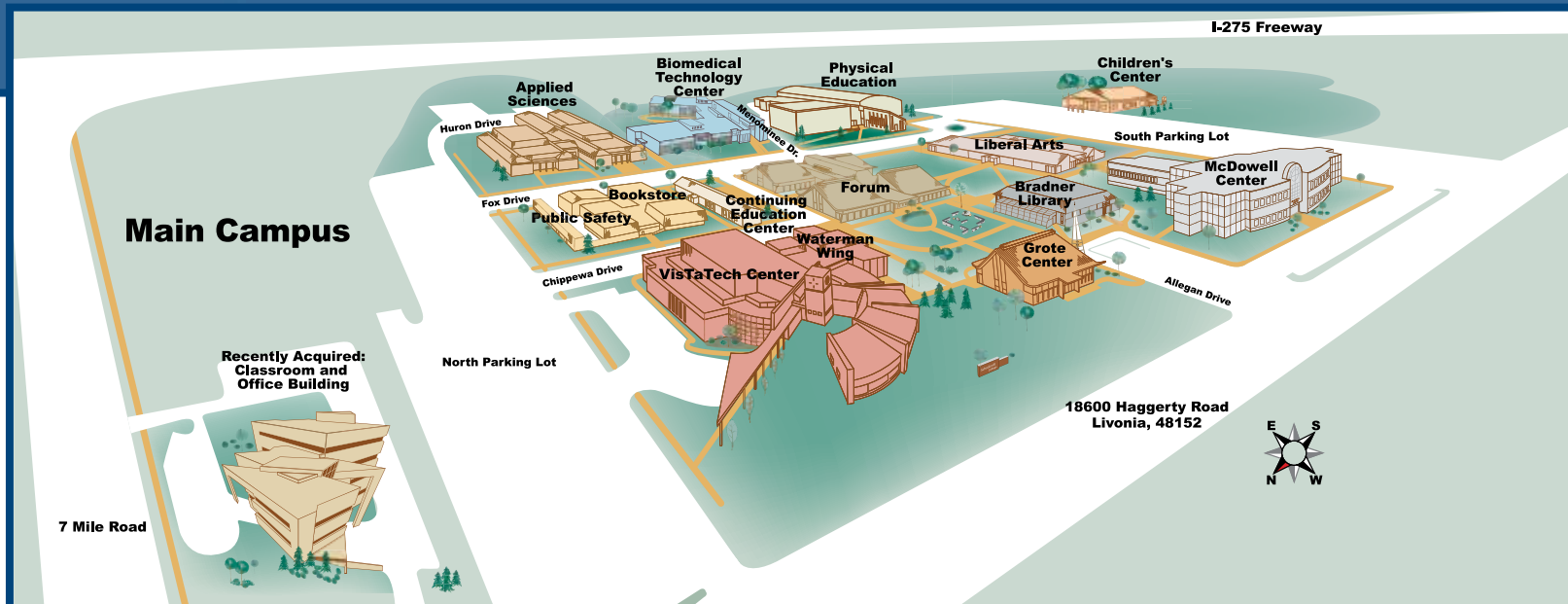
Classrooms
Fire Academy
Police Academy

Firearms Training Center

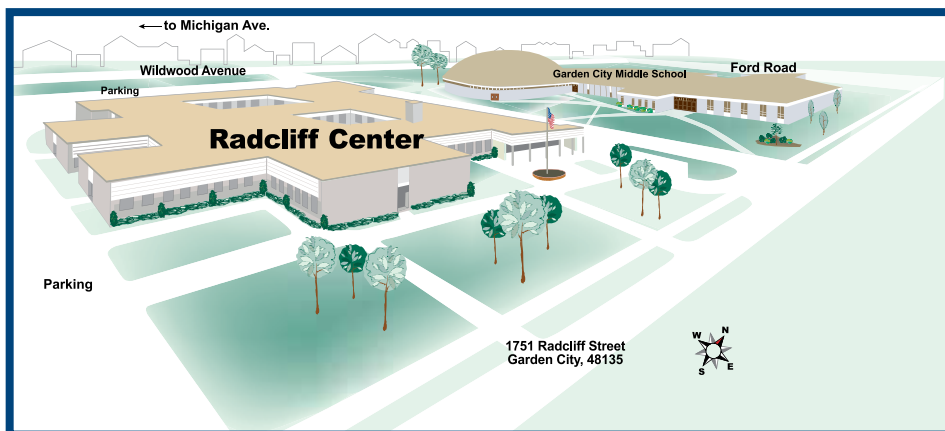
Classrooms
Criminal Justice
Fire Technology
Firearms Training
Homeland Security

DISCOVER

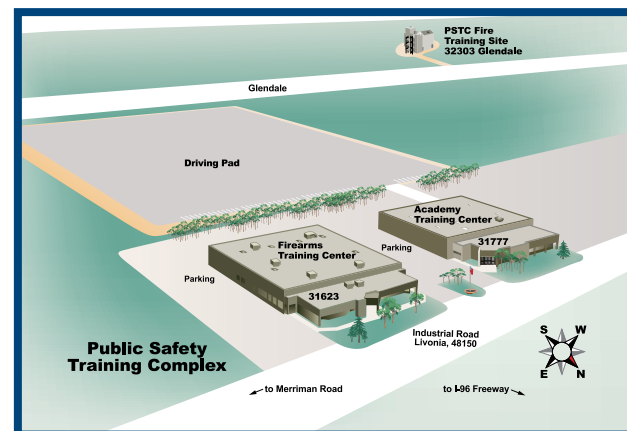
Schoolcraft



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Radcliff Center
1751 Radcliff Street
Garden City, MI 48135
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Public Safety Training Complex
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