Schoolcraft College 50 years 1961-2011

Winter 2012
CREDIT CLASS SCHEDULE

DISCOVER Schoolcraft

- online registration assigned start times November 12 and 13; *see page 9*
- classes begin January 14

Schoolcraft College

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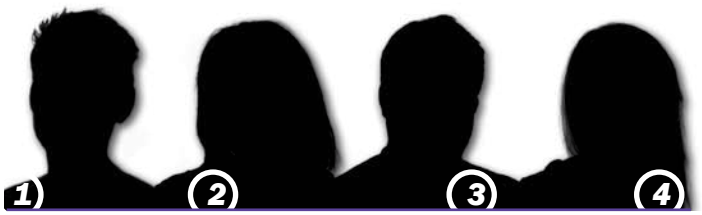
Students on the cover:



Vanjula hopes to follow in his father's footsteps and pursue a career in the aerospace industry. In addition to being a member of the Math and Physics Club, he is also active in Phi Theta Kappa, the Break-dance Club, and as a tutor in the Learning Assistance Center.

Ashley hopes to pursue a career as a news reporter. For Ashley, Schoolcraft is a great way to get a solid start by earning an associate degree and transferring to a four-year university for a bachelor's degree in media and communications.

Schoolcraft's reputation and wide range of courses were what originally attracted **Michael** to Schoolcraft. After previously working on the assembly line at Ford Motor Company, he is now pursuing a degree in Computer Information Systems.

Jessica is studying engineering in preparation for a career in the United States Air Force or the aviation and aerospace industry. After attending Michigan State University for a year, she found Schoolcraft to be a better match for her needs. She likes how extremely helpful and knowledgeable the faculty are.

Directory

Livonia Campus
734-462-4400

Garden City Campus
Radcliff Center Main Office—734-462-4770
M–Th 8 am–5 pm, F 8 am–4:30 pm
Extended hours at beginning of semester

Public Safety Training Complex
734-266-4639
Hours vary

Admissions & Enrollment Center
McDowell Center—734-462-4426
M–Th 8 am–6 pm, F 8 am–4:30 pm
Extended hours at beginning of semester

Bookstore—New and Used Books
Service Building—734-462-4409
M–Th 8:30 am–7 pm, F 8:30 am–4 pm
Extended hours at beginning of semester
Radcliff Bookstore—734-462-4778
M–Th 8:30 am–1 pm, 4:30–8:30 pm
Online—www.schoolcraftbooks.com

Campus Security Police 24 hours
Service Building—734-462-4424

Career & Transfer Center
McDowell Center—734-462-4421
M–Th 8 am–6 pm, F 8 am–4:30 pm

Cashier
McDowell Center—734-462-4449
M–Th 8 am–6 pm, F 8 am–4:30 pm
Extended hours at beginning of semester

Counseling Center
McDowell Center—734-462-4429
M–Th 8 am–7:30 pm, F 8 am–4:30 pm

Distance Learning *Online Courses*
McDowell Center—734-462-4532
M–F 8 am–4:30 pm

Financial Aid
McDowell Center—734-462-4433
M–Th 8 am–6 pm, F 8 am–4:30 pm

Learning Assistance Center
Bradner Library—734-462-4436
M–Th 8 am–8 pm, F 8 am–4 pm, Sat. noon–4 pm
Radcliff—734-462-4400 ext. 6021
M–Th 9 am–1 pm & 5–8 pm, Sat. 10 am–2 pm

Library Services
Bradner Library—734-462-4440
M–Th 8 am–9 pm, F 8 am–4 pm
Sat. & Sun. noon–5 pm
Radcliff Library—734-462-4400 ext. 6020
M–Th 8:30 am–9 pm, F & Sat. 9 am–1 pm

Office of Instruction
McDowell Center—734-462-4431
M–F 8 am–5 pm

Open Entry/Open Exit Office *room 180*
Grote Administration Center—734-462-4588
M–F 8 am–4:30 pm

Student Records
McDowell Center—734-462-4677
M–F 8 am–4:30 pm

Student Recruitment Office
McDowell Center—734-462-4683
M–F 8 am–4:30 pm

Testing Center
McDowell Center—734-462-4806
M–Th 8 am–7:30 pm, F 8 am–4:30 pm
Sat. 10 am–2 pm

Transition Center
McDowell Center—734-462-4443
M–Th 8 am–6 pm, F 8 am–4:30 pm

Are You a New Student?—Steps to Apply and Enroll

Enrollment services are located in the McDowell Center

1 Apply for Admission

- Complete and submit the Application for Admission online at **www.schoolcraft.edu**. See page 8 of this schedule for directions.
- Admissions & Enrollment Center 734-462-4426.

2 Request Official Documents

- Request an electronic transcript be sent through www.docufide.com

OR

- Send your high school transcripts and/or GED scores to the Admissions & Enrollment Center. Official college transcripts must be **sent** from the transfer institution's Registrar's Office directly to Schoolcraft.

3 Apply for Financial Aid

- Apply online at **www.fafsa.gov**. Complete and submit financial aid forms as directed.
- Apply a minimum of 10 weeks before the semester begins.
- Guest and non-degree seeking students are not eligible for financial aid.
- Office of Financial Aid 734-462-4433.

4 Provide Placement Scores

- Submit ACT or SAT scores or college transfer credit demonstrating your ability in reading, writing and math

OR

- Take a placement test in the Testing Center. An ability to benefit test may be needed for some financial aid applicants. Bring photo identification and your student number. No appointment is needed. There is no charge for your first test, however there will be a fee for subsequent attempts.
- Testing Center 734-462-4806.

5 Participate in Orientation

- To schedule an orientation, contact the Counseling Center 734-462-4429.

OR

- View orientation on www.schoolcraft.edu/olo.

6 Meet with a Counselor/ Academic Advisor

- Explore options, create an educational plan, and select your classes.
- Counseling Center 734-462-4429.

7 Register for Classes

- See pages 9–12 for registration information.
- Bring your photo identification to the Admissions & Enrollment Center to obtain a student identification card.
- Admissions & Enrollment Center 734-462-4426.

8 Pay Tuition and Fees

- Your tuition and fees are payable in full the same day you register.
- The college accepts cash, checks (in person or online), money orders, VISA, MasterCard, Discover, and debit cards.
- Another option is our tuition payment plan, which allows for tuition to be paid in installments.
- To use financial aid for tuition and fees, you need to have completed the Financial Aid process.
- Cashier's Office 734-462-4449.

9 Attend Class

THE SC NO-CLASSES-CANCELLED GUARANTEE

- ✔ **If the class has students registered, it will run.**
- ✔ **New sections are added to meet demand; see the latest course listings at www.schoolcraft.edu/schedules or through WebAdvisor.**

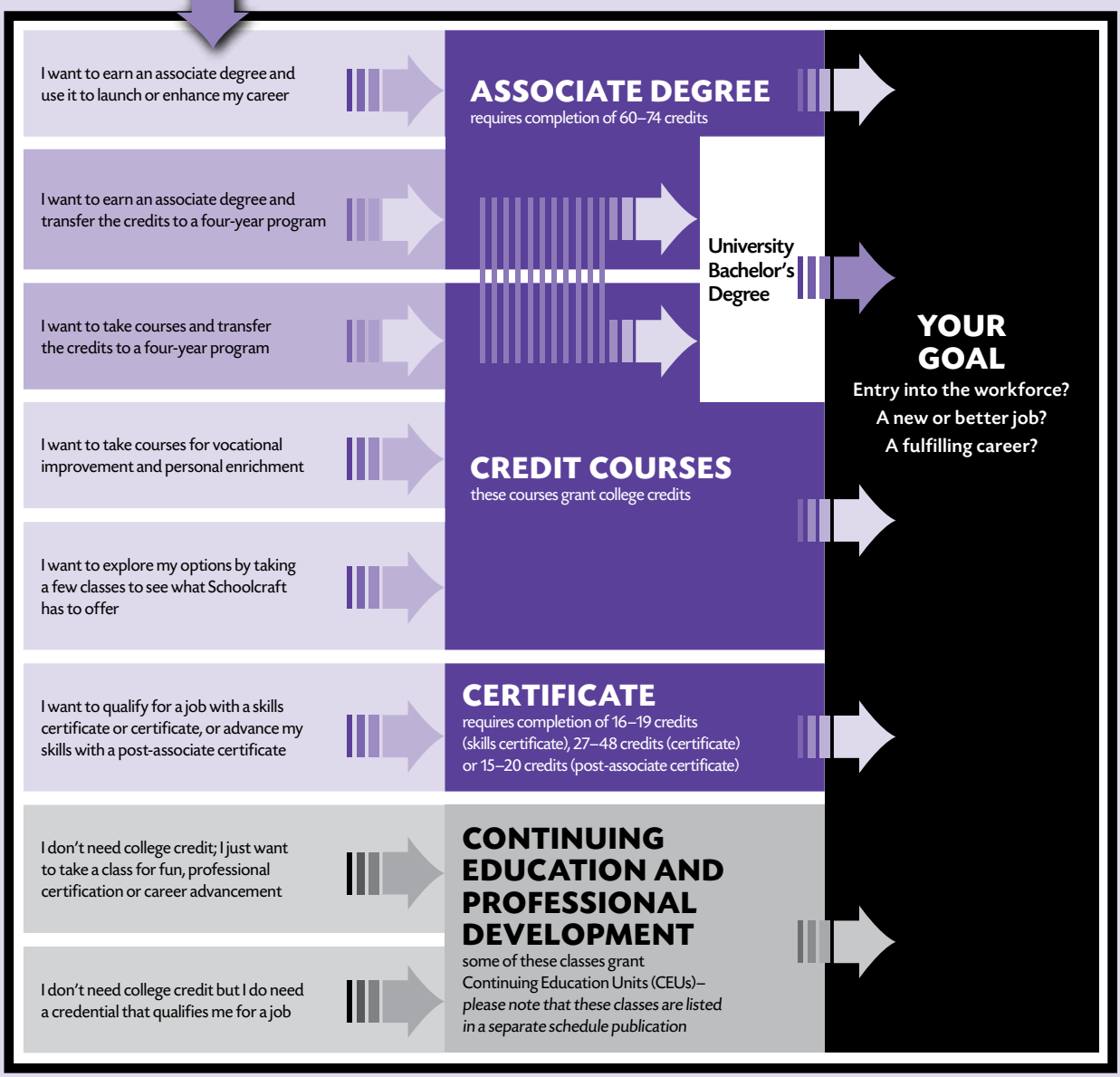
Read more about the guarantee at www.schoolcraft.edu/schedules.

NO LAST-MINUTE CANCELLATIONS— YOU CAN COUNT ON IT!

DISCOVER Schoolcraft

what do YOU want to do?

Follow your Path



take the next step

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

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

Departments and Programs

Students can choose from more than 60 different areas of study at Schoolcraft College. In addition, Schoolcraft offers a variety of paths by which students can pursue their education and career goals.

Skills certificates average five or six courses, requiring 16–19 credit hours. Most skills certificates can be completed in only one or two semesters of full-time study.

Certificates average 10–12 courses, requiring 27–48 credit hours, depending on the program. By attending Schoolcraft College full-time, students can earn a certificate in as little as two or three semesters. Most credits earned for a certificate can also be applied to an associate degree in the same, or a similar, area of study.

Associate degrees average 20–22 courses, requiring 60–74 credit hours, depending on the program. Associate degrees generally take four or five semesters of full-time study, or approximately two years to complete. Career program degrees are designed to prepare students for employment upon completion of their associate degree. Transfer associate degrees, which are offered in several areas of study, are designed to prepare those students who plan to transfer to a four-year college or university after completing their coursework at Schoolcraft College.

Post-associate certificates average five or six courses, requiring an average of 15 credit hours. They can generally be completed in one or two semesters of full-time study. A student may enter a post-associate program after earning an associate degree from any accredited college and provides the degree holder with advanced job skills.

Courses are offered in a number of subject areas to 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.

Note: *The codes listed in the chart below represent Program Codes that are used in the application process and as a part of a student's academic record at Schoolcraft College.*

Departments and Programs	Skills certificate: requires approximately 16–19 credit hours	Certificate: requires approximately 27–48 credit hours	Associate/Transfer degree: requires approximately 60–74 credit hours	Post-associate certificate: requires approximately 15+ credit hours	Courses only
Accounting		1YC.00001	AAS.00005		
Accounting for Small Business	CRT.00365				
Allied Health Education					✔
Anthropology			‡		✔
Arabic			‡		✔
Art and Design			‡		✔
Aviation Management	CRT.00302		AAS.00261		
Biology			‡		✔
Biomedical Engineering Technology •			AAS.00128	PAC.00178	
Broadcast Communications (in conjunction with Specs Howard School of Broadcasting)			AAS.00041		
Business		1YC.00002	AAS.00008		
Business—Marketing and Applied Management			AAS.00009		
Business—Small Business for Entrepreneurs		1YC.00213	AAS.00011		
Business Information Technology		1YC.00242	AAS.00277		
Business Transfer *May be applicable in such areas as Accounting, Computer Information Systems, Finance, Human Resource Management, International Business, Management and Marketing.*			AA.00500		
Chemistry			‡		✔
Child Care and Development	CRT.00315	1YC.00031	AAS.00020		
Child Care and Development—Special Needs Paraprofessional		1YC.00032	AAS.00021		
Chinese			‡		✔
College and Beyond					✔
Collegiate Skills					✔

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your counselor or academic advisor 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 Admissions and Enrollment Center at 734-462-4426 for more information.

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

Departments and programs list continued ➔

Departments and Programs continued	Skills certificate: requires approximately 16–19 credit hours	Certificate: requires approximately 27–48 credit hours	Associate/Transfer degree: requires approximately 60–74 credit hours	Post-associate certificate: requires approximately 15+ credit hours	Courses only
Communication Arts			‡		✔
Computer Aided Design—Mechanical			AAS.00170		
Computer Aided Drafting—Technical		1YC.00119			
Computer Graphics Technology				PAC.00181	
Computer Graphics Technology—3D Animation		1YC.00136			
Computer Graphics Technology—3D and Video Graphics			AAS.00028		
Computer Graphics Technology—Digital Art		1YC.00136	AAS.00028		
Computer Graphics Technology—Foundation	CRT.00364				
Computer Graphics Technology—Graphic Design			AAS.00028		
Computer Graphics Technology—Interactive Media and Game Design		1YC.00136	AAS.00028		
Computer Graphics Technology—Publishing		1YC.00136			
Computer Graphics Technology—Video Graphics		1YC.00136			
Computer Graphics Technology—Web Design		1YC.00136			
Computer Information Systems				PAC.00155	
Computer Information Systems—Introductory		1YC.00004			
Computer Information Systems—Microcomputer Support Technician			AAS.00014		
Computer Information Systems—Networking Technology Integration		1YC.00270			
Computer Information Systems—Programming	CRT.00366		AAS.00012		
Computer Information Systems—Web Specialist		1YC.00241	AAS.00275		
Computer Service Technician		1YC.00159			
Correctional Science					✔
Cosmetology Management			AAS.00010		
Criminal Justice			AAS.00086		
Criminal Justice with Academy			AAS.00086		
Culinary Arts •		1YC.00079	AAS.00087		
Culinary Baking and Pastry Arts •		1YC.00247			
Culinary Management					✔
Design					✔
Economics			‡		✔
Education Transfer *May be applicable in such areas as Elementary and Special Education.*			AA.00700		
Electronic Technology	CRT.00320	1YC.00125	AAS.00120		
Emergency Medical Technology Paramedic •		1YC.00024	AAS.00250		
Engineering Transfer *May be applicable in such special engineering areas as Chemical, Civil, Computer Systems, Electrical, Environmental, Industrial, Manufacturing, Materials Science, Mechanical and Sustainability.*			AE.00039		
English			‡		✔
English as a Second Language					✔
Environmental Studies		1YC.00276	AAS.00176		
Fire Technology		1YC.00149	AAS.00177		
Fire Technology with Academy			AAS.00177		
French			‡		✔
Geography			‡		✔
Geology			‡		✔
German			‡		✔

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your counselor or academic advisor 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 Admissions and Enrollment Center at 734-462-4426 for more information.

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

Departments and programs list continued ➔

Departments and Programs continued	Skills certificate: requires approximately 16–19 credit hours	Certificate: requires approximately 27–48 credit hours	Associate/Transfer degree: requires approximately 60–74 credit hours	Post-associate certificate: requires approximately 15+ credit hours	Courses only
Health Information Technology •			AAS.00153		
Health Information Technology—Coding Specialist •		1YC.00240			
Health Transfer *May be applicable in such health and science specialties as Biology, Chemistry, Dental Hygiene, Nursing, Occupational Therapy, Pre-Dental, Pre-Medicine, Pre-Pharmacy, Pre-Physical Therapy and Pre-Physician Assistant.*			AA.00600		
History			‡		✔
Homeland Security			AAS.00252		
Human Development Services					✔
Humanities			‡		✔
Italian			‡		✔
Learning Resources					✔
Liberal Arts Transfer *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.*			AA.00042		
Manufacturing—Advanced Manufacturing	CRT.00337	1YC.00237	AAS.00135		
Massage Therapy •		1YC.00255	AAS.00266		
Mathematics			‡		✔
Medical Assisting •		1YC.00026			
Medical Assisting—Medical Biller/Receptionist	CRT.00350				
Medical Assisting—Phlebotomy	CRT.00325				
Medical Assisting—Physician Office Medical Transcription	CRT.00330				
Medical Transcription •		1YC.00029			
Metallurgy and Materials Science		1YC.00124	AAS.00184	PAC.00179	
Music—Foundations		1YC.00162			
Music—Intermediate		1YC.00163			
Music—Piano Teacher		1YC.00115			
Nursing •		1YC.00017	AAS.00000		
Nursing Assistant Training Program •	CRT.00321				
Office Information Systems	CRT.00370	1YC.00166	AAS.00133		
Philosophy			‡		✔
Physical Education					✔
Physics			‡		✔
Political Science			‡		✔
Psychology			‡		✔
Quality Management					✔
Sociology			‡		✔
Sound Recording Technology		1YC.00144	AAS.00244		
Spanish			‡		✔
Theatre			AA.00042		
Welding—Fabrication		1YC.00127			
Welding—Joining Technology			AAS.00082		
Associate Degree Seeking, Undecided			00800		
Transfer Degree Seeking, Undecided			00801		
Non-Degree Seeking (Federal financial aid is not available for this program code)			00900		

Most of the associate degree programs offered by Schoolcraft College are transferable to four-year colleges and universities. Consult with your counselor or academic advisor 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 Admissions and Enrollment Center at 734-462-4426 for more information.

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

APPLY TODAY!

Applying online is fast and easy.

Just follow the directions below and you will be on your way to becoming a student at Schoolcraft College. Your social security number is required to apply online.

1. Go to the Schoolcraft Web site, **www.schoolcraft.edu**.
2. Select "Online Application," which can be found on the upper left-hand side of the home page.
3. Complete the "Application for Admission" form.
4. Check the box at the bottom of the page to activate your electronic signature. Select "Submit."

Need assistance?

If you require assistance or do not have access to a computer, please call the Admissions and Enrollment Center at 734-462-4426.

Congratulations!

You have completed the first step in becoming a student at Schoolcraft College. Within the next week you will receive your acceptance letter in the mail. Please keep this letter as it will contain your student number, which you will need to do just about everything at Schoolcraft.

High School, GED or College Transcript Request

Electronic transcript requests through www.docufide.com are the fastest and easiest way to have your transcripts sent to Schoolcraft College.

OR

***First year students**—Send your high school transcripts and/or GED scores to the Admissions and Enrollment Center, or fax to 734-462-4553.*

***Transfer students**—Request that your official college transcripts be sent directly from the transfer institution to:*

Schoolcraft College
Admissions and Enrollment Center
18600 Haggerty Road
Livonia, MI 48152-2696

Registration Dates and Procedures

Winter 2012

Assigned Registration Start Times

Assigned registration start times make it easier for students close to graduation to register for classes, while reducing the burden on the system for the benefit of all students. The system permits students to register based on their total number of credits.

Credits are calculated at the end of the Summer 2011 semester.

Need a Hand with Registration?

Help will be available in the Admissions and Enrollment Center. See page 10 for more information.

Active students have taken a class and earned a credit in one or more semesters from Winter 2010 through Summer 2011 OR are currently enrolled in Fall 2011

Cumulative credits* earned through the Summer 2011 semester	Register online on or after the date listed below
Active students with 50 or more credits	Saturday, November 12 at 7 a.m.
Active students with 40–49 credits	Saturday, November 12 at 11 a.m.
Active students with 30–39 credits	Saturday, November 12 at 3 p.m.
Active students with 20–29 credits	Saturday, November 12 at 7 p.m.
Active students with 10–19 credits	Sunday, November 13 at 7 a.m.
Active students with 1–9 credits	Sunday, November 13 at 11 a.m.

***Schoolcraft earned hours and transfer credits awarded as of the end of Summer 2011 are included in this total. Classes in progress and transfer credits pending evaluation are not included.**

To see your cumulative credits, log in to your WebAdvisor account at https://webadvisor.schoolcraft.edu.

Any student can register	Sunday, November 13 at 3 p.m.

Registration approval

Current and former students in good standing may select their own classes. New students with no previous college experience or those interested in limited or restricted enrollment programs must meet with a counselor/advisor before registering. Call 734-462-4429 for additional information.

Students must also have a counselor approve their schedule if:

- they take more than 18 credit hours in fall or winter semesters;
- they take more than 8 credit hours in spring or summer sessions;
- they are on academic probation, dismissal or registration hold.

Consult WebAdvisor for the latest information on available sections.

Registration Dates and Procedures

Registration worksheet available on page 16.

HOW TO REGISTER

Step 1

Explore your options

Go to the WebAdvisor homepage at https://webadvisor.schoolcraft.edu and click on the *Student* menu. On that menu choose *Search for Classes*.

On the *Search for Classes* page you can search by course title, academic subject area, instructor last name, meeting days and times, and location (Livonia, Garden City, Public Safety Training Complex, off-campus, etc.). You will also see if seats are still available.

When you have found classes that work with your schedule, move on to Step 2.

Step 2

Register for classes

Registration is accomplished online. You may use your own computer or one of the computers available on campus, including those available in the Admissions and Enrollment Center (see 'Need a Hand with Registration?' section below).

You may register for classes until the first class meeting. After that, you must follow the schedule adjustment process on page 12.

Assigned registration start times begin Saturday, November 12 at 7 am. See page 9 for details.

Hours: Monday–Saturday, 2 am–11 pm;
Sunday, 2 am–9 pm (Sunday, November 13, 2 am–10 pm)

Instructions on how to log in and register are available at https://webadvisor.schoolcraft.edu.

Payment is due the day you register in accordance with Schoolcraft College's payment policy on page 12.

Online registration will be closed November 24–25, December 24–25, and December 31–January 1.

Admissions & Enrollment Center
registration@schoolcraft.edu 734-462-4426

Need a Hand with Registration?

You can visit or call the Admissions and Enrollment Center starting at 8 am, Monday, November 14. The Center has computers available for student use and helpful staff who would be happy to help you learn how to use WebAdvisor to register for your classes.

Office hours

Hours for November 14–December 22 (the college will be closed November 24–25 and December 24–January 2):

- Monday through Thursday: 8 am–6 pm
- Friday: 8 am–4:30 pm

Hours for January 3–20:

- Monday through Thursday: 8 am–7 pm
- Friday: 8 am–4:30 pm

How to reset your WebAdvisor password

If you have an email address on file, you can reset your password by following these instructions:

- Visit WebAdvisor: Click on *Reset My Password*.
- Type in your last name and either your Social Security number or your Schoolcraft ID number and click the submit button.
- Select your email address from the drop down screen.
- You will receive an email containing a temporary password.
- If you don't receive the message, check your SPAM mail as you may have a high security set in your email.
- Return to WebAdvisor to log on.

If you are experiencing problems or do not have an email on file, please call the Admissions and Enrollment Center at 734-462-4426.

Registration Dates and Procedures

Assigned registration start times begin Saturday, November 12 at 7 a.m. See page 9 for details.

WINTER 2012 IMPORTANT DATES

Class duration	Classes begin	Last day for schedule adjustments/refunds	Last day for W grade	Last day of classes	Final grades available
15 weeks	January 14	January 23	March 30	May 4	May 9
first 7 weeks	January 14	January 21	February 17	March 2	March 13
first 12 weeks	January 14	January 22	March 16	April 13	April 18
second 12 weeks	February 4	February 12	April 6	May 4	May 9
second 7 weeks	March 17	March 24	April 20	May 4	May 9
17 weeks	January 9	January 23	April 4	May 5	May 9
first 9 weeks	January 14	January 21	February 24	March 23	April 18
first 5 weeks	January 14	January 17	January 30	February 17	March 13
4 weeks	January 14	January 17	January 23	February 10	March 13
second 5 weeks	February 20	February 23	March 7	March 30	April 18
second 9 weeks	March 12	March 19	April 15	May 11	May 13
third 5 weeks	April 2	April 5	April 18	May 4	May 9

Final exams are given in the last week of class.
Call the Admissions and Enrollment Center at 734-462-4426 for dates on any class duration not listed above.

Open Entry/Open Exit classes	January 14: Orientations March 14: Last day for registration/refund March 30: Last day for W grade April 27: Last day of testing and homework due — must be completed by 9 pm	
Purchase books in campus bookstore	Winter 2012 semester books will be available for purchase December 5.	Students with loans, scholarships, grants, third party billing, etc. may charge books and supplies to their student account for the Winter 2012 semester December 19, 2011–January 20, 2012.
Deadline to apply for graduation/participate in commencement	March 2	
Last day for address changes that impact tuition	February 10	
Student holidays— *No classes.*	March 3–9: Spring Break April 8: Easter Sunday	

Winter 2012 Police Academy

Application deadline is November 17

Academy begins January 16

Call 734-462-4747 for more information

SPRING/SUMMER 2012 registration begins online March 31. Spring classes begin May 14. Summer classes begin July 7

Registration Dates and Procedures

Student Responsibilities

Students assume full responsibility for course selection and completion of prerequisites. Observe course prerequisites carefully—refer to pages 70–114 in this schedule.

Course Auditing

Students may enroll in courses for which they do not receive credit. The intention for an audit should be made known at the time of registration. Students declaring an audit must register in person. Full tuition and fees apply. A change from credit to audit after the registration period must be authorized through instructor/student consultation and instructor's written notification to the Admissions and Enrollment Center. Changes must be completed prior to the last day for a withdrawal grade. Any student auditing a class may participate as a regular enrolled student except that no final grade is issued.

Waitlist

Students who find that a specific section of a course is full can add their names to the waitlist for that section. If a spot in that section opens up, the next person on the waitlist is notified by email. The notification provides a deadline by which the student must register before the seat is offered to the next person on the list. Because waitlist notifications are delivered via email, all students are encouraged to update their profiles with their most up-to-date email address. For more information visit www.schoolcraft.edu/registration.

Payment

Tuition and fees are payable in full the same day you register, unless you are enrolled in our tuition payment plan. If you do not pay the day you register, you will be dropped for nonpayment. Use the chart on page 14 to calculate your tuition and fees. The college accepts cash, checks, money orders, VISA, MasterCard, Discover and debit cards. **Reminder: the Cashier's Office is closed on Saturdays and Sundays.**

Our tuition payment plan is an option which allows for tuition to be paid in installments from your savings or checking account automatically. For more details, see page 15 in this schedule, look for the e-Cashier icon under *Payment Options* at **https://webadvisor.schoolcraft.edu**, or call Student Accounts at 734-462-4586.

If your check is returned because of insufficient funds in your account, we may redeposit it electronically. Call the Cashier's Office at 734-462-4449 for information.

Refunds

Students can receive refunds by Direct Deposit. See *Bank Info—Direct Deposit* under the Financial Information heading in the WebAdvisor student menu to select this refund option.

Schedule Adjustment

Schedule adjustment will take place during the week that classes begin. Students cannot use WebAdvisor to register once the course is full or has already met for the first time.

Late Entry: Students wishing to enter a class after it has met for the first time need written approval from the instructor, even if seats are available. Not all instructors accept late entry; OE/OE courses cannot be added after the last day for OE/OE registration.

Overload: Students who want to try and overload into a full class can attempt to do so from the time the waitlists are purged, which is typically just before the start of a semester, through the end of the schedule adjustment period. Students must obtain written approval from the instructor to overload. Not all instructors accept overloads.

How to get overload/late entry consent

1. Contact the instructor. A Faculty and Academic Directory is on the Web site under the Quick Links tab.
2. Obtain consent in one of the two ways described below (you do not need both):
   - Instructors can email you directly, or us at registration@schoolcraft.edu, from their Schoolcraft email account.

     OR

   - Get an overload/late entry form from the Admissions and Enrollment Center and have your instructor sign it.
3. Register for your class(es) by bringing the consent to the Admissions and Enrollment Center within **two business days** of receipt to enroll. If your instructor issued consent via email, please print the email which shows the sent address and bring it with you.

Drop from Classes with a Withdrawal Grade

Withdrawal from class(es) may affect financial aid eligibility for current and future semesters.

- Students may withdraw from a class online using WebAdvisor on or before the last date for withdrawal (W grade will be issued). Withdraw deadlines vary depending on the start date of the course and length of the section. Refer to page 11 in this schedule for deadline dates.
- Students do not receive refunds for classes from which they have withdrawn.
- Nonattendance does not represent a withdrawal. You are responsible for classroom activity until you officially withdraw.

Financial Aid—What You Need to Know

Office of Financial Aid
finaid@schoolcraft.edu
734-462-4433

Financial Aid

Grants, scholarships, work-study and loans are available to qualified students.

- Grants do not have to be repaid and are based primarily on demonstrated financial need.
- Scholarships do not have to be repaid and are primarily based on academic achievement.
- Work-study students are placed in jobs on campus and their wages are paid in part by the work-study program.
- Student loans are borrowed money and require repayment. Students need to complete the Free Application for Federal Student Aid (FAFSA) before a loan can be considered.

The FAFSA is available online at **www.fafsa.gov**. Guest and non-degree seeking students are not eligible for financial aid. Class attendance is required to receive financial aid.

Students who are awarded financial aid can view their award letter online. Log in to WebAdvisor at https://webadvisor.schoolcraft.edu and click on the *Student* menu. Additional information is also available under *Financial Aid*.

Financial Aid is applied to the student's account each semester based on the start date of the class. For example, if the student has three (3) credits which begin at the start of the semester and three (3) credits which start later in the semester, financial aid funds will not be released until after the start date of the last class. However, the classes will not be dropped for non-payment during that period.

Buying Books with Financial Aid Funds

Students with financial aid in excess of tuition and fee charges will have a credit balance available to them at the Schoolcraft Bookstore. Students can have their books and necessary supplies charged at the Schoolcraft Bookstore utilizing this credit balance. Financial aid book purchase dates are available at www.schoolcraftbooks.com.

Note: Students registering for a late starting class (including OE/OE) after financial aid bookstore dates have ended and/or financial aid credit balances have been released will not be able to use their financial aid at the Schoolcraft Bookstore. The student will need to purchase their books out-of-pocket at this time.

Financial Aid Credit Balances

Remaining credit balances after book purchases and tuition charges are paid will be refunded to the student after the fourth week of the semester. Financial Aid refunds will be processed on a weekly basis after this time.

Financial Aid refunds are not issued until a review of the student's eligibility and class attendance is verified. If you are registered for a late starting class (second 12-week, second 7-week, or OE/OE class), changes in enrollment status due to dropping classes or withdrawing after the 100% tuition refund period for that class can result in refund delays or a reduction in the student's financial aid. **The student may be responsible for repaying financial aid refunds and/or tuition costs.**

The scenarios listed below could cause you to lose your financial aid eligibility and potentially cause you to owe a balance.

- If you **do not** drop your classes, officially withdraw from your classes, never attend, or just stop attending, you will be responsible for all charges resulting from the loss of your financial aid.
- If you are registered for a second 12-week, second 7-week or OE/OE course, a course withdrawal made after the 100% refund period for that course may decrease your award and cause you to owe money.
- Dropping courses or completely withdrawing from Schoolcraft College may affect both your current financial aid award and your eligibility for future financial aid assistance.

If you have questions, please contact the Office of Financial Aid **before** dropping or withdrawing from courses to discuss your plans and the potential consequences.

Student Loans (Federal Direct Stafford Loans)

To receive a student loan the student must do the following:

- Submit a Federal Direct Loan request form: www.schoolcraft.edu/aid
- Complete Entrance Counseling: www.studentloans.gov
- Complete a Master Promissory Note: www.studentloans.gov
- Register for at least six (6) credit hours

Note: If the student has a combination of 15-week, 12-week and 7-week classes, half-time enrollment is determined based on the start date of the last class. For example, if the student has three (3) credits starting in August and three (3) credits starting in October, the loan will not pay out until October when the student reaches half-time enrollment.

For additional information, please see the Schoolcraft College 2011–12 Catalog.

Tuition & Fees for Winter 2012

Tuition and fees are due in full on the day you register, unless enrolled in our payment plan.

	Credit Hours	Resident Tuition	Non-Resident Tuition	Out-of-State & International Tuition	Registration Fee	Service Fee	Instructional Equip. Fee
Less Than Half Time	0.5	42.00	61.50	90.50	40.00	10.00	2.00
	1	84.00	123.00	181.00	40.00	10.00	4.00
	2	168.00	246.00	362.00	40.00	10.00	8.00
	3	252.00	369.00	543.00	40.00	10.00	12.00
	4	336.00	492.00	724.00	40.00	10.00	16.00
	5	420.00	615.00	905.00	40.00	10.00	20.00
Half Time	6	504.00	738.00	1,086.00	40.00	10.00	24.00
	7	588.00	861.00	1,267.00	40.00	10.00	28.00
	8	672.00	984.00	1,448.00	40.00	10.00	32.00
Three Quarter Time	9	756.00	1,107.00	1,629.00	40.00	10.00	36.00
	10	840.00	1,230.00	1,810.00	40.00	10.00	40.00
	11	924.00	1,353.00	1,991.00	40.00	10.00	44.00
Full Time	12	1,008.00	1,476.00	2,172.00	40.00	10.00	48.00
	13	1,092.00	1,599.00	2,353.00	40.00	10.00	52.00
	14	1,176.00	1,722.00	2,534.00	40.00	10.00	56.00
	15	1,260.00	1,845.00	2,715.00	40.00	10.00	60.00
	16	1,344.00	1,968.00	2,896.00	40.00	10.00	64.00
	17	1,428.00	2,091.00	3,077.00	40.00	10.00	68.00
	18	1,512.00	2,214.00	3,258.00	40.00	10.00	72.00
Counselor Approval Required	19	1,596.00	2,337.00	3,439.00	40.00	10.00	76.00
	20	1,680.00	2,460.00	3,620.00	40.00	10.00	80.00

To determine your tuition and fees

Locate the number of credit hours you have selected. Add the credit hour tuition, registration fee, service fee, instructional equipment fee, and course fees if applicable.*

Example: 9 credits as a resident

Tuition	$756.00
Registration Fee (per semester)	40.00
Service Fee (per semester)	10.00
Instructional Equipment Fee	36.00
Course Fees (if applicable)	*
Total Payment Due	$842.00

Senior Adult Tuition

Individuals 60 years or older save 50 percent of the **resident** tuition rate. Required fees, however, must be paid. 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 Admissions & Enrollment Center, (main campus), Continuing Education and Professional Development office, or at 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.

Example: 3 credits as nonresident senior

Tuition	$369.00
Less 50 percent of $252.00 resident rate	-126.00
Total adjusted tuition	243.00
Registration Fee (per semester)	40.00
Service Fee (per semester)	10.00
Instructional Equipment Fee	12.00
Course Fees (if applicable)	*
Total Payment Due	$305.00

* Check the class schedule and add course fees if applicable.

College District Residency and Verification

The college district includes the public school districts of Clarenceville, Garden City, Livonia, Northville, Plymouth-Canton, and part of Novi. The college verifies a student's residency each semester. To receive resident tuition rates, proof of residency will be required at the time of admission and registration. We accept the following items as proof of resident status: valid driver's license or state ID with current address, copy of lease, property tax receipt or other proof the college finds acceptable. See page 11 for residency change dates which impact tuition.

Company Paid Tuition/Fees

The college will invoice companies for students' tuition, fees, books and supplies if authorized by the employer in the form of a purchase order, voucher, or letter of authorization. A current authorization needs to be on file with Student Accounts each semester prior to registration. Contact Student Accounts, 734-462-4586, for additional information.

Refunds

Students will receive a refund if they drop a class **by the last day of schedule adjustment.** Refund timeframes vary depending on the length of the course. See page 11 for refund dates. Credit card payments will be credited to the account used for payment. All other refunds will be issued to the student by check or direct deposit. See Bank Info—Direct Deposit under the Financial Information heading in the WebAdvisor student menu to select the direct deposit refund option. Allow four weeks after the last day of schedule adjustment to receive your refund.

You don't have to pay your tuition all at once

You can:

Make a down payment on your tuition.

Pay the balance in 1, 2 or 3 monthly payments.

Use a credit card or automatic bank payment.

How to sign up

1. Register for your classes.
2. Go to https://webadvisor.schoolcraft.edu, choose *Students* and then *Log In*.
3. Under *Registration*, choose *Pay Balance*.
4. Choose your payment option from the menu and then proceed.

eCashier

look for the eCashier logo

What to have with you when you sign up

1. Your seven-digit student number, date of birth and email address.
2. The name and address of the person responsible for making the payments.
3. Bank or credit card account information of the person responsible for making the payments. Credit cards accepted are American Express, MasterCard and Discover.
4. If paying by automatic bank payments, you will need the bank name, telephone number, account number, and the bank routing number. Most of this information is located on your check.
5. If paying by credit card, you will need the credit number and expiration date.

Important Dates

Winter 2012

Assigned registration start times begin November 12, 2011.			
Number of payments	Months of payments	Required down payment	Last day to enroll in payment plan
3	Dec., Jan., Feb.	25%	Nov. 21
2	Jan., Feb.	40%	Dec. 21
1	Feb. only	50%	Jan. 24

Spring & Summer 2012

Assigned registration start times begin March 31, 2012.			
Number of payments	Months of payments	Required down payment	Last day to enroll in payment plan
2	May, June	40%	April 24
1	June only	50%	May 21

Questions? Call Student Accounts at 734-462-4586.

Registration Worksheet

YEAR _____ ❑ SUMMER ❑ FALL ❑ WINTER ❑ SPRING

Ready to register?

Registration is done online at https://webadvisor.schoolcraft.edu

- Use the grid below to help you plan your class schedule.
- You can search for course offerings without logging in to WebAdvisor. Go to the *Prospective Students* menu and select *Search for Classes*.
- Log in to WebAdvisor, go to the *Students* menu and under *Registration* select *Am I ready to register?*
  - ✔ Verify and update your personal information.
  - ✔ Check your academic program. If a change is needed, locate the *Academic Program Change Form* under *Academic Planning* in the *Students* menu. Submit the completed form to the Admissions and Enrollment Center. This change will not prevent you from registering.
  - ✔ Check restrictions to be sure you can register.
- Tuition and fees are due in full the same day you register, or be enrolled in our payment plan.

Need Help Registering?
Refer to page 10 or online at www.schoolcraft.edu for more information and instructions.

What do I need to register?

Student #/User ID ___ ___ ___ ___ ___ ___ ___ ___
Lower case first initial followed by your student number

Have your WebAdvisor password available.
Refer to page 10 or online at www.schoolcraft.edu for password help.

Classes not held on the Livonia campus are indicated by the following Building/Room code:
RC=Radcliff Center—Garden City GC=Garden City Extension—Garden City PSTC=Public Safety Training Complex—Livonia

DEPT. & COURSE #	SECTION # (SIX DIGITS)	COURSE TITLE	CREDIT HOURS	CAMPUS

Class Schedule Planning Grid It may be helpful for you to first block off days and times you can't attend classes

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
6–7 a.m.						
7–8 a.m.						
8–9 a.m.						
9–10 a.m.						
10–11 a.m.						
11–noon						
noon–1 p.m.						
1–2 p.m.						
2–3 p.m.						
3–4 p.m.						
4–5 p.m.						
5–6 p.m.						
6–7 p.m.						
7–8 p.m.						
8–9 p.m.						
9–10 p.m.						
10–11 p.m.						

College Services

Children's Center

734-462-4442

The Children's Center provides child care and instruction year-round for children six weeks through Kindergarten. Interested families may call for more information about this nationally accredited program. Drop-off care is not available.

Open Computer Labs

Livonia Campus: McDowell Center room 100
734-462-4400, ext. 5147 (information) or ext. 5529 (hours)

Radcliff Center: room 140
734-462-4400, ext. 6112 (information) or ext. 5529 (hours)

Schoolcraft College provides two open computer labs for students working on course assignments and academic research. Students must present a Schoolcraft student ID or current schedule for admittance to computer labs and must abide by posted lab rules and guidelines regarding computer use.

Wireless Internet Access

Wireless service is currently available at Radcliff Center and on the Livonia campus in the following buildings:

- Applied Sciences
- Biomedical Technology Center
- Bradner Library
- Liberal Arts, Forum
- VisTaTech Center
- Waterman Wing

Wireless accounts will have Internet access only, not access to the internal Schoolcraft network. Visit **http://faq.schoolcraft.edu** for more information on wireless, including instructions on how to get an account.

BOOKSTORES

Livonia 734-462-4409 **Radcliff Center 734-462-4778**

Online store at www.schoolcraftbooks.com

Owned and operated by Schoolcraft College, the bookstores stock new and used textbooks, school supplies, computers, software, Schoolcraft College clothing, gift items and more. Textbook costs are available on the bookstore Web site.

Books for the Winter 2012 semester will be available for purchase beginning December 5. The Bookstore will be closed March 3–9 during Spring Break.

Students with loans, scholarships, grants, third party billing, etc. may charge books and supplies to their student account for the Winter 2012 semester December 19–January 20.

visit our **TECHZONE**

for software, electronics and computers— located inside the Livonia Campus Bookstore

Authorized Campus Store

Bring your current class schedule with you as it must be presented to purchase textbooks or software.

Student Success—Resources to Support You

Counseling Center

McDowell Center
734-462-4429

Provides the following services:

- Counselors/advisors available to all students.
- Counseling/advising for new students with no previous college experience or those interested in limited or restricted enrollment programs.
- Counseling/advising for students with registration holds.
- Assistance for students interested in transferring out to a college or university.
- Programs for individuals to develop their personal, educational, social, career and life goals.

Testing Center

McDowell Center
734-462-4806

Walk-in testing for placement, ability to benefit, distance learning and classroom makeup tests. Testing by appointment for CLEP, DANTES, GED, MTELP and TEAS.

Learning Assistance Center

Bradner Library
734-462-4436

Academic skills advising, workshops and free drop-in and online tutoring. Additional services include:

Faculty Facilitators

One-on-one help from learning professionals with expertise in study and test-taking strategies, math skills, note taking and time management.

International Student Services

Academic support and tutoring to enhance English language skills.

Peer Assisted Learning (PAL)

Instructor-selected former students help current students with course work, assignments and exam preparation.

University Bound

Seminars, university visits, career guidance and academic support for students planning to transfer to a four-year college.

Writing Fellows

Students trained to assist other students with written assignments. They do not write or edit papers, but provide direction to improve the quality of written work. Writing Fellows are available in the Learning Assistance Center and online.

Libraries

Bradner Library 734-462-4440
Radcliff Center Library 734-462-4400 ext 6020

Bradner and Radcliff Center Libraries feature electronic databases, areas for individual and collaborative study, and expert librarians to provide hands-on research assistance. In addition, Bradner Library has wireless Internet access, high-speed data ports and an atrium lounge with vending area.

Transition Center

McDowell Center
734-462-4443

Incorporates the services of the Women's Resource Center, Adult Student Services, Family Resources, and Veterans Services. Open to all students and community members; services are not gender specific. Volunteer peer counselors are available for both walk-in and telephone clients, and are specially trained to listen to and assist clients who wish to:

- Enter or re-enter college.
- Research new career possibilities.
- Find referrals for services or information.
- Talk through difficult situations.

Career and Transfer Center

McDowell Center
734-462-4421

A comprehensive array of services and resources available to help students learn about career, employment, and transfer options. Services include:

Career and Employment Services

- Career counseling.
- Assistance in finding part- or full-time employment.
- Career and job fairs.
- Resumé writing and interviewing assistance.
- On-campus jobs.

Transfer Services and Resources

Transfer guides, special agreements, online admission applications and scholarship information are now available online at www.schoolcraft.edu/transfer. For questions about transferring, students can contact an academic advisor or a counselor in the Counseling Center

Disability/Accessibility Services

Services to assist students who have or may have disability related issues in education. Services may include counseling, referral for evaluation, academic counseling, academic accommodations, and referrals to appropriate organizations in the community.

Student Activities Office

VisTaTech Center, Lower Waterman Wing
734-462-4422

With more than 20 student-run clubs and organizations, students have the opportunity to develop leadership skills, organize campus-wide events and interact with the community. A sampling of the organizations include:

- The Student Activities Board.
- The Phi Theta Kappa Honor Society.
- *Connection*, the award-winning student newspaper.
- Student-interest clubs organized around art, music, nursing, feeding the hungry, culinary arts and international relations.

General Information

Cancelled Classes
Schoolcraft College reserves the right to cancel any class for a valid reason.
- Students are contacted to select another class or request a refund. Refund checks are mailed to the student.
- The college may change the day, time or location of classes.

Classes cancelled on a one-time basis during the semester due to instructor illness, etc. will be listed on the *Cancellations & Closings* link on our Web site.

Weather
For college closings due to weather or other emergencies, listen to major area radio or TV stations for updates, or check the *Cancellations & Closings* link on our Web site. Weather conditions may vary widely, even over a small geographic area. You must exercise your own judgment with regard to safety, whether the college remains open or closes.

Kiosks
Kiosks are electronic information centers located in many college buildings that provide college information and individual student schedules.

Health Insurance for Students
Sickness and accident insurance is available for full- and part-time students. Information on this program is available in student service offices in the McDowell Center and at www.schoolcraft.edu/services/health.asp.

Voter Registration
Forms for voter registration are available from the Registration area of our Web site. Please exercise your right to vote.

Drug Free
Federal Drug Free Schools and Communities Act Amendments of 1989 require that colleges receiving federal funds develop a program to prevent the use of illicit drugs and alcohol by students and employees. Consistent with local, state and federal laws, Schoolcraft College will impose sanctions or seek legal remedy against students or employees who unlawfully possess, use, or distribute illicit drugs and alcohol on college property or as part of any college activity.

Family Educational Rights and Privacy Act of 1974 (FERPA)
Written consent of the student is required for the college to disclose education records or personal information. Students have the right to review their own education records. Consult the college catalog or Web site for further information.

COMMUNICATE, SHARE & CONNECT
with Schoolcraft College

www.facebook.com/SchoolcraftCollege

www.youtube.com/SchoolcraftCollege

twitter.com/schoolcraftnow

Nondiscrimination Clause
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 excluded from participating in, be denied benefits of, or be subjected to discrimination during any program or activity or in employment.

Student Consumer Contact Information
Information is located on the college Web site, in the catalog and individual offices as indicated below:
- College costs, refunds, withdrawals, academic programs: Admissions and Enrollment Center, 734-462-4426.
- Student privacy and rights under Family Education Rights and Privacy Act (FERPA): Student Records, 734-462-4677.
- Student loans, deferments, available financial assistance and return of Title IV funds: Office of Financial Aid, 734-462-4433.
- Services for students with disabilities: Career and Transfer Center, 734-462-4421.
- Campus security report and crime statistics: www.schoolcraft.edu/cleryact or Campus Security Police Department, 734-462-4424.
- Accreditation and licensing: Office of Instruction, 734-462-4451.
- Athletic program participation rates and financial support, completion/graduation rate and, if applicable, transfer out rate: Institutional Research Office, 734-462-4454.

You Have Worked Hard
You Have Earned Your Degree
But, *You Won't Get Your Degree Unless You Apply for It*

A certificate or degree is your entry to a better job and a higher salary. If you're transferring to a four-year institution, an associate degree tells your university that you are a serious student who sets goals and follows through.

WINTER 2012 GRADUATES

By March 2, 2012 you must see your counselor to fill out an Intent to Graduate form.

SPRING AND SUMMER 2012 GRADUATES

Students who will be completing their degrees in Spring or Summer 2012 should visit www.schoolcraft.edu/graduation for more information on participating in the commencement ceremony and applying for graduation.

Commencement Ceremony

May 5, 2012 ***Compuware Arena***

- **Winter 2011 Graduates:** Fill out your Intent to Graduate form by March 2, and pick up your cap and gown at the Grad Fair.
- **Spring and Summer 2012 Graduates:** For information on participating in the commencement ceremony and applying for graduation visit www.schoolcraft.edu/graduation. Pick up your cap and gown at the Grad Fair.

Grad Fairs

Monday, April 9 at the Livonia Campus
Wilson Room in the VisTaTech Center Waterman Wing
9 am–6 pm

Thursday, April 12 at Radcliff Center, Garden City
Heritage Room
9 am–noon & 5–8 pm

Visit www.schoolcraft.edu/graduation for updated information on graduation, including important deadlines and details on the Grad Fairs.

Learning Options—Make Any Time Class Time

Quick list of alternate learning options

This schedule includes a column heading titled "Learning Options," to identify courses that offer an alternative to the traditional classroom experience. See pages 21–29 for information on these learning options:

ONLINE
Internet-based courses.

OE/OE
Open Entry/Open Exit offers maximum flexibility to start and finish courses.

HYBRID
Traditional classroom instruction combined with flexible online delivery.

Online Courses

For more information
dl@schoolcraft.edu 734-462-4532

Online courses offer new opportunities and challenges to Schoolcraft College students. You can take an online course when and where it is convenient for you and still have opportunities to interact with your instructor and other students. You will cover the same learning objectives you would in a traditional on-campus course.

If you are an independent learner, highly self-motivated and interested in accelerating your course of study, online learning may be appropriate for you. Since the coursework can be completed any time of the day or night, it is ideal for those who are unable to attend classes in the evenings or on weekends. However, if you cannot set and maintain a schedule which allows you to keep up with your coursework assignments, it is likely you will fall behind. In that case, online learning may not be a good option.

Earn your entire associate degree online or select from an array of individual online courses in numerous academic disciplines. Most courses are well-suited for transfer to a four-year college or university. See a counselor to get more details on the transferability of individual courses.

WINTER online courses become available on their official start dates:

- 15-week courses: January 14
- second 12-week courses: February 4
- second 7-week courses: March 17.

Students can access an orientation to the course management system, Blackboard, at **www.schoolcraft.edu/bb/help** prior to the start of class. This orientation will guide the student on how to access their course on Blackboard and will also provide instructions on the technical features of the course management system.

General hardware and software requirements along with a link to any course specific requirements are at **www.schoolcraft.edu/sysreq**. Books can be purchased at the Livonia campus bookstore or online at www.schoolcraftbooks.com.

For more information call 734-462-4532 or send an email to dl@schoolcraft.edu. The Distance Learning Office is located in the McDowell Center, room 305.

Winter 2012 Online Courses

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Instructor	Fee	Pre Req
WINTER ONLINE COURSES - 7 Weeks - Begins 01/14/2012 Ends 03/02/2012								
Intro Healthcare	ONLINE	AHE	101	112356	1	Harper E	$30	
Microsoft Office 2010	ONLINE	CIS	120	112323	3	Szabo S	$30	P
Culinary Sanitation	ONLINE	CAP	102	112420	2	Musto S	$30	
English Composition 1	ONLINE	ENG	101	112967	3	Addi O	$30	P
English Composition 2	ONLINE	ENG	102	112389	3	Harris M	$30	P
Intro Art & Music	ONLINE	HUM	106	112304	1	Aquila D	$30	
	ONLINE	HUM	106	112333	1	Aquila D	$30	
Survey of American Government	ONLINE	POLS	105	112972	3	Thomson A	$30	

Winter 2012 Online Courses

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Instructor	Fee	Pre Req
WINTER ONLINE COURSES - 7 Weeks - Begins 03/17/2012 Ends 05/04/2012								
Intro Healthcare	ONLINE	AHE	101	112423	1	Harper E	$30	
Intro Computer Based Systems	ONLINE	CIS	115	112377	3	Schlick W	$30	P
Microsoft Office 2010	ONLINE	CIS	120	112336	3	Szabo S	$30	P
Culinary Sanitation	ONLINE	CAP	102	112412	2	Musto S	$30	
English Composition 1	ONLINE	ENG	101	112371	3	Addi O	$30	P
English Composition 2	ONLINE	ENG	102	112947	3	Harris M	$30	P
Intro Art & Music	ONLINE	HUM	106	112903	1	Staff	$30	
	ONLINE	HUM	106	112360	1	Giacchina K	$30	
Survey of American Government	ONLINE	POLS	105	112363	3	Thomson A	$30	
WINTER ONLINE COURSES - 12 Weeks - Begins 02/04/2012 Ends 05/04/2012								
Intro Accounting	ONLINE	ACCT	103	112357	4	Randall M	$30	
Principles of Accounting 1	ONLINE	ACCT	201	112388	4	Hill M	$30	
Aviation Law	ONLINE	AVM	201	112451	3	Greenblatt D	$30	
Airport Planning & Mgmt	ONLINE	AVM	203	112449	3	Lafleur M	$30	
Basic Biology	ONLINE	BIOL	050	112422	4	Orick M	$30	
Health Education	ONLINE	BIOL	103	112466	3	Butkevich N	$30	
Basic Human Anatomy & Phys	ONLINE	BIOL	105	112406	4	Abbas M	$30	P
Basic Human Nutrition	ONLINE	BIOL	114	112419	1	Butkevich N	$30	
Nutrition	ONLINE	BIOL	115	112454	3	Butkevich N	$30	
Intro Business	ONLINE	BUS	101	112479	3	Trembath D	$30	
Operating Small Business	ONLINE	BUS	104	112957	3	Ontko S	$30	
Advertising	ONLINE	BUS	122	112383	3	Ontko S	$30	
Business Ethics	ONLINE	BUS	202	112403	3	Mellnick G	$30	
Personal Finance	ONLINE	BUS	204	112446	3	Mellnick G	$30	
Business Law 1	ONLINE	BUS	207	112399	3	Thomson A M	$30	
Business on the Web	ONLINE	BUS	215	112459	3	Mellnick G	$30	P
Business Management	ONLINE	BUS	217	112395	3	Mellnick G	$30	P
Supervision	ONLINE	BUS	220	112478	3	Matthews J	$30	
Fundamentals of Speech	ONLINE	COMA	103	112343	3	Moylan M	$30	
Intro Computer Based Systems	ONLINE	CIS	115	112483	3	McPherson D	$30	P
Microsoft Office 2010	ONLINE	CIS	120	112325	3	Szabo S	$30	P
Intro Corrections	ONLINE	COR	110	112475	3	Hummer H	$30	
Juvenile Justice	ONLINE	CJ	221	112301	3	Cramb R	$30	
English Composition 1	ONLINE	ENG	101	112302	3	Addi O	$30	P
English Composition 2	ONLINE	ENG	102	112387	3	Ditouras H	$30	P
	ONLINE	ENG	102	112994	3	Lindenberg A	$30	P
Ancient World	ONLINE	HIST	134	112391	4	Thomson A	$30	
Humanities Through Arts	ONLINE	HUM	215	112476	3	Nissen J	$30	
Prealgebra	ONLINE	MATH	047	112373	3	Mingela A	$30	P
Beginning Algebra	ONLINE	MATH	053	112425	4	Bearden L	$30	P
Business Mathematics	ONLINE	MATH	101	112428	3	Kavanaugh E	$30	P
Intermediate Algebra	ONLINE	MATH	113	112310	4	Stetson B	$30	P
	ONLINE	MATH	113	112490	4	Kavanaugh E	$30	P
Intro Astronomy	ONLINE	PHYS	104	112999	4	Wood C	$90	P
Survey of American Government	ONLINE	POLS	105	112384	3	Oxley R	$30	
Human Relations	ONLINE	PSYCH	153	112923	3	Baker S	$30	
	ONLINE	PSYCH	153	112335	3	Hoffmann W	$30	
Intro Psychology	ONLINE	PSYCH	201	112374	4	Pilgrim C	$30	P
Life Span Developmental Psych	ONLINE	PSYCH	229	112486	4	Regner D	$30	P
	ONLINE	PSYCH	229	112390	4	Regner D	$30	P
Abnormal Psychology	ONLINE	PSYCH	239	112964	3	Hoffmann W	$30	P
	ONLINE	PSYCH	239	112492	3	Johnson K	$30	P
Principles of Sociology	ONLINE	SOC	201	112942	3	Schaumann K	$30	
WINTER ONLINE COURSES - 15 Weeks - Begins 01/14/2012 Ends 05/04/2012								
Intro Accounting	ONLINE	ACCT	103	112353	4	Randall M	$30	
Principles of Accounting 1	ONLINE	ACCT	201	112331	4	Mellnick G	$30	
	ONLINE	ACCT	201	112367	4	Hill M	$30	
Principles of Accounting 2	ONLINE	ACCT	202	112368	4	Griffith R	$30	P
	ONLINE	ACCT	202	112381	4	Griffith R	$30	P
Intro Anthropology	ONLINE	ANTH	112	112372	3	Worden-Ballard J	$30	
Intro Archaeology	ONLINE	ANTH	117	112359	3	Reeds J	$30	
Myth Magic & World Religions	ONLINE	ANTH	211	112386	3	Worden-Ballard J	$30	P
Art History 2	ONLINE	ART	116	112320	4	Nissen J	$30	
Art Appreciation	ONLINE	ART	201	112332	3	Nissen J	$30	
	ONLINE	ART	201	112338	3	Nissen J	$30	

* new course P=prerequisite C=corequisite Refer to pages 36–80 for course requirements.

Winter 2012 Online Courses

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Instructor	Fee	Pre Req
Aviation History	ONLINE	AVM	102	112702	3	Bopp C	$30	
Aviation Maintenance Mgmt	ONLINE	AVM	202	112722	3	Coop F	$30	
Basic Biology	ONLINE	BIOL	050	112306	4	Orick M	$30	
	ONLINE	BIOL	050	112417	4	Gray S	$30	
Health Education	ONLINE	BIOL	103	112309	3	Cook S	$30	
	ONLINE	BIOL	103	112362	3	Orick M	$30	
Conservation Natural Resources	ONLINE	BIOL	104	112311	3	McNutt C	$30	
Basic Human Anatomy & Phys	ONLINE	BIOL	105	112308	4	Butkevich N	$30	P
	ONLINE	BIOL	105	112409	4	Cook S	$30	P
	ONLINE	BIOL	105	112411	4	Abbas M	$30	P
Basic Human Nutrition	ONLINE	BIOL	114	112414	1	Butkevich N	$30	
Nutrition	ONLINE	BIOL	115	112303	3	Golovoy N	$30	
	ONLINE	BIOL	115	112337	3	Golovoy N	$30	
Intro Business	ONLINE	BUS	101	112319	3	Mellnick G	$30	
	ONLINE	BUS	101	112328	3	Feldbauer J	$30	
	ONLINE	BUS	101	112342	3	Feldbauer J	$30	
Organizing Small Business	ONLINE	BUS	103	112313	3	Ontko S	$30	
Operating Small Business	ONLINE	BUS	104	112315	3	Ontko S	$30	
Strategic Selling	ONLINE	BUS	120	112456	3	Ontko S	$30	
Advertising	ONLINE	BUS	122	112326	3	Ontko S	$30	
Business Ethics	ONLINE	BUS	202	112402	3	Mellnick G	$30	
Personal Finance	ONLINE	BUS	204	112444	3	Mellnick G	$30	
Personal Investing	ONLINE	BUS	205	112405	3	Mellnick G	$30	
Business Law 1	ONLINE	BUS	207	112334	3	Vitori K	$30	
	ONLINE	BUS	207	112345	3	Thomson A M	$30	
Business on the Web	ONLINE	BUS	215	112385	3	Mellnick G	$30	P
Business Management	ONLINE	BUS	217	112347	3	Mellnick G	$30	P
Supervision	ONLINE	BUS	220	112379	3	Ontko S	$30	
Principles of Marketing	ONLINE	BUS	226	112346	3	Feldbauer J	$30	P
Human Resource Management	ONLINE	BUS	230	112730	3	Feldbauer J	$30	P
International Business	ONLINE	BUS	240	112484	3	Ontko S	$30	
Foundations of Early Childhood	ONLINE	CCD	102	112317	3	Grace E	$30	
Child Development	ONLINE	CCD	116	112318	3	Baker-Reed S	$30	
Child With Special Needs	ONLINE	CCD	216	112716	3	Staff	$90	
Student Success	ONLINE	CAB	101	112457	3	Fichtenberg C	$30	
Fundamentals of Speech	ONLINE	COMA	103	112408	3	Bowers A	$30	
	ONLINE	COMA	103	112926	3	Bowers A	$30	
Interpersonal Communications	ONLINE	COMA	200	112906	3	Bowers A	$30	P
History Graphic Design	ONLINE	CGT	161	112432	3	Staff	$30	
Intro Computer Based Systems	ONLINE	CIS	115	112324	3	Staff	$30	P
Microsoft Office 2010	ONLINE	CIS	120	112404	3	Zaccone L	$30	P
	ONLINE	CIS	120	112344	3	Ellis T	$30	P
	ONLINE	CIS	120	112392	3	Ellis T	$30	P
Microsoft Excel 2010	ONLINE	CIS	180	112780	3	Ellis T	$30	P
Intro Corrections	ONLINE	COR	110	112973	3	Cavan P	$30	
Org Adm Law Enforce Agencies	ONLINE	CJ	102	112339	3	Cramb R	$30	
Intro Security	ONLINE	CJ	104	112407	3	Saffold J	$30	
	ONLINE	CJ	104	112440	3	Wicker A	$30	
Intro Criminal Justice System	ONLINE	CJ	113	112981	3	Scott T	$30	
	ONLINE	CJ	113	112482	3	Scott T	$30	
Criminal Law & Procedure	ONLINE	CJ	211	112902	3	Kirshner B	$30	
Criminology	ONLINE	CJ	212	112912	3	Skrocki A	$30	
Juvenile Justice	ONLINE	CJ	221	112900	3	Cramb R	$30	
Culinary Nutrition	ONLINE	CAP	241	112340	2	Mercer S	$30	
	ONLINE	CAP	241	112341	2	Mercer S	$30	
Principles of Macroeconomics	ONLINE	ECON	201	112908	4	Nag P	$30	P
	ONLINE	ECON	201	112931	4	Nag P	$30	P
	ONLINE	ECON	201	112934	4	Nag P	$30	P
Principles of Microeconomics	ONLINE	ECON	202	112927	4	Howie C	$30	P
	ONLINE	ECON	202	112952	4	Howie C	$30	P
Statics	ONLINE	ENGR	201	112462	3	Zaccone L	$30	P
Communication Skills	ONLINE	ENG	100	112913	3	Hewelt B	$30	
English Composition 1	ONLINE	ENG	101	112945	3	Schuett F	$30	P
	ONLINE	ENG	101	112955	3	Maheshwari A	$30	P
	ONLINE	ENG	101	112365	3	Chaudhery S	$30	P
	ONLINE	ENG	101	112991	3	Addi O	$30	P

Winter 2012 Online Courses

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Instructor	Fee	Pre Req
English Composition 2	ONLINE	ENG	102	112943	3	Schuett F	$30	P
	ONLINE	ENG	102	112948	3	Ditouras H	$30	P
	ONLINE	ENG	102	112958	3	Rybicka E	$30	P
	ONLINE	ENG	102	112963	3	Rybicka E	$30	P
	ONLINE	ENG	102	112975	3	Ditouras H	$30	P
	ONLINE	ENG	102	112993	3	Chaudhery S	$30	P
	ONLINE	ENG	102	112995	3	Lindenberg A	$30	P
Business English	ONLINE	ENG	106	112918	3	Maheshwari A	$30	P
	ONLINE	ENG	106	112941	3	Maheshwari A	$30	P
Intro Journalism	ONLINE	ENG	107	112986	3	Scott M	$30	P
Technical Writing	ONLINE	ENG	116	112951	3	Lindenberg A	$30	P
Intro Film	ONLINE	ENG	200	112907	4	Harris M	$30	P
Intro Literature Short Fiction	ONLINE	ENG	243	112930	3	Schuett F	$30	P
Amer Lit 19th Cent to Present	ONLINE	ENG	252	112980	3	Harris M	$30	P
Elementary French 1	ONLINE	FR	101	112354	4	Suess K	$30	
Elementary French 2	ONLINE	FR	102	112321	4	Suess K	$30	P
World Regional Geography	ONLINE	GEOG	133	112933	4	O'Connell D	$30	
	ONLINE	GEOG	133	112434	4	O'Connell D	$30	
Environmental Science	ONLINE	GEOG	212	112915	3	O'Connell D	$30	
Medical Terminology	ONLINE	HIT	104	112910	4	Scheller J	$30	
	ONLINE	HIT	104	112924	4	Scheller J	$30	
	ONLINE	HIT	104	112380	4	Scheller J	$30	
	ONLINE	HIT	104	112982	4	Scheller J	$30	
Pharmacology for Health Prof	ONLINE	HIT	114	112416	2	McLane P	$30	P
	ONLINE	HIT	114	112441	2	McLane P	$30	P
Ancient World	ONLINE	HIST	134	112961	4	Thomson A	$30	
Early Modern World	ONLINE	HIST	137	112916	4	Swope M	$30	
	ONLINE	HIST	137	112914	4	Thomson A	$30	
Contemporary World	ONLINE	HIST	138	112968	3	Swope M	$30	
Early America US History	ONLINE	HIST	151	112938	3	Derr C	$30	
19th Cent America US History	ONLINE	HIST	152	112932	3	Swope M	$30	
Contemporary America US Hist	ONLINE	HIST	153	112351	3	Derr C	$30	
Intro Homeland Security	ONLINE	HS	101	112316	3	Saffold J	$30	
Career Decision Making	ONLINE	HDS	110	112394	2	LaJoy M	$60	
Humanities Through the Arts	ONLINE	HUM	215	112936	3	Nissen J	$30	
Prealgebra	ONLINE	MATH	047	112971	3	McCoy M	$30	P
	ONLINE	MATH	047	112472	3	McCoy M	$30	P
Beginning Algebra	ONLINE	MATH	053	112922	4	Mingela A	$30	P
	ONLINE	MATH	053	112424	4	Mingela A	$30	P
	ONLINE	MATH	053	112988	4	Bearden L	$30	P
Business Mathematics	ONLINE	MATH	101	112426	3	Kavanaugh E	$30	P
	ONLINE	MATH	101	112427	3	Kavanaugh E	$30	P
	ONLINE	MATH	101	112430	3	Kavanaugh E	$30	P
Applications Utility of Math	ONLINE	MATH	111	112711	4	Stetson B	$30	P
	ONLINE	MATH	111	112713	4	Stetson B	$30	P
Intermediate Algebra	ONLINE	MATH	113	112954	4	Lazarski A	$30	P
	ONLINE	MATH	113	112959	4	Lazarski A	$30	P
	ONLINE	MATH	113	112979	4	Lazarski A	$30	P
	ONLINE	MATH	113	112481	4	Mingela A	$30	P
	ONLINE	MATH	113	112489	4	Zaccone L	$30	P
Music Appreciation	ONLINE	MUSIC	105	112925	3	Aquila D	$30	
	ONLINE	MUSIC	105	112939	3	Aquila D	$30	
Keyboarding 1	ONLINE	OIS	100	112960	2	Partyka P	$30	
Microsoft Word 2010	ONLINE	OIS	165	112904	3	Partyka P	$30	P
Advanced Microsoft Word 2010	ONLINE	OIS	265	112920	3	Partyka P	$30	P
Intro Philosophy	ONLINE	PHIL	243	112431	3	Oxley R	$30	
	ONLINE	PHIL	243	112937	3	Huston M	$30	
	ONLINE	PHIL	243	112398	3	Huston M	$30	
Ethical Problems	ONLINE	PHIL	277	112950	3	Huston M	$30	
Intro Astronomy	ONLINE	PHYS	104	112917	4	Wood C	$90	P
	ONLINE	PHYS	104	112962	4	Wood C	$90	P
	ONLINE	PHYS	104	112996	4	Holody P	$90	P
Survey of American Government	ONLINE	POLS	105	112944	3	Conway D	$30	
State & Local Government	ONLINE	POLS	109	112984	3	Thomson A	$30	
Human Relations	ONLINE	PSYCH	153	112447	3	Baker S	$30	
	ONLINE	PSYCH	153	112966	3	Baker S	$30	
	ONLINE	PSYCH	153	112970	3	Jackson L	$30	
	ONLINE	PSYCH	153	112989	3	Jackson L	$30	

* new course P=prerequisite C=corequisite Refer to pages 36–80 for course requirements.

Winter 2012 Online Courses

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Instructor	Fee	Pre Req
Intro Psychology	ONLINE	PSYCH	201	112946	4	Pilgrim C	$30	P
	ONLINE	PSYCH	201	112953	4	Pilgrim C	$30	P
	ONLINE	PSYCH	201	112369	4	Pilgrim C	$30	P
	ONLINE	PSYCH	201	112375	4	Koenigsknecht C	$30	P
	ONLINE	PSYCH	201	112976	4	Koenigsknecht C	$30	P
	ONLINE	PSYCH	201	112992	4	Pilgrim C	$30	P
Child Psychology	ONLINE	PSYCH	209	112905	3	Pilgrim C	$30	P
	ONLINE	PSYCH	209	112909	3	Johnson K	$30	P
Life Span Developmental Psych	ONLINE	PSYCH	229	112305	4	Regner D	$30	P
	ONLINE	PSYCH	229	112940	4	Regner D	$30	P
	ONLINE	PSYCH	229	112442	4	Regner D	$30	P
Abnormal Psychology	ONLINE	PSYCH	239	112439	3	Jackson L	$30	P
	ONLINE	PSYCH	239	112445	3	Jackson L	$30	P
	ONLINE	PSYCH	239	112350	3	Jackson L	$30	P
	ONLINE	PSYCH	239	112461	3	Jackson L	$30	P
	ONLINE	PSYCH	239	112465	3	Jackson L	$30	P
Principles of Sociology	ONLINE	SOC	201	112919	3	Oxley R	$30	
	ONLINE	SOC	201	112929	3	Moore J	$30	
	ONLINE	SOC	201	112450	3	Gutierrez L	$30	
	ONLINE	SOC	201	112987	3	Moore J	$30	
	ONLINE	SOC	201	112393	3	Schaumann K	$30	
Social Problems	ONLINE	SOC	205	112901	3	Kairis T	$30	P
Marriage & Family	ONLINE	SOC	209	112452	3	Gutierrez L	$30	
	ONLINE	SOC	209	112997	3	Kairis T	$30	
Elementary Spanish 1	ONLINE	SPAN	101	112438	4	Stichler S	$30	
	ONLINE	SPAN	101	112956	4	Gulledge K	$30	
Elementary Spanish 2	ONLINE	SPAN	102	112418	4	Gulledge K	$30	P

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- Outstanding faculty
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Transfer programs include:

- Business (for accounting, computer information systems, finance, human resource management, international business, management and marketing majors)
- Elementary education
- Engineering
- Health (for biology, dental hygiene, nursing, occupational therapy, pre-dental, pre-med, pre-pharmacy, pre-physical therapy, and pre-physician assistant majors)
- Liberal Arts

Special agreements are available with Central Michigan, Cleary, Davenport, Eastern Michigan, Ferris State, Franklin, Lawrence Technological, Madonna and Northwood Universities, University of Detroit Mercy and Walsh College.

Contact your counselor/advisor at 734-462-4429
or visit www.schoolcraft.edu/transfer for more information

More Learning Options—*Open Entry/Open Exit*

For more information 734-462-4588

Open Entry/Open Exit classes 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 attend no 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. The OE/OE Lab and Testing Center are located in the Biomedical Technology Center, room 120. Homework may be submitted via e-mail, through Blackboard and/or by using the designated OE/OE drop-off area. At least one on-campus assessment is required.

All course work must be completed by the date below.

General hardware and software requirements along with a link to any course specific requirements are at **www.schoolcraft.edu/sysreq**.

Last day to register or receive a refund is Wednesday, March 14, 2012.

Last day to withdraw is Friday, March 30, 2012.

Classes must be completed by Friday, April 27, 2012.

Homework and testing must be completed by 9 pm

All students registering for the OE/OE program must attend a **mandatory orientation** before beginning course work. Failure to attend orientation may result in the loss of financial aid.

- For students registering at the beginning of the semester, an on-campus orientation will be held on **Saturday, January 14**. See below for times and locations.
- Students who enroll after that date or who cannot attend the scheduled orientation must contact their instructor to arrange an orientation meeting. Contact information is available at **www.schoolcraft.edu/oeoe**.

For more information call 734-462-4588, send an email to oeoe@schoolcraft.edu or access information on the college's Web site at **www.schoolcraft.edu/oeoe**. The Open Entry/Open Exit Office is located in the Grote Administration Center, room 180.

Orientations for Winter 2012 Open Entry/Open Exit Courses—Saturday, January 14

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Orientation Date & Time		Building/ Room	Instructor	Fee	Pre Req
WINTER OE/OE COURSES - 15 Weeks - Begins 01/14/2012 Ends 04/27/2012											
Computer Based Acct Peachtree	OE/OE	ACCT	260	017714	3	1/14	1200-130	AS940	Brewer J	$30	P
Three Dimensional Design	OE/OE	ART	109	017700	3	1/14	900-1000	F370	Olson S	$30	P
Art History 2	OE/OE	ART	116	017704	4	1/14	100-200	BTC165	Ewing K	$30	
Basic Design 2	OE/OE	ART	126	017733	3	1/14	900-1000	F370	Olson S	$30	P
Art Appreciation	OE/OE	ART	201	017734	3	1/14	100-200	BTC100	Nissen J	$30	
Painting 2	OE/OE	ART	239	017702	3	1/14	1000-1100	F370	Olson S	$30	P
Health Education	OE/OE	BIOL	103	017765	3	1/14	800-900	BTC165	Vinod R	$30	
Basic Human Anatomy & Phys	OE/OE	BIOL	105	017738	4	1/14	1000-1130	BTC160	Taylor B	$30	P
Basic Human Nutrition	OE/OE	BIOL	114	017729	1	1/14	900-1000	BTC165	Vinod R	$30	
Nutrition	OE/OE	BIOL	115	017768	3	1/14	1000-1130	BTC165	Gray S	$30	
	OE/OE	BIOL	115	017769	3	1/14	1000-1130	BTC165	Gray S	$30	
Anatomy & Physiology Review	OE/OE	BIOL	240	017724	2	1/14	1130-100	BTC160	Taylor B	$30	P
Intro Business	OE/OE	BUS	101	017712	3	1/14	800-900	BTC100	Yee D	$30	
Strategic Selling	OE/OE	BUS	120	017715	3	1/14	800-900	BTC370	Simo T	$30	
Advertising	OE/OE	BUS	122	017718	3	1/14	800-900	BTC160	Trembath D	$30	
Personal Finance	OE/OE	BUS	204	017754	3	1/14	900-1000	BTC100	Yee D	$30	
Business Law 1	OE/OE	BUS	207	017771	3	1/14	800-900	BTC215	Vitori K	$30	
Business Law 2	OE/OE	BUS	208	017707	3	1/14	900-1000	BTC215	Vitori K	$30	P
Business Management	OE/OE	BUS	217	017705	3	1/14	900-1000	BTC370	Simo T	$30	P
Principles of Marketing	OE/OE	BUS	226	017722	3	1/14	900-1000	BTC170	Cardellio C	$30	P
Student Success	OE/OE	CAB	101	017776	3	1/14	1200-100	BTC370	Daiek D	$30	
Electronic Portfolio	OE/OE	COLLS	111	017706	1	1/14	1100-1200	BTC370	Daiek D	$30	
Fundamentals of Speech	OE/OE	COMA	103	017783	3	1/14	800-900	BTC145	Townsend K	$30	
Computer Orientation	OE/OE	CIS	105	017719	1	1/14	900-1000	AS610	Boron J	$30	
Intro Computer Based Systems	OE/OE	CIS	115	017720	3	1/14	900-1000	BTC255	Enteshary A	$30	P
Microsoft Office 2010	OE/OE	CIS	120	017713	3	1/14	1000-1130	AS610	Boron J	$30	P
	OE/OE	CIS	120	017777	3	1/14	1000-1130	AS600	Redmond C	$30	P
Microsoft Outlook	OE/OE	CIS	122	017774	2	1/14	900-1000	BTC245	Towner M	$30	P
Intro Programming Logic	OE/OE	CIS	129	017748	3	1/14	1000-1130	BTC255	Enteshary A	$30	
Microsoft Windows 7	OE/OE	CIS	170	017732	3	1/14	800-900	AS900	Baron T	$30	P
Intro Networking	OE/OE	CIS	171	017731	3	1/14	800-930	AS720	Schlick W	$30	P
	OE/OE	CIS	171	017779	3	1/14	800-930	AS720	Schlick W	$30	P

* new course P=prerequisite C=corequisite Refer to pages 36–80 for course requirements.

Orientations for Winter 2012 Open Entry/Open Exit Courses—Saturday, January 14

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Orientation Date & Time		Building/ Room	Instructor	Fee	Pre Req
Intro HTML	OE/OE	CIS	185	017737	3	1/14	800-900	BTC300	Ellis T	$30	
Advanced Microsoft Office 2010	OE/OE	CIS	215	017758	3	1/14	1000-1130	BTC245	Towner M	$30	P
Microsoft Access 2010	OE/OE	CIS	225	017740	3	1/14	900-1000	BTC300	Ellis T	$30	
Managing & Troubleshooting PCs	OE/OE	CIS	235	017710	3	1/14	1000-1130	AS720	Schlick W	$30	P
JavaScript	OE/OE	CIS	238	017745	3	1/14	1130-1230	BTC300	Ellis T	$30	P
IT Project Management	OE/OE	CIS	251	017727	3	1/14	1130-100	BTC245	Towner M	$30	P
Networking 1	OE/OE	CIS	265	017735	3	1/14	800-900	AS930	Baron TS	$30	P
Technical Programming	OE/OE	COMPS	126	017739	3	1/14	1000-1130	BTC300	Ellis T	$30	P
Communication Skills	OE/OE	ENG	100	017741	3	1/14	900-1000	BTC320	Rose K	$30	
English Composition 1	OE/OE	ENG	101	017701	3	1/14	1130-100	BTC320	Maheshwari A	$30	P
	OE/OE	ENG	101	017786	3	1/14	1130-100	BTC320	Maheshwari A	$30	P
English Composition 2	OE/OE	ENG	102	017703	3	1/14	1000-1130	BTC320	Fletcher D	$30	P
	OE/OE	ENG	102	017762	3	1/14	1000-1130	BTC320	Fletcher D	$30	P
Business English	OE/OE	ENG	106	017746	3	1/14	1130-100	BTC350	Scott M	$30	P
Creative Writing	OE/OE	ENG	205	017785	3	1/14	900-1000	BTC350	Jannot Jr K	$30	P
Creative Writing	OE/OE	ENG	206	017787	3	1/14	900-1000	BTC350	Jannot Jr K	$30	P
Intro Literature Short Fiction	OE/OE	ENG	243	017750	3	1/14	100-200	BTC350	Scott M	$30	P
Soil Mechanics	OE/OE	ENVR	107	017708	4	1/14	900-1000	F350	O'Connell D	$120	P
Environmental Law	OE/OE	ENVR	206	017773	3	1/14	1000-1100	F350	O'Connell D	$30	
Geographic Methods Applied	OE/OE	ENVR	235	017789	3	1/14	800-900	F350	O'Connell D/Oetzel K	$30	P
World Regional Geography	OE/OE	GEOG	133	017791	4	1/14	100-200	F350	Closson K	$30	
Environmental Science	OE/OE	GEOG	212	017730	3	1/14	1100-1200	F350	O'Connell D	$30	
Water Resources	OE/OE	GEOG	217	017751	3	1/14	1200-100	F350	O'Connell D	$30	P
Ancient World	OE/OE	HIST	134	017723	4	1/14	1130-100	BTC200	McDonald P	$30	
Contemporary America US Hist	OE/OE	HIST	153	017726	3	1/14	100-200	BTC200	McDonald P	$30	
Intro Art & Music	OE/OE	HUM	106	017752	1	1/14	1000-1130	BTC215	Rice K	$30	
	OE/OE	HUM	106	017793	1	1/14	1000-1130	BTC215	Rice K	$30	
Art of Being Human	OE/OE	HUM	210	017772	3	1/14	1130-100	BTC215	Rice K	$30	
	OE/OE	HUM	210	017794	3	1/14	1130-100	BTC215	Rice K	$30	
Humanities Through the Arts	OE/OE	HUM	215	017795	3	1/14	1000-1130	BTC170	Giacchina K	$30	
Business Mathematics	OE/OE	MATH	101	017755	3	1/14	100-200	BTC255	Kavanaugh E	$30	P
Basic Materials Music Theory	OE/OE	MUSIC	104	017743	3	1/14	900-1000	F300	Derian J	$30	
Keyboarding 1	OE/OE	OIS	100	017744	2	1/14	1000-1200	AS930	Manigault K	$30	
Keyboarding 2	OE/OE	OIS	102	017749	2	1/14	900-1000	AS940	Haynes C	$30	P
Office Communication & Editing	OE/OE	OIS	105	017742	3	1/14	1200-100	BTC145	Murphy S	$30	P
Time & Project Management	OE/OE	OIS	195	017753	1	1/14	100-200	BTC145	Murphy S	$30	
Office Procedures	OE/OE	OIS	255	017709	2	1/14	1000-1130	BTC145	Holman C	$30	P
Principles of Sociology	OE/OE	SOC	201	017728	3	1/14	1130-100	AS710	Jubenville L	$30	
	OE/OE	SOC	201	017756	3	1/14	1130-100	AS710	Jubenville L	$30	

Orientations for Winter 2012 Open Entry/Open Exit Courses—Tuesday, January 17

Course Title	Learning Options	Dept. & Course #		Section	Credit Hours	Orientation Date & Time		Building/ Room	Instructor	Fee	Pre Req
WINTER OE/OE COURSES - 15 Weeks - Begins 01/14/2012 Ends 04/27/2012											
Survey of American Government	OE/OE	POLS	105	017716	3	1/17	600-700 PM	BTC165	Thomson A M	$30	

More Learning Options—*Hybrid*

For more information 734-462-4525

Hybrid classes—the best of both worlds

Are you considering an online class?

Do you enjoy the familiarity of traditional classrooms?

If you are curious to try them both…*together*…

enroll in a hybrid class.

Hybrid classes 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.

www.schoolcraft.edu/hybrid has more information, including the dates and times the course will meet on campus as well as the instructor listed for each class. You can click on the instructor's name to e-mail any questions you have about the course. The first class session is held on campus. See the classroom session dates listed below.

Hardware and software requirements for hybrid classes are listed at **www.schoolcraft.edu/sysreq**.

For more information, call 734-462-4525, send an e-mail to hybrid@schoolcraft.edu or log on the college Web site at **www.schoolcraft.edu/hybrid**.

Classroom Sessions for Winter 2012 Hybrid Courses

Course Title & On-campus Meetings	Learning Options	Alt. Location	Dept. & Course #	Section	Credit Hours	Days	Time	Building/ Room	Instructor	Fee	Pre Req
WINTER HYBRID COURSES - 3 Weeks - Begins 01/14/2012 Ends 02/02/2012											
Intro Prof Cooking Skills	HYBRID		CAP 103	117830	5	S	700-524	VT620	Musto S/Staff	$60	P
						T R	500-1024 PM	VT620	Musto S/Staff		
Every Tuesday, Thursday and Saturday, 1/14 – 2/2.											
WINTER HYBRID COURSES - 15 Weeks - Begins 01/14/2012 Ends 05/04/2012											
General Biology	HYBRID		BIOL 101	117806	4	F	800-1154	F270	Taylor B	$180	P
Every Friday, 1/20–5/4, except 3/9.											
General Biology	HYBRID		BIOL 101	117824	4	M	100-454	F170	McNutt C	$180	P
Every Monday, 1/16–4/30, except 3/5.											
Human Anatomy & Physiology	HYBRID		BIOL 236	117826	5	F	900-1154	F250	Abbas M	$135	P
Every Friday, 1/20–5/4, except 3/9.											
Prin Human Anatomy Phys 2	HYBRID		BIOL 238	117820	4	T	100-354	BTC135	Butkevich N	$115	P
Every Tuesday 1/17–5/1, except 3/6.											
Prin Human Anatomy Phys 2	HYBRID		BIOL 238	117837	4	R	100-354	BTC135	Butkevich N	$115	P
Every Thursday 1/19–5/3, except 3/8.											
Microbiology	HYBRID		BIOL 243	117849	4	W	1200-354	BTC210	Abbas M	$180	P
Every Wednesday, 1/18–5/2, except 3/7.											
Basic Chemistry	HYBRID		CHEM 051	117812	4	M	100-154	F120	Dickson P	$135	P
						M	200-354	F200	Dickson P		
Every Monday, 1/16–4/30, except 3/5.											
School Age Child Care	HYBRID		CCD 115	117870	3	M	600-854 PM	LA240	Flynn-Hahn D	$25	PC
1/23, 2/6, 2/20, 3/12, 3/26, 4/9, 4/23.											
Infant & Toddler Care	HYBRID		CCD 118	117866	3	R	600-854 PM	LA240	Grace E	$25	PC
1/19, 2/2, 2/16, 3/1, 3/22, 4/12, 4/26, 5/3.											
Child Care Practicum 1	HYBRID		CCD 150	117838	3	T	900-1054	LA410	Grace E	$25	P
						TBA	TBA	TBA	Grace E		
1/17, 1/24, 1/31, 2/21, 3/13, 3/27, 4/10, 5/1.											
Child Care Practicum 2	HYBRID		CCD 150	117839	3	T	400-554	LA240	Grace E	$25	P
						TBA	TBA	TBA	Grace E		
1/17, 1/24, 1/31, 2/21, 3/13, 3/27, 4/10, 5/1.											
CDA Assessment Prep	HYBRID	RC	CCD 155	217868	1	T	600-807 PM	RC310	Baker-Reed S	$25	P
1/17, 1/31, 2/14, 2/28, 3/13, 3/27, 4/10, 4/24.											
Child Care Practicum 2	HYBRID		CCD 200	117840	3	M	400-554	LA240	Flynn-Hahn D	$25	P
						TBA	TBA	TBA	Flynn-Hahn D		
1/23, 2/6, 2/20, 3/12, 3/26, 4/9, 4/23.											
Op & Maint of Child Care Fac	HYBRID		CCD 214	117852	3	M	600-854 PM	LA230	Flynn-Hahn D		
1/30, 2/13, 2/27, 3/19, 4/2, 4/16, 4/30.											
Practicum 2 Special Ed Focus	HYBRID		CCD 218	117841	3	R	400-554	LA230	Schade C	$25	P
1/19, 2/2, 2/16, 3/1, 3/15, 3/29, 4/12, 4/26.											
Tool Die & Fixture Design	HYBRID		DSGN 250	117800	4	T	230-524	AS379	Fox T	$140	
Every Tuesday, 1/17 – 5/1, except 3/6.											
Intro Medical Terminology	HYBRID	RC	HIT 100	217860	2	M	600-754 PM	RC480	Harper E		
1/16, 1/30, 2/13, 2/27, 3/12, 3/26, 4/16.											

* new course P=prerequisite C=corequisite Refer to pages 36–80 for course requirements.

Classroom Sessions for Winter 2012 Hybrid Courses

Course Title & On-campus Meetings	Learning Options	Alt. Location	Dept. & Course #	Section	Credit Hours	Days	Time	Building/ Room	Instructor	Fee	Pre Req
Intro Medical Terminology	HYBRID	RC	HIT 100	217863	2	W	630-824 PM	RC485	Harper E		
1/18, 2/1, 2/15, 2/29, 3/14, 3/28, 4/18.											
Principles of Hlth Info Mgmt	HYBRID	RC	HIT 109	217851	3	M	600-754 PM	RC465	Shaffer E	$70	
						M	800-954 PM	RC465	Shaffer E		
1/16, 1/23, 2/13, 2/27, 4/9, 4/23, 4/30.											
Health Info Tech Seminar	HYBRID	RC	HIT 213	217817	1	R	300-354	RC465	Scheller J		C
1/19, 2/2, 2/23, 3/22, 4/5, 4/26.											
Organization & Management	HYBRID	RC	HIT 219	217811	2	M	1200-254	RC465	Shaffer E	$70	PC
1/16, 1/23, 2/13, 2/27, 4/9, 4/23, 4/30.											
Organization & Management	HYBRID	RC	HIT 219	217819	2	R	1200-254	RC465	Scheller J	$70	PC
1/19, 2/2, 2/23, 3/22, 4/5, 4/26.											
Clinical Affiliation 3	HYBRID	RC	HIT 258	217812	2	T	900-454	RC485	Scheller J	$240	PC
						T	TBA	OFCHOSP	Scheller J		
1/17, 1/24, 1/31, 4/24, 5/1.											
Clinical Affiliation 3	HYBRID	RC	HIT 258	217818	2	F	900-454	RC485	Scheller J	$240	PC
						TBA	TBA	TBA	Scheller J		
1/20, 1/27, 2/10, 2/24, 3/16, 3/30, 4/13, 4/27.											
Theory & Fundamentals	HYBRID	RC	MAS 101	217814	2	F	900-1054	RC275	Paholsky K		C
1/20, 2/3, 2/10, 2/17, 3/16, 3/23, 3/30, 4/6, 4/13, 4/20, 5/4.											
Fund Anatomy & Physiology	HYBRID	RC	MAS 103	217815	4	F	1200-354	RC275	Paholsky K		C
1/20, 2/3, 2/10, 2/17, 3/16, 3/23, 3/30, 4/6, 4/13, 4/20, 5/4.											
Intermediate Massage Appl	HYBRID	RC	MAS 104	217855	5	T	600-954 PM	RC275	Paholsky K	$220	PC
						S	900-1054	RC275	Paholsky K		
Tuesdays: 1/17, 1/24, 1/31, 2/7, 2/14, 2/21, 2/28, 3/13, 3/20, 3/27, 4/3, 4/10, 4/17, 4/24, 5/1.											
Saturdays: 1/14, 1/21, 1/28, 2/4, 2/11, 2/18, 2/25, 3/10, 3/17, 3/24, 3/31, 4/7, 4/14, 4/21, 4/28.											
Systems Support Movement	HYBRID	RC	MAS 109	217856	5	R	600-954 PM	RC275	Paholsky K	$100	PC
1/19, 1/26, 2/2, 2/9, 2/16, 2/23, 3/1, 3/15, 3/22, 3/29, 4/5, 4/12, 4/19, 4/26, 5/3.											
Medical Insurance Coding	HYBRID	RC	MA 134	217813	3	M	300-554	RC485	Rubio P		C
1/16, 1/23, 2/6, 2/13, 2/27, 3/19, 3/26, 4/9, 4/23, 4/30.											
Medical Office Procedures	HYBRID	RC	MA 140	217820	3	W	1200-254	RC480	Donahee-Rader M		
1/18, 2/1, 2/15, 2/29, 3/21, 4/4, 4/18, 5/2.											
Physician Office Transcription	HYBRID	RC	MT 108	217816	2	S	1130-124	RC465	Taylor K	$30	P
1/14, 1/21, 1/28, 2/18, 3/24, 4/14.											
Survey of American Government	HYBRID		POLS 105	117804	3	T	930-1050	LA270	Thomson A		
Every Tuesday 1/17–5/1, except 3/6.											

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Earn a Global Endorsement with your Schoolcraft degree

Students who understand the global forces shaping their lives and the lives of people worldwide are better positioned for success in the 21st Century. This understanding can come only from exposure to a variety of cultures and from the study of the interdependence of all peoples and nations.

To make this global literacy available to all students, the Schoolcraft College International Institute offers a Global Endorsement. You can earn the endorsement by choosing 15 credits of specific global coursework (from Fall 2006 on) in your associate degree. There are 82 different classes across 21 academic disciplines, that make it easy for you to find courses that simultaneously meet your degree requirements and contribute to the global endorsement.

All sections of the courses listed below fulfill requirements for the Global Endorsement.

ANTH 112	CHIN 101	GEOG 133	HUM 106	PHIL 243
ANTH 117	CHIN 102	GEOG 236	HUM 150	POLS 207
ANTH 201	CM 107	GEOG 241	HUM 201	POLS 209
ANTH 211	CM 210	GER 101	HUM 202	SOC 201
ANTH 214	ENG 203	GER 102	HUM 203	SOC 205
ARB 101	ENG 243	GER 201	HUM 204	SOC 209
ARB 102	ENG 275	GER 202	HUM 210	SOC 210
ARB 201	ESL 100	HIST 134	HUM 215	SPAN 101
ARB 202	ESL 101	HIST 137	HUM 231	SPAN 102
ART 115	FR 101	HIST 138	HUM 232	SPAN 201
ART 116	FR 102	HIST 151	ITAL 101	SPAN 202
ART 201	FR 201	HIST 153	ITAL 102	
BUS 240	FR 202	HIST 230	MUSIC 164	

These specific sections for Winter 2012 have been internationalized to meet requirements for the Global Endorsement.

Course Title	Learning Options	Alt. Location	Dept. & Course #	Section	Credit Hours	Days	Time	Building/ Room	Instructor	Fee	Pre Req
12 Weeks - Begins 02/04/2012		**Ends 05/04/2012**									
Basic Design 1			ART 106	110251	3	T	600-938 PM	F370	Olson S	$35	
Design Concepts & Technology			CGT 109	119301	3	M	900-1238	VT440	Case C	$30	
			CGT 109	119300	3	M	200-538	VT440	Case C	$30	
15 Weeks - Begins 01/14/2012		**Ends 05/04/2012**									
Basic Design 1			ART 106	110206	3	W	100-354	F370	Olson S	$35	
Basic Design 2	OE/OE		ART 126	017733	3	See Pages 26-27			Olson S	$30	P
Painting 1			ART 236	110213	3	T	100-354	F470	Olson S	$35	P
Painting 2	OE/OE		ART 239	017702	3	See Pages 26-27			Olson S	$30	P
Operating Small Business			BUS 104	112609	3	T R	1030-1150	AS830	Ontko S		
	ONLINE		BUS 104	112315	3	See Pages 21-25			Ontko S	$30	
	ONLINE		BUS 104	112957	3	See Pages 21-25			Ontko S	$30	
Strategic Selling	OE/OE		BUS 120	017715	3	See Pages 26-27			Simo T	$30	
Advertising	ONLINE		BUS 122	112383	3	See Pages 21-25			Ontko S	$30	
English Composition 1	ONLINE		ENG 101	112955	3	See Pages 21-25			Maheshwari A	$30	P
English Composition 2			ENG 102	111422	3	T R	100-220	LA460	Berg S		P
			ENG 102	111423	3	T R	230-350	LA410	Berg S		P
Business English	ONLINE		ENG 106	112918	3	See Pages 21-25			Maheshwari A	$30	P
	ONLINE		ENG 106	112941	3	See Pages 21-25			Maheshwari A	$30	P
Intro Film			ENG 200	111431	4	T R	1100-1254	LA410	Berg S	$10	P
19th Cent America US History	ONLINE		HIST 152	112932	3	See Pages 21-25			Swope M	$30	
Survey of American Government			POLS 105	112013	3	F	1200-254	LA260	Nanian M		
		RC	POLS 105	216285	3	T	600-854 PM	RC485	Nanian M		

FOR MORE INFORMATION 734-462-4400 ext. 5271 • international@schoolcraft.edu • www.schoolcraft.edu/scii

* new course P=prerequisite C=corequisite Refer to pages 36–80 for course requirements.

Earn a Service Learning Endorsement

Schoolcraft College now offers a Service Learning Endorsement, which many employers view favorably when making hiring decisions. Linking academic courses to voluntarism benefits both students and the community. Through Service Learning, you will master course objectives, apply new learning skills in guided service opportunities and make a difference in the world. Volunteering with a community organization, unlike other types of homework assignments, enhances your learning through real-world experiences and application. To receive a Service Learning Endorsement, you must complete a minimum of 15 credit hours of classes designated as Academic Service Learning courses taken after spring semester 2008. To qualify as an Academic Service Learning course, students must spend a minimum of 15 hours of course time during the semester preparing for service, doing work with one or more community organizations, and assessing learning outcomes.

Here are some service partners and service projects our faculty work with:

- Friends of the Rouge: Fall Bug Hunt and Water Monitoring
- Canton Business and Professional Women: Middle School Reality Stores
- St. Leo's Soup Kitchen: The Empty Bowl Hunger Project
- North Wayne Red Wagon Literacy Project
- Schoolcraft College Food Pantry

All sections of the courses listed below fulfill requirements for the Service Learning Endorsement.

ACCT 238 Federal Individual Taxation
ENVR 231 Environmental Field Experience
GEOG 217 Water Resources
HUM 190 Individual Humanism—An Honors Colloquium
SOC 290 The Individual and Community—An Honors Capstone Course

These specific sections for Winter 2012 meet the requirements for the Service Learning Endorsement.

Course Title	Learning Options	Alt. Location	Dept. & Course #	Section	Credit Hours	Days	Time	Building/ Room	Instructor	Fee	Pre Req
15 Weeks - Begins 01/14/2012 Ends 05/04/2012											
General Biology		RC	BIOL 101	216025	4	T R	100-426	RC460	Bennett S	$180	P
Microbiology			BIOL 243	115398	4	M W M W	500-620 PM 700-854 PM	BTC200 BTC210	Muse W Muse W	$180	P
Children & Youth in Groups			CCD 211	110310	3	R	100-354	LA 240	Grace E		
English Composition 1			ENG 101	111304	3	T R	800-920	LA400	Schuett F		
			ENG 101	111324	3	T R	100-220	LA410	Chaudhery S		
English Composition 2			ENG 102	111404	3	T R	930-1050	LA300	Schuett F		
Business English			ENG 106	111425	3	M W	900-1020	LA300	Rybicka E		P
Intro Engineering & Technology			ENGR 100	113501	3	M W	1200-120	AS320	Ferman C		
Human Relations			PSYCH 153	112150	3	M	600-854 PM	LA360	Spolsky S		
		RC	PSYCH 153	216380	3	T	600-854 PM	RC245	Spolsky S		
Life Span Developmental Psych			PSYCH 229	112132	4	T R	800-954	LA230	Regner D		P
			PSYCH 229	112130	4	T R	1230-224	BTC100	Regner D		P
Intro to Social Work			SOC 101	111012	3	M	900-1154	LA230	Spolsky S		

FOR MORE INFORMATION 734-462-4400 ext. 5516 • servicelearning@schoolcraft.edu

Program Planning Chart

Projected Course Offerings by Semester

Key to Learning Options
- ● traditional
- ■ alternative
- ◘ traditional & alternative

Courses not listed are offered on an as-needed basis—contact the associate dean for information. Alternative classes are defined as Online, Open Entry/Open Exit or Hybrid—see pages 21–29. Course listings are subject to change. *Updated 9/11.*

		Fall	Winter	Spring	Summer
ACCT	103	◘	◘	◘	
	138	●	●		
	139		●		
	201	◘	◘	◘	
	202	◘	◘	◘	
	221	●			
	222		●		
	226	●			
	238		●		
	260		■		
	262	●		●	
	263	◘	●		
AHE	101	◘	◘	◘	
ANTH	112	◘	◘	◘	◘
	117	●	■		
	201	■	●	■	■
	211	◘	◘	●	■
	214	●	●		
ARB	101	●	●		
	102	●	●		
ART	105	●	●	●	●
	106	●	●	●	●
	109	■	■	●	
	113	●	●	●	
	115	◘	●	■	
	116	■	◘	■	
	118	●	●	●	●
	119	●	●	●	●
	125	■	●	●	
	126	■	■	●	
	201	◘	◘	◘	◘
	205	●	●		
	211	●	●	●	
	212	●	●	●	
	218	●	●	●	●
	219	●	●	●	●
	236	●	●		
	239	■	■		
	243	●	●		
	244	●	●		
AVM	101	■			
	102		■		
	103	■			
	104	■			
	201		■		
	202		■		
	203		■		
	204	■			
BIOL	050	◘	◘	◘	◘
	101	◘	◘	◘	●
	103	◘	◘	◘	■
	104	■	■	■	
	105	◘	◘	◘	■
	114	■	■	■	■
	115	◘	◘	◘	■
	120	●	●		
	130		●	●	
	140	●	●		
	236	◘	◘	●	●
	237	◘	●	●	●
	238	●	◘	●	●

		Fall	Winter	Spring	Summer
	240	■	■	■	
	243	◘	◘	◘	
BMET	116	●			
	125		●		
	204		●		
	254	●	●	●	
	255	●	●	●	
BUS	101	◘	◘	◘	◘
	103	◘	◘		■
	104	◘	◘		
	120	◘	◘	■	
	122	◘	◘	■	■
	123	●	●		
	161	●	●		
	202	◘	◘	■	■
	204	◘	◘	■	■
	205	■	■		■
	207	◘	◘	◘	
	208	■	■		■
	215	■	■	■	■
	217	◘	◘	■	■
	220	◘	◘	■	■
	226	◘	◘	◘	■
	230	◘	◘		
	240	■	◘	■	
CAB	101	◘	◘	◘	◘
CAD	101	●			
	103	●	●	●	
	106		●		
	107	■			
	211	●	●	■	
	212		●		
	221	●	●		
CAP	102	◘	◘	◘	■
	103	■	■	■	■
	124	●	●		
	125	●	●		
	128	●	●		
	142	●	●		
	143	●	●		
	144	●	●		
	215	●	●		
	227	●	●		
	240	●	●		
	241	◘	◘	■	
	242	●	●		
	243	●	●		
	244	●	●		
	247	●	●		
	260		●		
	267	●	●		
	295	●			
CBPA	103			●	
	125	●	●		
	144	●	●		
CCD	100	●	●		
	101	●	●	●	
	102	■	■	■	
	105		●		
	113	●	●		
	115	●	■		
	116	◘	◘	●	■

		Fall	Winter	Spring	Summer
	118	●	■		
	121		●		
	126	●	●	●	
	130		●		
	140		●		
	150	■	■		
	155		■	●	
	200	■	■	●	
	211	■	●	●	
	214	■	■		
	215	●			
	216	●	■		
	218		■	●	
	221	●	●		
	224	●	●		
CGT	109	●	●	●	●
	123	●	●	●	●
	125	●	●	●	●
	127	●	●	●	
	136	●	●		
	141	●	●		
	149	●	●		
	154	●	●		
	157	●	●		
	161	◘	◘	■	
	163	●	●	●	
	166	●	●	●	
	168	●	●		
	206	●	●		
	208	●	●		
	210	●	●		
	211	●	●		
	212	●	●		
	215	●	●		
	226	●	●		
	231	●	●		
	234	●			
	237	●	●		
	238	●			
	242	●	●	●	
	244	●	●		
	246	●	●		
	247	●	●		
	250	●	●		
	252	●	●		
	254	●	●	●	
	256		●		
	257	●	●		
CHEM	051	◘	◘	◘	●
	100	●	●	●	
	111	●	●	●	●
	117	●	●	●	
	120	●	●		●
	213	●			
CHIN	101	●	●		
	102		●		
CIS	105	◘	◘	◘	●
	115	◘	◘	◘	◘
	120	◘	◘	◘	◘
	122		■		
	125	■		■	
	129	◘	◘	■	●

		Fall	Winter	Spring	Summer
	170	◘	◘	■	
	171	◘	■	■	
	172		●		
	173		●		
	176	■	●	■	
	178	■	●		
	180	◘	◘	■	
	185	■	■	■	
	211	●	●		
	215	■	■		
	221	●	●		
	223	■	●		
	225	◘	■		
	235	■	◘	■	
	238	■	■		
	250	●	●		
	251		■		
	255	●			
	260	●			
	265	●	■		
	267	●	●		
	271		●		
	273		●		
	276		●		
	290	●	●	■	
CJ	102	◘	◘	◘	◘
	104	◘	◘	◘	◘
	107	●	●	●	●
	113	◘	◘	◘	◘
	201	●	●	●	●
	209	●	●	●	●
	211	◘	◘	●	●
	212	◘	◘	◘	◘
	221	◘	◘	■	◘
	287	●	●		
CM	107	●	●		
	109	●	●		
	203	●			
	210	●	●		
COLLS	045	●	●		
	049	●	●		
	050	●	●	●	
	053	●	●	●	
	105	●	●		
	111	■	■		
	130	●	●	●	
	211	■	■		
COMA	103	◘	◘	◘	◘
	200	●	◘		
	201		●		
	230		●		
COMPS	124	■	●		
	126	●	■	■	
	147		●		
COR	110	◘	◘	◘	◘
DSGN	180	■			
	250		■		
	280		■		
ECON	103	●	●		
	201	◘	◘	◘	◘
	202	◘	◘	■	■

		Fall	Winter	Spring	Summer
ELECT	131	●	●	●	
	133	●	●		
	137	●	●		
	138	●	●		
	139	●	●		
	144	●	●		
	215	●	●	●	
	218	●	●		
	219	●	●	●	
	251		●		
EMT	115	●	●	●	
	210	●	●	●	
	220	●	●	●	
	230	●	●	●	
ENG	050	●	●	●	■
	055	●	●	●	●
	100	◘	◘	◘	■
	101	◘	◘	◘	◘
	102	◘	◘	◘	◘
	106	◘	◘	◘	■
	107	●	◘		
	116	◘	◘	■	■
	200	◘	◘	■	■
	203	●	●		
	205	●	◘	■	
	206	●	◘	■	
	221	●			
	243	◘	◘	■	■
	244	◘	●		
	245		●		
	246	●			
	248	●			
	251	■		■	
	252		■		■
	280	■			
ENGR	100	●	●	●	
	201	◘			
	202	■			
ENVR	107	■	■		
	206	■	■		
	230	●			
	232			■	
	235		■		
ESL	051	●	●		
	052	●	●		
	100	●	●		
	101	●	●		
	102	●	●		
FIRE	112	●	●		
	119	●	●		
	124	●	●	●	
	125	●	●		
	128	●	●		
	130	●			
	135	●			
	200	●	●		
	205		●		
	207		●		
FR	101	◘	◘	◘	
	102	●	◘		◘
	201	●			
	202		●		

Program Planning Chart

Projected Course Offerings by Semester

Key to Learning Options
- ● traditional
- ■ alternative
- ◘ traditional & alternative

Courses not listed are offered on an as-needed basis—contact the associate dean for information. Alternative classes are defined as Online, Open Entry/Open Exit or Hybrid—see pages 21–29. Course listings are subject to change. *Updated 9/11.*

		Fall	Winter	Spring	Summer
GEOG	105	●	●	●	
	133	◘	◘	■	■
	135	●	●		
	203		●		
	212	■	■	■	
	217		■		
	225	■			
GEOL	133	●	●	●	
	237		●		
GER	101	●	●		
	102	●	●		
HDS	110	◘	◘	■	
HIST	134	◘	◘	■	●
	137	◘	◘		■
	138	◘	◘	◘	◘
	141	●	●		
	151	◘	◘	◘	◘
	152	◘	◘	●	■
	153	◘	◘	◘	◘
	230	●			
HIT	100	■	■	■	
	104	◘	◘	◘	
	109	◘	◘		
	111	●	●		
	112	●	●	●	
	113	●	●	●	
	114	◘	◘	●	
	116	●	●		
	158		●		
	210	●			
	213		■		
	216	■		●	
	217	●			
	219		◘		
	222	●	●		
	230			●	
	231			●	
	232	●	●		
	233	●	●		
	234	●	●		
	240	●	●		
	256	■			
	258		■		
HS	101	■	■	■	
	102	◘	◘	◘	
	103	●	●		
	201	●	●	●	
	202	◘	◘	◘	
	203	●	●	●	
HUM	106	◘	◘	◘	◘
	150	●	●		
	190	●			
	210	◘	◘	◘	■
	212	●	●		
	215	■	■		
ITAL	101	●	●		
	102	●	●		
LR	135	●	●		

		Fall	Winter	Spring	Summer
MA	110	●	●		
	134	◘	◘	◘	
	140	●	◘	●	
	155	●	●	●	
	174		●		
	180	●	●		
	195			■	
MAS	101	■	■		
	102	●	●		
	103	■	■		
	104		■	■	
	106	●		●	
	107	■		■	
	109		■	■	
	110		●	●	
	111	■		■	
MATH	045	●	●	●	●
	047	◘	◘	◘	◘
	053	◘	◘	◘	◘
	101	◘	◘	◘	◘
	105	●	●		
	106	●	●		
	111	◘	■	●	
	113	◘	◘	◘	◘
	119	●	●	●	●
	122	●	●	●	●
	128	●	●	●	
	129	●	●	●	●
	135	●	●	●	
	145	●	●	●	
	150	●	●	●	
	151	●	●	●	
	230	●	●		
	240	●	●	●	
	252	●	●		
MET	102	●	●		
	114	●	●		
	120	●			
	152	●	●		
	160	●			
	211		●		
	215	●			
	217	●			
	248		●		
	271	●			
	280		●		
MFG	102	●	●	●	
	103		●		
	105	●	●		
	106		●		
	203	●		●	
	206	●		●	
	211		●		
MT	106	●			
	108	●	●		
	157		●		
	158		■		
	159			■	

		Fall	Winter	Spring	Summer
MUSIC	104	◘	●		
	105	◘	◘	◘	◘
	107	●	●	●	
	114	●	●		
	116	●	●		
	117	●	●		
	118	●	●		
	121	●	●		
	122	●	●		
	124	●	●		
	127	●	●		
	131	●	●		
	132	●	●		
	133	●	●		
	134	●	●		
	135	●	●		
	136	●	●		
	137	●	●		
	138		●	●	
	140	●	●		
	141	●	●		
	142	●	●		
	143	●	●		
	144	●	●		
	149	●	●		
	153	●	●		
	154		●		
	155		●		
	164	●			
	165		●		
	168	●	●		
	169	●	●		
	171	●	●		
	172	●	●		
	201	●			
	202	●			
	204	●			
	205	●			
	214	●	●		
	216	●	●		
	217	●	●		
	218	●	●		
	224	●	●		
	227	●	●		
	231	●	●		
	232	●	●		
	233	●	●		
	234	●	●		
	235	●	●		
	236	●	●		
	240	●	●		
	241	●	●		
	242	●	●		
	243	●	●		
	244	●	●		
	245	●	●		
	246	●	●		
	248	●	●		
	249	●	●		
	253	●	●		
	256	●	●		
	263	●	●		

		Fall	Winter	Spring	Summer
	264	●	●		
	268	●	●		
	269	●	●		
	282	●	●		
	283	●	●		
	284	●	●		
	285	●	●		
	286	●	●		
	287	●	●		
	288	●	●		
	289	●	●		
	290	●	●		
	291	●	●		
	292	●	●		
	293	●	●		
NATP	110	●	●	●	●
NURS	102	●	●	●	
	104	●		●	
	110	●			
	124		●	●	
	125		●	●	
	128		●	●	
	139				●
	245	●	●		
	246	●	●		
	248	●	●		
	259		●		
OIS	100	■	◘	■	
	102	■	■		
	105	■	■		
	165	■	■		
	185	■			
	195	■	■		
	255		■		
	260	■			
	265	■	■		
PE	104	●	●	●	
	105	●	●		
	106	●	●		
	115	●	●		
	116	●	●		
	121	●	●	●	
	132			●	
	141	●	●		
	157	●			
	194	●	●	●	
	202	●	●	●	
	240	●	●	●	
PHIL	243	◘	◘	◘	◘
	247	●	●	●	●
	277	◘	◘	◘	
PHYS	051	●	●	●	
	104	◘	◘	●	
	123	●	●		
	181	●	●		
	182		●		
	211	●	●		
	212		●	●	
POLS	105	◘	◘	◘	◘
	109		■		
	205	●			
	209	●	●		

		Fall	Winter	Spring	Summer
PSYCH	153	◘	◘	◘	◘
	201	◘	◘	◘	◘
	207	●	●		
	209	◘	◘	◘	
	219	●	●		
	229	◘	◘	◘	■
	239	◘	◘	◘	◘
QM	107		●		
SOC	101	●	●		
	201	◘	◘	◘	◘
	205	■	◘	●	■
	209	◘	■	■	■
	210	●	●	●	
	290		●		
SPAN	101	◘	◘	◘	
	102	◘	◘	●	◘
	201	●	●	●	
	202		●		●
SRT	110	●	●		●
	121	●	●	●	●
	122		●	●	
	150	●	●	●	
	221	●		●	
	222		●		●
THEA	120	●	●		
	121	●	●		
	204		●		
	207	●	●		
	208	●	●		
	209		●		
	220	●	●		
	221	●	●		
WELD	110	●	●		
	111		●		
	112	●	●		
	113	●	●		
	115	●	●		
	118		●		
	119	●	●		
	120		●		
	130	●	●		
	205			●	
	206				●
	210	●		●	
	211	●		●	
	212			●	
	214			●	
	223				●
	262	●	●		

THE SC NO-CLASSES-CANCELLED GUARANTEE

✔ If the class has students registered, it will run.

✔ **New sections are added to meet demand; see the latest class listings through WebAdvisor or at www.schoolcraft.edu/schedules**

The SC No-classes-cancelled Guarantee will better serve students by not cancelling credit classes based on the number of students registered. The hope is that students will be better able to plan ahead and to achieve their educational goals at Schoolcraft if they know that certain classes are going to be available. As class sections 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 latest information about the guarantee can be found at www.schoolcraft.edu/schedules

NO LAST-MINUTE CANCELLATIONS—YOU CAN COUNT ON IT!

Winter 2012 Courses

**As class sections fill up,
Schoolcraft uses just-in-time scheduling
to add sections based on student demand.**

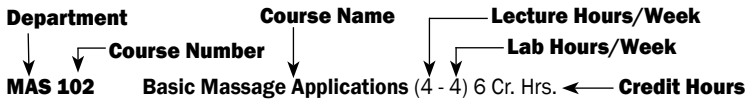
**Use these links to see the most current class listings:
www.schoolcraft.edu/schedules
or
WebAdvisor**

Winter 2012 classes begin Saturday, January 14.

Winter 2012 Course Descriptions

Course offerings and requirements are subject to change. See www.schoolcraft.edu for updates.

KEY TO COURSE LISTINGS:



Prerequisite: A requirement that must be completed before taking this course.
Corequisite: A course to be taken in the same semester as this course.

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.

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. You will utilize Web based tools and spreadsheet software for some of the assignments in this course.

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 and World Religions (3-0) 3 Cr. Hrs.
Prerequisite: **ANTH 112 or ANTH 201 recommended but not required.**
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 but not required.**
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. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

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. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

ART 109 Three Dimensional Design (3-0) 3 Cr. Hrs.
Prerequisite: **ART 106 or consent of instructor.**
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. In addition to regular class time, students are required to spend three hours per week in a time flexible studio lab provided by the college.

ART 113 Art Education (3-0) 3 Cr. Hrs.
Prerequisite: **PSYCH 201 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. Students are required to make arrangements for observation of elementary classes during the latter part of the semester.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

ART 126 Basic Design 2 (3-0) 3 Cr. Hrs.
***Prerequisite:* ART 106.**
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. Students are required to spend three hours per week (in addition to regular class time) in a time-flexible studio lab provided by the college.

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 105 and 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. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

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. Project completion and exhibition of works will take place at the semester end. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

ART 236 Painting 1 (3-0) 3 Cr. Hrs.
***Prerequisite:* ART 105 recommended.**
This course introduces the student to fundamental painting techniques and processes through abstract, conceptual and representational imagery. Sessions on portraiture are included. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

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. In addition to regular class time, students are required to spend three hours per week in a time-flexible studio lab provided by the college.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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. This studio course requires a six-hour per week commitment, which includes three hours in a lecture/lab and three hours in the appropriate open lab.

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 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 a review of fundamental concepts such as symbols, formulas, chemical equations, laws of chemical combination and physical and chemical properties. Atomic and molecular structure, bonding, stoichiometry, periodicity, gases, solutions, acids and bases and electrochemistry and oxidation-reduction are also covered 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, coordination compounds, thermodynamics and qualitative analysis. A brief introduction to organic chemistry and nuclear chemistry 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 supervised experience working directly with children and youth in settings such as child development centers and group homes. They will have the opportunity to integrate classroom material and personal life experiences 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, CCD 150, and CCD 221.**
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 and CCD 150.**
This course provides continued supervised experience working directly with children and youth in child development settings. 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 approved 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 150, CCD 215 and CCD 216.**
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.**
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 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.
Prerequisites: **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 or 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 or 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: **None.**
Corequisite: **CGT 125.**
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: **None.**
Corequisite: **CGT 123.**
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: **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: **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: **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: **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: **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: **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:* 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:* CGT 109, CGT 123 and CGT 125.**
***Corequisite:* CGT 168.**
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:* 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:* CGT 109, CGT 123, CGT 125 and CGT 127.**
***Corequisite:* CGT 226.**
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 Development and Design 3 (3-0) 3 Cr. Hrs.
***Prerequisite:* 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 236.**
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:* CGT 162.**
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:* 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:* 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:* 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 236, 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:* 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: **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: **None.**
Corequisite: **CGT 242 or CGT 246.**
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 or CGT 236 or 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

NOTE: All the CIS courses listed below require the student to spend time outside the classroom in a specialized laboratory situation to complete assignments. State-of-the-art computer facilities are available for student use.

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 162 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

Note: COR 110 is required for the Criminal Justice Associate Degree.

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), 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

Note: Most courses are offered on a five-week, three per semester rotation.

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.

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: **COMPS 126.**
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 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 equipments 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 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: **Appropriate placement test score.**
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: **Appropriate placement test score.**
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: **Appropriate placement test score 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. The focus of this course is on high level grammar, communication skills including listening and vocal features (such as volume and intonation) and non-verbal communication skills.

ESL 101 **English Writing and Reading Skills 1** (3-0) 3 Cr. Hrs.
Prerequisite: **Appropriate placement test score 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. Nonrenewable 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:* One year of high school French or FR 101 with grade of 2.0 or better 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:* Two years of high school French or FR 102 with grade of 2.0 or better 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: **Three years of high school French or FR 201 with grade of 2.0 or better 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: **GEOG 135.**
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: **Minimum one year of high school German or GER 101 with grade of 2.0 or better 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: **Two years of high school German or GER 102 with grade of 2.0 or better 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: **Three years of high school German or GER 201 with grade of 2.0 or better 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 111 **ICD-9-CM Classification** (2-2) 3 Cr. Hrs.
Prerequisite: **HIT 104, HIT 109, HIT 113 and BIOL 236.**
This course is an introduction to basic coding theory and computer laboratory practice applying ICD-9-CM to hospital medical/health records. This course is designed for the classification of patient morbidity and mortality information for statistical purposes and for the indexing of health/medical records by disease and operation for data storage and retrieval. Diagnostic coding and reporting guidelines for hospital inpatient and outpatient services will be utilized.

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).

HIT 158 **Clinical Affiliation 1** (0-8) 2 Cr. Hrs.
Prerequisite: **HIT 104, HIT 109, BIOL 236, and CIS 120.**
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 104, HIT 111 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 258.**
This course will assist the student in preparation for the registered health information technician examination. The student will develop a study plan to be utilized on an individual and/or group basis. The student will complete a mock 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 109, HIT 111 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 computers 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 111, HIT 113, HIT 158.**
Corequisite: **HIT 256.**
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, HIT 217, and HIT 256.**
Corequisite: **HIT 258.**
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 104, HIT 109, HIT 113 and BIOL 236.**
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 230 ICD-9-CM Coding Practicum (1-1) 2 Cr. Hrs.
Prerequisite: **HIT 233 and HIT 234.**
This course will provide practical hands-on experience with ICD-9-CM 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 231 Ambulatory Coding Practicum (1-1) 2 Cr. Hrs.
Prerequisite: **HIT 233 and HIT 234.**
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 109 and 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 233 Intermediate ICD-9-CM Coding (2-2) 3 Cr. Hrs.
Prerequisite: **HIT 111, HIT 113 and BIOL 236.**
This course is designed to prepare a student to code in the hospital setting using ICD-9-CM. 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. This course is the theory and practice of coding medical records in the hospital setting using ICD-9-CM. The student will use the encoding software in the laboratory to apply coding to charts.

HIT 234 Intermediate Ambulatory Coding (2-2) 3 Cr. Hrs.
Prerequisite: **HIT 111, HIT 113, HIT 222 and BIOL 236.**
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 240 Healthcare Reimbursement Methodologies (2-0) 2 Cr. Hrs.
Prerequisite: **HIT 109, HIT 111, HIT 158, 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 256 Clinical Affiliation 2 (0-8) 2 Cr. Hrs.
Prerequisite: **HIT 111, HIT 113, HIT 158 and HIT 216.**
Corequisite: **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.

HIT 258 Clinical Affiliation 3 (0-8) 2 Cr. Hrs.
Prerequisite: **HIT 210, HIT 216, HIT 217, HIT 222 and HIT 256.**
Corequisite: **HIT 219.**
This course provides professional practice assignments for the student in a Health Information Management/Services department under the supervision of health information management professionals. The student will have the 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 procedures/functions utilized within health information systems in facilities, organizations or agencies related to healthcare. The student may be assigned to a hospital, cancer registry, cancer center, research department, ambulatory center or other related healthcare organizations.

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: **ENG 101. ENG 102 recommended.**
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: **HUM 106 or HUM 150 or consent of instructor.**
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: **HUM 106 or HUM 150 or consent of instructor.**
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 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 101 **Theory and Fundamentals of Massage Therapy** (2-0) 2 Cr. Hrs.
Prerequisite: **None.**
Corequisite: **MAS 102 and MAS 103.**
This course deals with the history, professional standards, ethics and scope of practice for massage therapy. The student is introduced to professional methods of communication and setting boundaries. The concepts of indication and contraindications are presented in relationship to pathology. Exploring current research that validates massage will also be addressed.

MAS 102 **Basic Massage Applications** (4-4) 6 Cr. Hrs.
Prerequisite: **None.**
Corequisite: **MAS 101 and MAS 103.**
This class provides a solid base for the preparation and performance of massage in a wellness setting on healthy individuals. The tools of the trade, from tables and supplies through massage manipulations and techniques, are presented and practiced with an emphasis on safe and effective applications and body mechanics.

MAS 103 **Fundamentals of Anatomy and Physiology** (4-0) 4 Cr. Hrs.
Prerequisite: **None.**
Corequisite: **MAS 101 and MAS 102.**
This course provides the foundation for the study of anatomy and physiology as it relates to massage therapists. Western science concepts and their correlations to Eastern philosophies are discussed and compared. General subject matter includes the organization of body structure, the mechanisms of health and disease, pathology, pain, stress management and adaptation. The course introduces medical terminology, especially the language encountered in massage. Study of the components of the skeletal, muscular and nervous systems begins in this course. Feedback loops and their relationship to massage are also presented. Stress responses and stress management are discussed with the focus on health maintenance.

MAS 104 **Intermediate Massage Applications** (2-6) 5 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102 and MAS 103.**
Corequisite: **MAS 109 and MAS 110.**
This course covers both complementary bodywork systems and applications of massage for individuals with special needs. The course also presents business considerations for the practice of massage therapy as an employee or independent contractor. Wellness education as it relates to self-help and client activities will be studied. Applications of massage therapy in healthcare facilities and hospice/comfort care will be explored.

MAS 106 Palpatory and Assessment Skills (1-5) 3.5 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102, MAS 103, MAS 104, MAS 109 and MAS 110.**
Corequisite: **MAS 107 and MAS 111.**
This course will provide the massage student with an extensive opportunity to explore the various avenues of assessment for relaxation and therapeutic massage. Students will become more proficient in postural evaluation, tissue assessment, interpretation and analysis during massage sessions. The creation of a database of intake and assessment information and its use in interpretation and analysis to determine treatment methods and plans will be covered. Specific applications of massage and bodywork methods applicable to the treatment plans will be reviewed. A discussion of ergonomics will include our relationship to the physical surroundings that affect body structure and function, the impact on massage and self-care activities for clients to maintain health.

MAS 107 Organ Systems Anatomy and Physiology (4-0) 4 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102, MAS 103, MAS 104, MAS 109 and MAS 110.**
Corequisite: **MAS 106 and MAS 111.**
This course addresses those organ systems emphasized in standard anatomy courses. Attention is given to methods of clinical reasoning and justification for identifying indications and contraindications for massage and need for referral. Students will apply massage and bodywork to meet the needs of clients with more involved health conditions. As part of the course, the students will prepare a detailed case report and present it to the class. Evaluating criteria and analyzing information will be used as part of a peer review of the case reports presented.

MAS 109 Systems of Support and Movement (4-2) 5 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102 and MAS 103.**
Corequisite: **MAS 104 and MAS 110.**
The skeletal, muscular and peripheral nervous systems are explored in detail in this course. They are the systems primarily addressed by massage therapists and the focus will be on identifying structures, normal functions, characteristics and common disease processes. A study of pharmacologic agents will be related to physiologic effects that require modification in massage sessions.

MAS 110 Massage Therapy Student Clinic (0-4) 2 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102 and MAS 103.**
Corequisite: **MAS 104 and MAS 109.**
Students will experience a total of 60 hours of supervised practice using the skills they have learned in class. To prepare them for a professional massage work environment, all students will perform practical applications of massage, front desk activities, clinic supervision and management at the Radcliff campus clinic site. Some additional off-site opportunities may be available.

MAS 111 Massage Therapy Internship (0-3) 3 Cr. Hrs.
Prerequisite: **MAS 101, MAS 102, MAS 103, MAS 104, MAS 109 and MAS 110.**
Corequisite: **MAS 106 and MAS 107.**
This is the capstone course for Massage Therapy students who have completed all prerequisites. The students will work in a clinical setting supervised by a licensed massage therapist. Community service activities and presentations and a student portfolio are included in the course requirements.

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 math class. For more details you may wish to consult your instructor.

For appropriate sequence of math 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 covers problem solving, number theory, sets, 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 045 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-9-CM) 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 106 Principles of Medical Transcription (2-0) 2 Cr. Hrs.
Prerequisite: **Keyboarding skill of 50 words per minute recommended.**
This course provides an introduction to the role of the medical transcriptionist in the healthcare setting. The student will acquire knowledge of the types of forms and content utilized and required in medical transcription. The content of the course will also include the legalities and standards that apply to 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.

MT 157 Medical Transcription Seminar (1-0) 1 Cr. Hr.
Prerequisite: **HIT 104, MT 106, MT 108 and BIOL 105.**
This course will provide an overview of the law as it is applied to the medical transcription profession, healthcare professionals and patients. Students will also explore the necessity of certification as a Registered Medical Transcriptionist (RMT) and certification as a Certified Medical Transcriptionist (CMT). The student will discuss management techniques that may be employed by the entry-level medical transcriptionist working in a healthcare facility or as an at-home employee. The student will begin preparation for a job search as a medical transcriptionist.

MT 158 Hospital Medical Transcription 1 (3-4) 5 Cr. Hrs.
Prerequisite: **HIT 104, MT 106, MT 108 and BIOL 105.**
This course will provide medical transcription skill building opportunities to strengthen and expand medical terminology. The course will emphasize the technique of developing skill with medical transcription documents for each anatomic system. The student will utilize the English language and communication skills during transcription practice.

MT 159 Hospital Medical Transcription 2 (3-4) 5 Cr. Hrs.
Prerequisite: **MT 157 and MT 158.**
This course will describe and illustrate various reports that the medical transcriptionist will be expected to transcribe. The student will use production word processing skills in transcribing all of the commonly used medical reports. The student will be expected to format, edit and transcribe medical reports that require an advanced level of medical terminology.

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

Note: Also see Sound Recording Technology on page 96.

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 Director of Piano 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, ragtime 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, nondominant 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 Director of Piano 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 Director of Piano 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: **Consent of Director of Piano 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: **Consent of Director of Piano 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:* Dean's list status (GPA 3.5), MUSIC 154 and two semesters of Applied Voice or Instrumental Music or faculty approval. Student eligibility will be determined during interviews with the instructor.**
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:* Dean's list status (GPA 3.5), MUSIC 154 and two semesters of Applied Voice or Instrumental Music or faculty approval. Student eligibility will be determined during interviews with the instructor.**
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: **BIOL 050 or high school biology, CHEM 051 or high school chemistry, MATH 053, BIOL 236, or BIOL 237 and BIOL 238 with a grade of 3.0 or better; consent of department. Acceptance to the Nursing Career Ladder Curriculum for the forthcoming year.**
This course provides an introduction to computers and their use in healthcare. 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: **BIOL 050 or high school biology, CHEM 051 or high school chemistry, MATH 053, BIOL 236, or BIOL 237 and BIOL 238 with a grade of 3.0 or better; consent of department. 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: **BIOL 050 or high school biology, CHEM 051 or high school chemistry, MATH 053, BIOL 236, or BIOL 237 and BIOL 238 with a grade of 3.0 or better; consent of department. Corequisite: BIOL 114, NURS 102 and NURS 104 must be taken prior to or along with NURS 110.**
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 perioperative 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 or 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: **None.**
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 is 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, multi-tasking 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.

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 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 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.**
Physics 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 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.

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: **None. 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.**
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 multitrack 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.**
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.**
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.**
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 and 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 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.

PREPARATION FOR WELDING CERTIFICATION EXAMINATION(S)

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. These courses address stick electrode welding techniques and competencies.

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.**

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.**

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.**

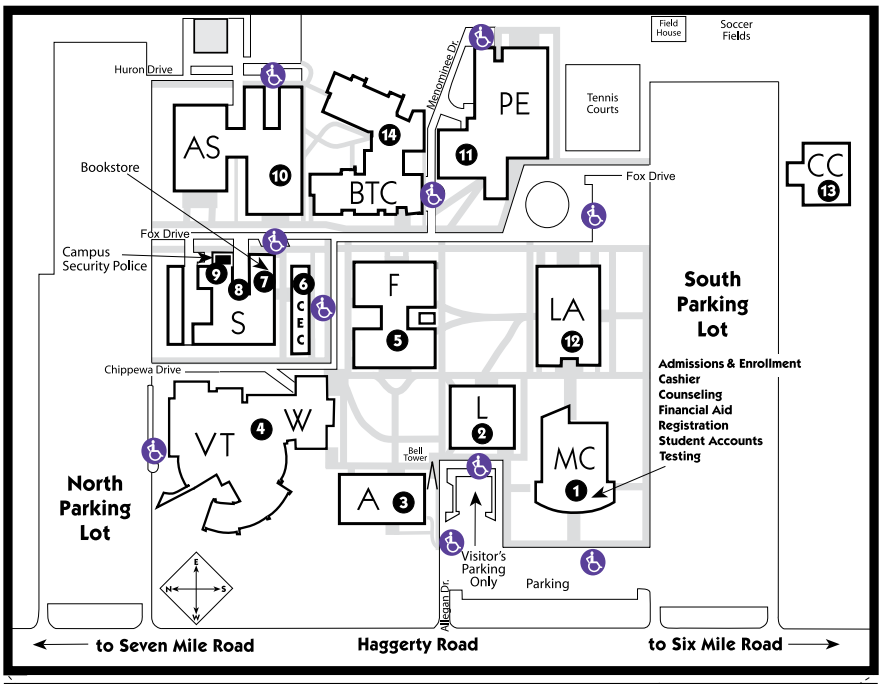
WELD 214 Preparation for Welder Certification in Pipe Welding (2-2) 3 Cr. Hrs.
Prerequisite: **WELD 130 or consent of department.**

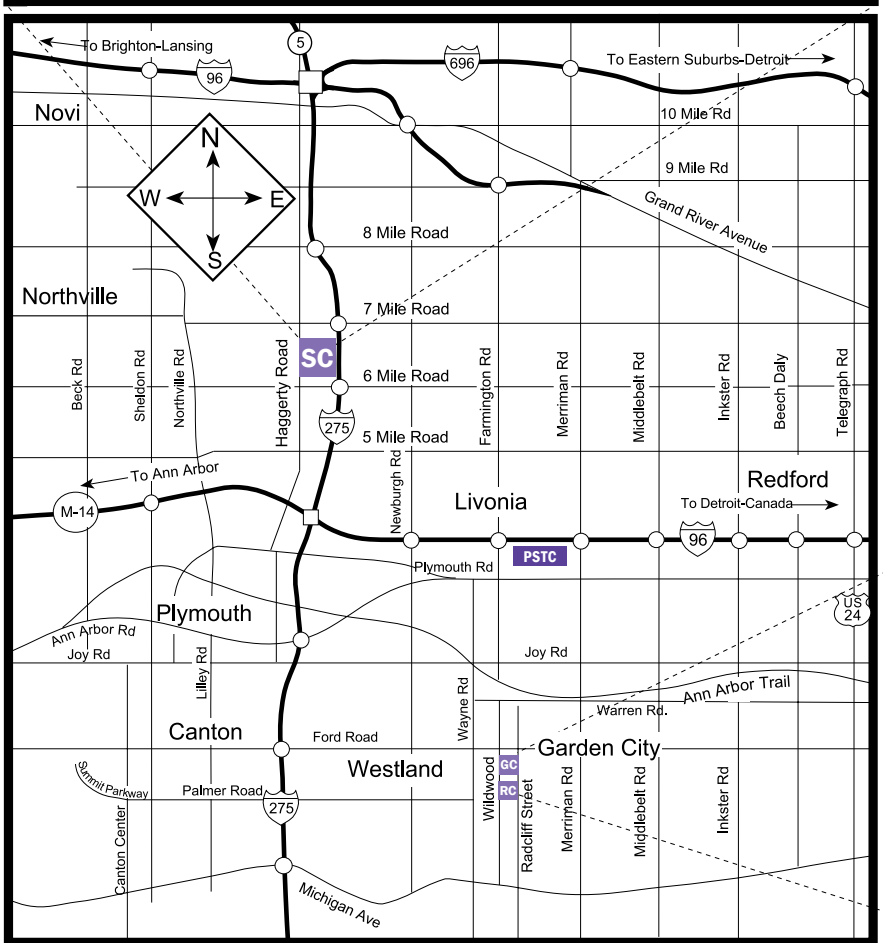
Campus & Area Maps

Schoolcraft College • 734-462-4400

18600 Haggerty Road
Livonia, Michigan 48152-2696

Hearing Impaired: 734-462-4437





Building Directory

Livonia Campus

Applied Sciences Building—AS 10
Business Programs, Classrooms, Computer Programs, Nursing, Technology Programs

Biomedical Technology Center—BTC..... 14
Classrooms, Learning Theatre, Open Entry/Open Exit Lab, Science Programs, Technology Programs

Bookstore—S 7

Continuing Education Center—CEC 6

Children's Center (Child Care)—CC..... 13

Forum Building—F 5
Art Programs, Classrooms, Forum Recital Hall, Music Programs, Science Programs

Grote Administration Center—A 3
Human Resources, Institutional Research, Instructional Operations, Marketing, Open Entry/Open Exit Office, President's Office

Liberal Arts Building—LA 12
Classrooms, Liberal Arts Programs, Liberal Arts Theatre

Bradner Library—L 2
Learning Assistance Center, Media

McDowell Center—MC..... 1
Admissions & Enrollment Center, Career & Transfer Center, Cashier, Classrooms, Computer Lab, Counseling Center, Curriculum & Assessment, Distance Learning, Financial Aid, Finance & Business Services, Office of Instruction, Student Accounts, Student Recruitment & Records, Student Services Office, Testing Center, Transition Center

Physical Education Building—PE 11

Campus Security Police 734-462-4424**—S 9**

Receiving Dock—S 8

Service Building—S..... 8
Lost & Found, Facilities Management

VisTaTech Center—VT 4
American Harvest Restaurant, Business Development Center, Classrooms, Development & Governmental Relations, Culinary Arts Program, Foundation, Main Street Cafe, Grants

Waterman Wing—W
Henry's Food Court, Meeting Rooms, Recreational Areas, Student Activities, Student Clubs, Study Area

Garden City Campus

Radcliff Center ..... RC
Allied Health Programs, Classrooms, Emergency Medical Technology, Fire Academy, Library, Massage Therapy Program, Police Academy

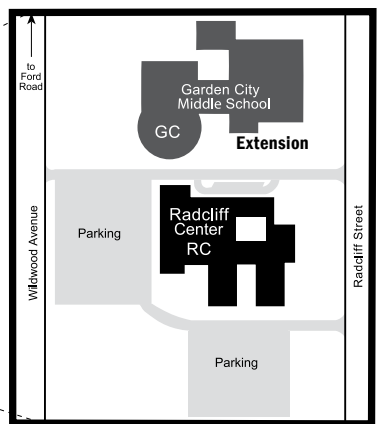
Garden City Extension (Middle School)..... GC

Public Safety Training Complex

31777 Industrial Road, Livonia, 48150..... PSTC

Garden City • 734-462-4770

1751 Radcliff Street, Garden City, MI 48135



Make *Any* Time *Class* Time

- Online courses that lead to an associate degree.
- Open Entry/Open Exit courses that allow students to study at their own pace.
- Hybrid courses that blend on-campus and online instruction.

See pages 21–29 for course information.

- Online bachelor's degree completion programs offered by several 4-year colleges.

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