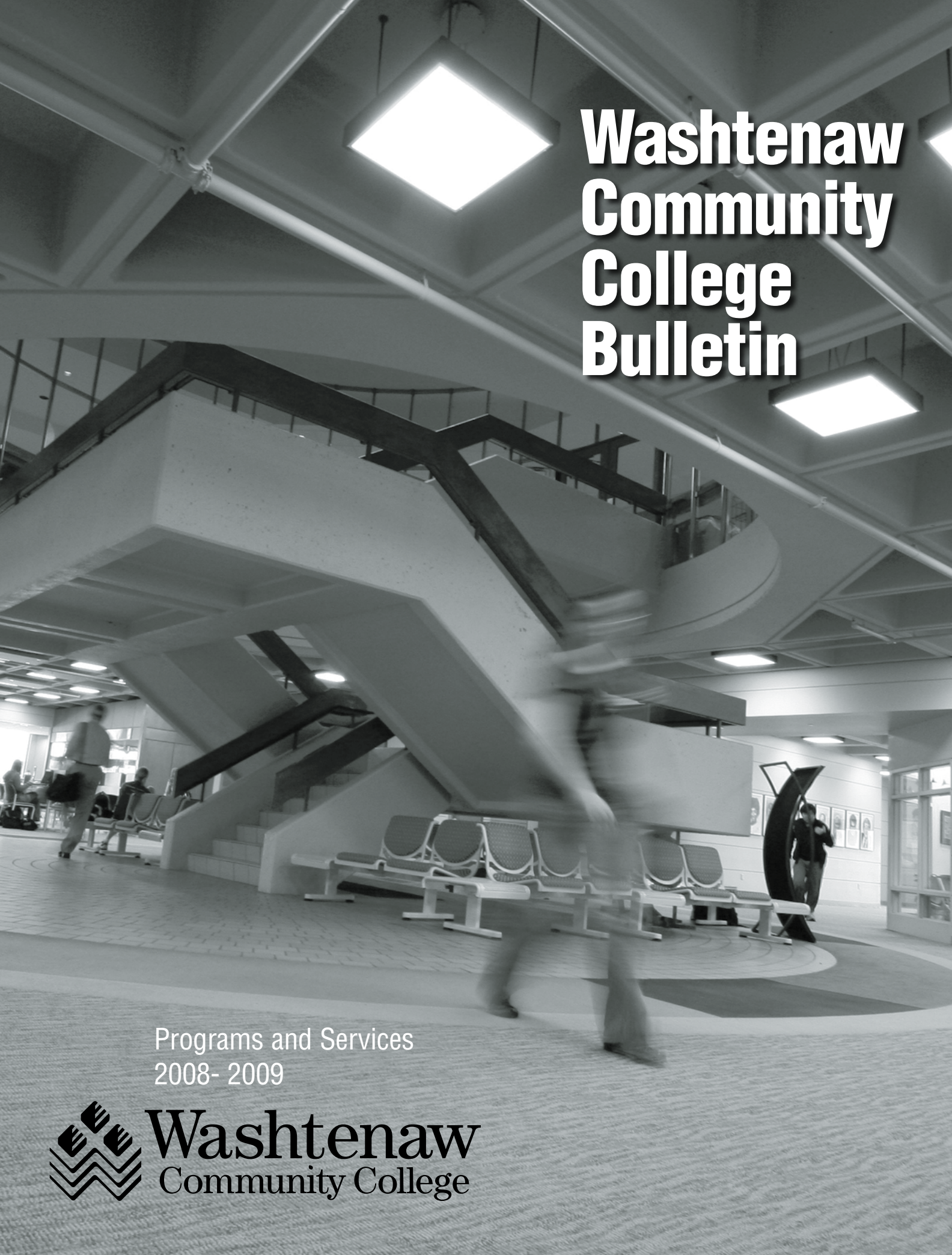
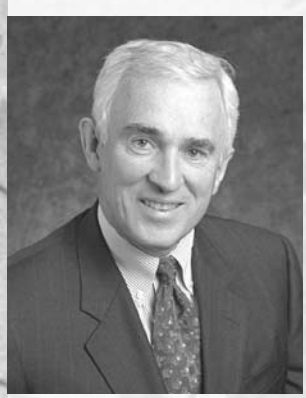


Washtenaw Community College Bulletin

Programs and Services
2008- 2009

Washtenaw Community College

Greetings From President Larry Whitworth



Welcome to Washtenaw Community College! As you walk from building to building, you will find many individuals like yourself eager to learn. They are here to prepare for a new career or sharpen the skills they need for their current job. Others will transfer classes to four-year universities for advanced degrees, and some are here because they know there is no age limit on learning.

If you are a returning student, you know that WCC faculty offer each student a combination of expertise, experience and personal attention. If you are not sure about your educational goals or are concerned that you may not be equipped to handle the rigors of college, I encourage you to speak to a counselor or academic advisor. They will help you sort through your options and develop a plan to help you succeed. You also will find a host of support services, such as financial aid, personal counseling, adaptive technology, tutorial assistance and onsite childcare.

No matter what your educational goals, WCC will help you achieve them. The College offers over 120 degree and certificate programs that cover a full range of technical, business and health-related careers. Liberal Arts classes in sociology, psychology, English, communication, math, and science are popular transfer courses to institutions like the University of Michigan and Eastern Michigan University. You also have flexible learning options such as online courses, blended or mixed mode classes—a combination of both online and in-class study, as well as weekend classes that allow you to fit learning around your busy schedule.

We believe education can improve the quality of life for each student and for the community as a whole

We live in a dynamic era, where the work environment has changed significantly. Gone is the day when a man or woman can make a good living at an unskilled job; 75 percent of today's jobs require training beyond high school. The workforce demands employees who are not only technically proficient, but also culturally sophisticated and socially adept. Workers must be equipped with a variety of skills they can use to adapt to multiple opportunities, because a significant number of jobs that exist today will be gone tomorrow, and many of tomorrow's jobs do not even exist today.

Knowledge is the most valuable tool we can offer our students. On behalf of the faculty, staff and Board of Trustees, we pledge to help you become self-initiated and independent learners poised to achieve success in today's complex world.

Sincerely,

Larry Whitworth

President

& CAREER

Accreditations/Approvals

Institutional Accreditation:

Washtenaw Community College is Accredited by

The Higher Learning Commission of the North Central Association

30 North LaSalle Street, Suite 2400
Chicago, Illinois 60602-2504
(312) 263-0456; (800) 621-7440
www.ncahigherlearningcommission.org

Children's Center Accredited by the

NAEYC Academy for Early Childhood Program Accreditation
1313 L Street N.W., Suite 500
Washington, DC 20005
(202) 232-8777; (800) 424-2460
www.naeyc.org

Program Accreditations and Approvals:

Automotive Mechanic Certificate
Automotive Technician Advanced Certificate
Auto Body Certificate
Collision Repair Refinish Technician Advanced Certificate
Collision Repair Technician Advanced Certificate
Certified by

National Automotive Technicians Education Foundation
101 Blue Seal Drive, Suite 101
Leesburg, Virginia 20175
(703) 669-6650
www.natef.org

Culinary and Hospitality Management AAS Degree, Culinary Arts Certificate, Hospitality Management Certificate, and Baking and Pastry Certificate Accredited by the

American Culinary Federation
180 Center Place Way
St. Augustine, FL 32095
(800) 624-9458
www.acfchefs.org

Dental Assisting Certificate Certified by

The Commission on Dental Accreditation of The American Dental Association
211 E. Chicago Avenue
Chicago, Illinois 60611
(312) 440-2500
www.ada.org

Law Enforcement Basic Police Academy Approved by

The Michigan Commission on Law Enforcement Standards
7426 North Canal Road
Lansing, Michigan 48913
(517) 322-1417
www.mcoles.org

Registered Nursing AAS Degree Accredited by

The National League for Nursing Accrediting Commission
61 Broadway - 33rd Floor
New York City, NY 10006
(212) 363-5555;
(800) 669-1656 ext. 153
www.nlnac.org

And approved by

State of Michigan
Department of Community Health
Bureau of Health Professionals
Board of Nursing
611 W. Ottawa
P.O. Box 30670
Lansing, MI 48909-8170
(517) 335-0918
www.mi.gov/mdch

Pharmacy Technology Certificate Accredited by

The American Society of Health-System Pharmacists
7272 Wisconsin Avenue
Bethesda, Maryland 20814
(301) 657-3000
www.ashp.org

Physical Therapist Assistant AAS Degree Program is seeking accreditation by the

Commission on Accreditation in Physical Therapy Education*

American Physical Therapy Association
1111 North Fairfax St.
Alexandria, VA 22314-9902
(703) 706-3245
www.apta.org

** The Physical Therapist Assistant Program has been granted Candidate for Accreditation Status by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association. Candidacy is not an accreditation status nor does it assure eventual accreditation. Candidate for Accreditation is a pre-accreditation status of affiliation with the Commission on Accreditation in Physical Therapy Education that indicates the program is progressing toward accreditation.*

Radiography AAS Degree Accredited by

Joint Review Committee on Education in Radiologic Technology
20 North Wacker Drive, Suite 2850
Chicago, Illinois 60606-3182
(312) 704-5300
www.jrcert.org

Student
Center
Building

General Information

In this section

College Overview 8

Mission of the College 8

Values of the College 8

Vision Statement 8

History of Washtenaw Community College 9

College Governance 9

Facilities 9

Types of Study 10

Degrees & Certificates 10

Special Programs & Services 14

Adult Transitions: Community Outreach 14

English as a Second Language Courses 14

Public Service Training & Police Academy 14

Trade Related Instruction/Apprenticeships 14

Washtenaw Technical Middle College 14

LifeLong Learning 15

Continuing Education Units 15

Senior (age 65 and up) Workshops for Emeritus Students 15

Customized Training for Organizations 15

Other Places to Learn 15

Distance Learning (College on Demand) 15

Extension Sites 16

The College has 3 semesters
Fall
Winter
Spring/Summer

Enrollment
13,000 in Winter & Fall semesters

7,000 in Spring/Summer semesters

Instructors
Over 200 full-time faculty
500 part-time faculty

Study
120+ credit programs arranged in schools:

- Advanced Manufacturing Systems
- Apprenticeship Studies
- Automotive and Motorcycle Technology
- Business and Entrepreneurial Studies
- Child Care Professionals
- Construction Technology
- Criminal Justice and Law Enforcement
- Culinary Arts & Hospitality Management
- Information Technology
- Music and Performing Arts
- Nursing and Health Sciences
- Visual Arts
- Transfer and University Parallel Programs

College Overview

Mission of the College

Our college strives to make a positive difference in people's lives through accessible and excellent educational programs and services.

- We provide a caring, open-door teaching and learning environment.
- We provide excellent teaching, counseling, and support services.
- We reach out to people who have limited income or other barriers to success.
- We enable people to progress in their academic and career pursuits.
- We work in partnership with the communities we serve.

We fulfill our mission by offering the following programs and services:

Occupational and Career Education: We offer certificate and associate degree programs, seminars, workshops, and courses which enable people to pursue employment or advance in a career. We develop and deliver job skills and occupational education programs in partnership with business, industry, government and labor groups.

General and Transfer Education: We offer individual courses and associate degree programs in academic disciplines which transfer to four-year colleges and universities, complement career programs, and enhance personal growth.

Continuing Education and Community Services: We offer credit and non-credit courses and programs at regional centers, at local business and community sites, and via television and the Internet. We develop and offer programs which respond to the educational needs of specific groups in the community.

Developmental Education: We offer basic courses, which strengthen reading, writing, mathematical, computer and study skills. We also offer instruction and services to people who wish to learn English as a second language.

Student Services: We offer orientation, academic skills assessment, assistance with program and course selection, financial aid, university transfer assistance, personal and career counseling, job placement, tutoring, child care, special needs services, computer and self-paced instructional laboratories, and library services.

Community Leadership: We cooperate with other community organizations in seeking solutions to local economic and social problems. As a primary educational resource in the community, we work to improve the quality of life in the communities we serve.

Values of the College

Teaching and Learning: We embrace teaching and learning as our central purpose.

Support: We make every effort to help learners achieve success.

Diversity: We respect differences in people and in ideas.

Partnerships: We plan and work together with respect, trust, and honesty within the college and with the communities we serve.

Innovation: We seek the best possible ways to conduct our work.

Vision Statement

WCC is a learner-centered, open-door college dedicated to student, community, and staff success. We offer a wide spectrum of community college services with an emphasis on premier technical and career education programs. The College staff continuously learns to improve learning.

Student Success: Our students come first. We are committed to their learning, success, and satisfaction. We strive to serve every student in an effective, caring, and supportive way. In order to enhance student learning outcomes, we engage in continuous improvement of teaching, programs, processes, and structures. We increase our accessibility by reaching learners where, when, and how they need instruction through the use of learning technologies, workplace learning experiences, and flexible scheduling of classes.

Community Success: We are committed to community learning, success, and satisfaction. WCC's primary contribution to community success is the development of a highly skilled workforce. A strong partnership with area employers emphasizes customized employee training and rapid adaptation of WCC programs to changing job training needs. Through strategic alliances with business, government, labor, and other educational institutions, WCC increases its emphasis on applied technology education, joint technical education programs with the public schools, and basic job-training services to under-served and at-risk groups.

Staff Success: We are committed to staff learning, success, and satisfaction. As a staff, we emphasize teamwork within college units and between the units. We support our colleagues and help them to be successful. We learn to improve learning; that is, we continuously increase our capacity to meet the educational requirements of the students, employers, and communities we serve. Through staff learning, we continuously improve services at each stage of the flow of students through WCC. All staff members align their work to contribute to improved teaching and increased student and community learning.

History of Washtenaw Community College

Washtenaw Community College (WCC) was created on January 15, 1965, when the citizens of Washtenaw County voted financial support for its establishment. A board of trustees was elected and a nationwide search for administrators and faculty was initiated while a study to look for a permanent campus location was begun. During construction of the main campus, which began in September 1966, the College held classes in temporary facilities in the Willow Run area of Ypsilanti Township. On September 12, 1966, 1,200 students were enrolled in 30 different programs. The first classes were held in Willow Run in an old elementary school, a fire station, and a bowling alley. Students in automotive programs took courses in a former dairy distribution plant, while those in health programs were taught in the basement of a church in downtown Ann Arbor. In 1969, the permanent 235-acre campus opened with completion of the Technical and Industrial Building and the Liberal Arts and Sciences Building. Today, nearly 21,000 students are enrolled annually in credit courses and an additional 8,000 are enrolled in non-credit offerings each year. Profile of Washtenaw Community College

College Governance

Washtenaw Community College is governed by a seven-member Board of Trustees. Collectively, the Board of Trustees is responsible for hiring the College president, making policy decisions and assuring that the College is fiscally sound. Assisting the President in managing the institution are the Vice President for Instruction; the Vice President of Administration and Finance; the Associate Vice President for Facilities, Development and Operations; the Associate Vice President for Student Services; the Associate Vice President of Human Resource Management; the Associate Vice President of Development, Grants, and Government Relations, and the Chief Information Officer. Decisions are developed with input from a variety of constituents. The College maintains several standing committees, and as needed, the administration creates ad hoc committees to explore solutions to specific questions. The College functions within a mission that seeks to promote student, community, and staff success.

Board members are elected by the community

Facilities

Today, the WCC main campus includes four buildings exclusively dedicated to instructional activities: the Crane Liberal Arts and Science Building, the Industrial Technology Building, the Occupational Education Building, the Technical and Industrial Building, and the Business Education Building. The Gunder Myran Building houses the Bailey Library, the computer commons, classrooms, and instructional space for Visual Arts programs. The Student Center Building houses student services, Garrett's Restaurant, a food court, dining area, college bookstore, administrative offices, and classrooms. The Children's Center in the Family Education Building provides care for children of WCC students.

The Morris Lawrence Building includes classrooms; an auditorium; exhibition space; conference and special event space, instructional space for art, drama, music, the police academy and public service training, business, industry, and contract training. The Great Lakes Regional Training Center houses the United Association and Journeyperson Programs. The Health and Fitness Center is the newest addition to the campus, and features environment-friendly construction as well as state-of-the-art equipment and facilities. The College maintains a smoke-free campus.

Meeting Rooms and Conference Services

Organized student or community groups may secure rooms for meeting by calling the Office of Conference Services at (734) 644-5034. Conference Services provides comprehensive meeting and event planning for community groups, from a small retreat to a 50 booth exposition. Towsley Auditorium has state of the art audiovisual equipment, seats 470 people and is suitable for concerts, recitals, small theater productions. On-site catering is available.

Degrees and Certificates

Over 2,000 awarded annually

80% of credit students pursue a degree

20% work to upgrade job skills or pursue personal interests

Types of Study

WCC offers credit as well as non-credit courses and programs. Some students choose to attend classes for personal interest or to obtain or upgrade job skills. Other students choose to complete college certificates to become credentialed for a job or to obtain associate's degrees for transfer to four-year institutions. WCC also offers a variety of special courses and programs to meet the diverse needs of area citizens, including employee training tailored for specific businesses and industries. The Adult Transitions Program offers GED completion classes as well as training for the unemployed – from counseling and skill assessment through actual training and job placement. Business and Industry Services at WCC works with employers to set up courses of study in order to fulfill apprenticeship requirements. In addition, the Department of Evening, Weekend, and Extension Services offers off-campus credit courses. The College's distance learning courses, College on Demand, are taught online, which also makes it easy for students to take classes off-campus.

Degrees & Certificates

Certificates and Degrees organized into Schools

Many students begin their college experience without a chosen course of study. Instead they use their time to learn the basic disciplines such as mathematics, science, social sciences and humanities – skills they can apply to a variety of career opportunities. The Schools allow students to easily access information about potential areas of study that will prepare them for the next step in their lives – be it further education or a career. For those students who are directed toward a particular career, the Schools bring together the various certificates and degrees that will prepare them for their chosen career or one like it. Students seeking a bachelor's degree will be best served by Transfer and University Parallel Programs.

School of Advanced Manufacturing Systems

Automation

Automation Technology Certificate
Fluid Power Certificate
Automation Technology AAS Degree

Electronics

Computer Systems Technology Certificate
Industrial Electronics Technology Certificate
Industrial Electronics Technology II Adv Certificate

Machine Tool

Machine Tool Technology Certificate

Manufacturing

Advanced Manufacturing Certificate
Numerical Control Programming Certificate

Other Options

Welding – See School of Construction Technology

School of Apprenticeship Studies

Apprentice Completion Certificate
Journeyman Industrial AAS Degree
Occupational Studies AAS Degree

United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

Construction Supervision Certificate
Construction Supervision AAS Degree
Industrial Training AAS Degree
Construction Supervision AS Degree
Industrial Training AS Degree

School of Automotive and Motorcycle Technology

Auto Body Repair

Auto Body Repair Certificate
Collision Repair Refinish Technician Adv Certificate
Collision Repair Technician Adv Certificate

Automotive Services

Automotive Mechanics Certificate
Automotive Technician Adv Certificate

Custom Cars & Concepts

Custom Auto Body Technician Adv Certificate
Custom Fabrication & Chassis Design Adv Certificate

Motorcycle Service Technician

Motorcycle Service Technology I Certificate
Motorcycle Service Technology II Adv Certificate

Other Options:

Welding – see School of Construction Technology
Occupations Studies – see School of Apprenticeship Studies

School of Business and Entrepreneurial Studies

Entrepreneurship

Entrepreneurship Certificate

Business

Business Sales and Marketing Certificate
E-Business Fundamentals Certificate
Human Resource Management Certificate
Management Supervision Adv Certificate
Management Supervision AAS Degree

Accounting

Accounting Certificate
Accounting AAS Degree

Business Office Systems

Administrative Assistant I Certificate
Computer Software Applications Certificate
Medical Office Assistant Certificate
Administrative Assistant II Adv Certificate
Administrative Assistant Technology AAS Degree

Other Options

Business AA Degree – see Transfer and University Parallel Programs
Occupational Studies – see School of Apprenticeship Studies

School of Child Care Professionals

Child Development Certificate
Child Care and Education Adv Certificate
Child Care Professional AAS Degree

School of Construction Technology

Construction Management

Commercial Property Maintenance Technology Adv Certificate
Construction Management AA Degree

Drafting & Surveying

Computer-Aided Drafting Certificate
Residential Planning and Estimating Certificate
Surveying Assistant Certificate
Computer-Aided Drafting Adv Certificate
Residential Design Adv Certificate
Architectural Technology AAS Degree
Computer-Aided Drafting and Design AAS Degree
Interior Design AAS Degree

HVAC

Heating, Ventilation, Air Conditioning and Refrigeration/Residential Certificate
Heating, Ventilation, Air Conditioning and Refrigeration/Commercial Adv Certificate
Heating, Ventilation, Air Conditioning and Refrigeration/Industrial Adv Certificate
Heating, Ventilation, Air Conditioning and Refrigeration AAS Degree

Residential Construction

Residential Construction I Certificate
Cabinetmaking /Millwork Systems Technology Adv Certificate
Residential Construction II Adv Certificate
Residential Construction AS Degree

Welding & Fabrication

Welding Certificate
Welding Mechanics Adv Certificate
Welding AAS Degree

Other Options

Management Supervision Adv Certificate – See School of Business and Entrepreneurial Studies
Management Supervision AAS Degree – See School of Business and Entrepreneurial Studies

Degrees & Certificates continued

School of Criminal Justice and Law Enforcement

Police Academy Certificate
Criminal Justice/Law Enforcement AAS Degree

Other Options

Criminal Justice AA Degree– See Transfer and University Parallel Programs

School of Culinary Arts and Hospitality Management

Baking and Pastry Certificate
Culinary Arts Certificate
Hospitality Management Certificate
Culinary and Hospitality Management AAS Degree

Other Options

Management Supervision Adv Certificate – See School of Business and Entrepreneurial Studies
Management Supervision AAS Degree – See School of Business and Entrepreneurial Studies
Occupational Studies – see School of Apprenticeship Studies

School of Information Technology

Internet Professional

Web Technology Certificate
E-Business Adv Certificate
Web Application Developer Adv Certificate
Web Graphic Design Adv Certificate
Internet Professional AAS Degree

Networking

Computer Networking Academy I Adv Certificate
Computer Networking Operating Systems I Adv Certificate
Computer Networking AAS Degree
Computer Networking Academy II PAC

Programming

Foundations of Computer Programming Certificate
.Net Programming Adv Certificate
Java Developer Adv Certificate
Object-Oriented Programming with C++ Adv Certificate
Computer Programming AAS Degree

Computer Security and Forensics

Information Assurance Certificate
Computer Forensics Adv Certificate
Network Security Adv Certificate
Computer Forensics AAS Degree
Computer Systems Security AAS Degree

Systems Development and Administration

Linux/Unix Systems I Certificate
Linux/Unix Systems II Adv Certificate
Web Database Developer Adv Certificate
Microcomputer System Support AAS Degree

Other Options

Computer Systems Technology Certificate – see School of Advanced Manufacturing Systems

School of Music and Performing Arts

Music Performance Certificate
Music Production/Engineering Certificate

School of Nursing and Health Sciences

Dental Assisting
Dental Assisting Certificate

Health Care Foundations
Health Care Foundations Certificate

Nursing
Nursing Assistant Skills Training Certificate of Completion
Nursing Transfer AAS Degree
Registered Nursing AAS Degree

Pharmacy Technology
Pharmacy Technology Certificate

Physical Therapist Assistant
Physical Therapist Assistant AAS Degree

Radiography
Radiography AAS Degree

Other Options

Management Supervision Adv Certificate – See School of Business and Entrepreneurial Studies
Occupational Studies – see School of Apprenticeship Studies

School of Visual Arts

3-D Animation
3-D Animation AAS Degree

Digital Video
Digital Video Film Production Certificate
Digital Video Production AA Degree

Graphic Design
Graphic Design Certificate
Graphic Design AAS Degree

Photography
Photographic Imaging Certificate
Photographic Technology AAS Degree

Other Options

Interior Design AAS Degree – See School of Construction Technology

Transfer and University Parallel Programs

Business
Business AA Degree

Communication
Broadcast Arts AA Degree

Education
Elementary Education AA Degree
Secondary Education AA Degree

Law and Law Enforcement
Criminal Justice AA Degree

Liberal Arts Transfer
Liberal Arts Transfer AA Degree

Exercise Science
Exercise Science AS

Math and Computer Science
Math and Science – Math or Computer Science Concentration AS

Pre-Engineering/Physics
Math and Science - Pre-Engineering Concentration AS

Pre-Medicine
Math and Science – Biology/Pre-Medicine Concentration AS
Math and Science – Chemistry/Pre-Medicine Concentration AS

Professional Writing
Technical Writing Certificate
Journalism AA Degree
Technical Writing AA Degree
Technical Writing AS Degree

Social Work
Human Services AA Degree

Henry S. Landau Residential Design and Construction Center

1150 James L. Hart Parkway, Ypsilanti

Provides broad-based

- Construction education
- Training
- Skill development

For students seeking

- a career change
- skill improvement
- a transfer degree
- to enter construction and design careers

For practicing professionals

- desiring supervisory positions
- upgrading skills
- completing associate degrees

Special Programs & Services

Adult Transitions: Community Outreach

Adult Transitions is a community outreach program that assists students who need new skills for today's workforce. It includes counseling, skill building (GED preparation) and career education. The program uses a step-by-step approach to move students from their neighborhoods to WCC and on to career paths of their choice.

Adult Transitions offers the Skill Building Program, which prepares students for the General Educational Development Test (GED). The College offers GED testing, and Adult Transitions counselors will assist students with their transition to WCC's regular college programs. The program uses an open-entry model of instruction to help tailor instruction to the needs of the students. Orientations for enrollment are available each week on WCC's main campus, the Harriet Street Center, and the Western Center.

In addition, scholarships based on financial need are available to students who enroll in Washtenaw Community College's short-term certificate programs. A few of the many available programs include: Accounting, Computer Software Applications, Residential Planning and Estimating, Business Sales and Marketing, Nursing Assistant Skills, and Child Development. Adult Transitions can also provide assistance in accessing other appropriate college and/or community resources. For a more detailed description of the short-term certificates, refer to the Curriculum section of this Bulletin.

Students should call (734) 677-5006 or refer to our web site at www.wccnet.edu (find GED/Adult Transitions under the *Academic Information* heading) for more information.

English as a Second Language Courses (ESL)

The College offers courses (from beginning through advanced) for students who want to learn English as a second language (ESL). These courses prepare students to enter College academic and vocational programs and to participate in the broader English speaking community. For specific information, contact the English Department at (734) 973-3425.

Public Service Training and Police Academy

The WCC Public Service Training Program provides in-service training courses for employers of public service agencies such as law enforcement, corrections, security, and fire protection. Courses are developed to meet the specific needs of the agencies. They may range from one-day seminars to full-semester programs. Approval by the appropriate professional certification group is sought for all courses offered.

Students who complete Police Academy training receive Law Enforcement Certification. Students who complete the Criminal Justice program requirements in addition to the Academy are eligible for an Associate in Applied Science degree in Criminal Justice Law Enforcement.

Trade Related Instruction/ Apprenticeships

WCC representatives are available to assist in the development of apprenticeship and other employee training programs. Trade-related instruction can be provided for most apprenticeable trades with a college representative working directly with apprentices and sponsoring firms to meet the requirements. Apprenticeship training combines on-the-job training with related classroom instruction to ensure that apprentices master skills with confidence and precision. More than 850 occupational areas use apprenticeships to train workers. These programs of study are approved by both the Bureau of Apprenticeship and Training and the Michigan State Department of Education. For more information, please call (734) 477-8508.

An individual pre-apprenticeship curriculum can be arranged to help individuals prepare for most apprenticeship entrance examinations. Placement in an apprenticeship program is at the mutual discretion of employers, employees, and organizations representing the involved skill trades and cannot be guaranteed. A student may achieve an apprenticeship completion certificate.

Washtenaw Technical Middle College

Washtenaw Community College charters an award winning and nationally recognized public school academy for students entering the 10th or 11th grade of high school. The program operates on the campus of WCC, where students learn how to make the transition from a high school to a college environment. To graduate from the Middle College, a student must complete both WTMC high school requirements and earn a technical certificate or degree from Washtenaw Community Col-

WTMC high school students earn college degrees or certificates

lege. Using the concepts of mastery learning, skill based evaluation, and a heavy emphasis on learning life management skills that support the process of learning, WTMC challenges students to take control of their educations and become leaders. Graduates of WTMC have many options including: entering the workforce directly, continuing at WCC toward an advanced certificate or degree, transferring to a four year college, or pursuing specific technical training at a technical institute.

LifeLong Learning

Washtenaw Community College extends educational resources and facilities to the community by offering non-credit courses, customized training for business and industry, community outreach through courses and services offered at off-campus sites, emeritus classes for people 65 years of age or older, and facility rental for community groups and businesses. A broad spectrum of non-credit classes is offered to the public throughout the year. This includes the following program areas:

- Business and professional development
- Computer and other technologies
- Personal health
- Professional health care continuing education
- Personal enrichment and recreation

A wide range of classes are offered in an online format. For information about these classes, please call (734) 677-5027.

Continuing Education Units (CEUs)

Many LifeLong Learning workshops offer Continuing Education Units (CEUs). The Continuing Education Unit (CEU) is a measure of the amount of organized study a person has completed, and provides an orderly format for the recognition and quantification of non-credit learning experiences. A CEU is officially defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction. CEU's are a nationally recognized recording device for substantive non-credit learning experiences and are an appropriate measure of in-service education and training. Courses for which CEU's are awarded are not eligible for college credit.

CEUs document your learning

Senior (age 65+) Workshops for Emeritus Students

Special opportunities are provided by WCC for county residents who are at least 65 years of age by the start of the credit class semester. At various retirement facilities and nutrition sites throughout Washtenaw County, non-credit courses, workshops and seminars are provided with tuition waived. Registration is conducted on-site. These residents also might be eligible for tuition-free credit and LifeLong Learning classes. Some mandatory fees are required for credit courses. Contact the Special Community Group Education Department at (734) 677-5004 for eligibility details about these workshops.

Customized Training

Credit and Non-credit for Organizations

WCC offers customized credit and non credit seminars, workshops and classes for county businesses, labor, governmental organizations, community organizations, and professional groups. These educational experiences are designed to help the county and its citizens to be globally competitive and economically viable.

Set up a class for your business

Depending on the client's needs and objectives, programs can range from half-day workshops to semester-length courses or even associate degree programs spanning several years. Traditional college credit courses are also offered as part of the College's response to the specific educational requirements of business, labor and government. Courses are taught either on campus or at a client's site, whichever is most convenient and most appropriate for the subject and skills being taught. Contact (734) 677-5008 to find out more.

Other Places to Learn

Distance Learning (College On Demand)

The College offers college credit courses at a distance utilizing a variety of methods such as the Internet, video lectures, and textbooks. The online components often include discussion boards, interactive activities, supplemental resources, and assessment. Students do not attend classes on-campus although proctored testing is required in some courses.

Technical help desk (734) 477-8724 codhelp@ wccnet.edu

Basic computer skills are required as all course work is submitted online. Students considering these classes must have experience using word processing software, e-mail, and the World Wide Web, as well as access to specific hardware and software that meet technical requirements in order to participate in class instruction and discussion.

The College provides free student e-mail accounts, and offers an introduction for students who want a preview of the skills needed for these classes. Register for the introduction at www.wccnet.edu/academicinfo/collegeondemand and start it most any time during the semester. Successful completion of the introduction meets the computer literacy requirement for graduation.

The Center for Instructional Design and Technology provides telephone (734-477-8724) and e-mail (codhelp@wccnet.edu) support for students.

Go to www.wccnet.edu/collegeondemand to get further details on available courses and requirements.

Flexible Learning Options

Blended classes
A combination of online learning with regular campus class sessions

Online Learning -- College on Demand
Online courses are taught via computer and the internet with a variety of interactive activities

Weekend Study
Campus classes held on the weekend

Extension Centers
Classes in locations that may be more convenient to your work or home

Extension Sites

WCC offers a variety of credit and non-credit courses at various sites throughout its Washtenaw/Livingston county service area.

The four WCC extension and community center offices are:

Eastern Area:

Harriet Street Center
332 Harriet Street
Ypsilanti, MI 48197
(734) 480-9950

Western Area:

Western Center
7920 Jackson Road
Ann Arbor, MI 48103
(734) 424-0182
Class Locations: WCC Western Center and Dexter High School

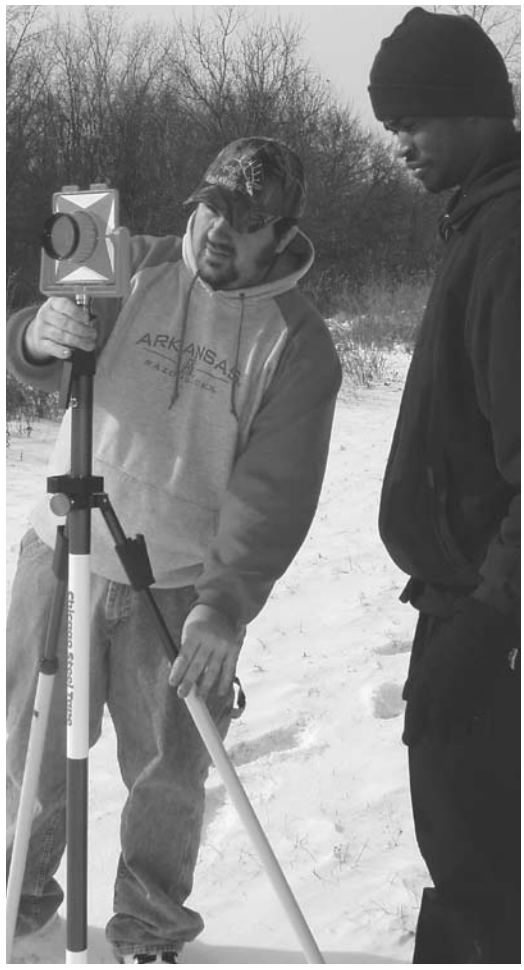
Northern Area:

Brighton Center
Brighton High School
7878 Brighton Road
Brighton, MI 48116
(810) 299-4195

Hartland Center
Hartland Educational Services Center
Mailing Address:
9525 Highland Road
Howell, MI 48353
(810) 626-2152

The Harriet Street, Western, Brighton, and Hartland Centers offer credit classes during Fall, Winter, and Spring/Summer semesters. Please consult the current class schedule for course information. Non credit classes are available at the Harriet and Western Centers only.

Centers offer entry assessment for new students, academic advising to new and continuing students, and assisted registration for credit and non-credit courses. Students should contact the respective office for information regarding these services.



Admission and Registration

In this section

Admission Overview 18
General Admission Policy 18
Programs with Admission Criteria 18
Admission to High-Demand Programs 18
The Student Connection Answers Questions 18
Admission Procedures 19
New Students 19
Two-Part Process 19
Assessment Test 19
Testing Center 19
Academic Levels 19
Prerequisites 19
Exemptions 19
Re-admission of Former Students 20
Dual Enrollment of High School Students 20
Guest Students From Other Colleges 20
Transfer Students 20
Health Occupation Students 20
International Students Seeking a Student (F-1) Visa 20
International Students in U.S. On Visas Other Than a Student (F-1) Visa 21
Registration 22
Student Photo ID Cards 22
Adding & Dropping Courses 22
Withdrawing From Class 22
Auditing a Course 22

Admission steps

Apply online at www.wccnet.edu

Complete online orientation using student number

Schedule and attend campus orientation

Submit SAT or ACT scores or take COMPASS assessment

Applicants taking classes while in high school

Must also submit signed consent forms

Meet assessment minimums

Health Occupation Students and International Students

Complete the admission process and any additional requirements

Admission Overview

WCC is open to all individuals who can benefit from its educational programs and service. These focus on the individual's growth and development toward academic, career, and personal goals. The College seeks to create an admission process which assists applicants in learning about WCC programs as they relate to the individual's goals, thereby facilitating the best match of student and program.

General Admission Policy

WCC serves a wide and diverse population through its open-door admission policy. Any person who has graduated from high school, has a GED certificate, or is 18 years of age or older, and can benefit from the College's programs may be admitted. All new students are required to complete an assessment and, depending on the results, may be required to take preparatory courses before they take courses in the regular college-level curriculum. Under certain conditions, students may qualify for an exemption from the assessment. These exemptions are explained in the Admission Proceedures following this section. This policy has been developed in accordance with Federal Ability-to-Benefit Regulations, which require that the College demonstrate that all students it admits have the ability to benefit from their chosen educational program. Applicants under 18 years of age who wish to take classes at the College while they are in high school may be admitted if they do the following: Submit the dual enrollee consent form signed by their high school principal or counselor as well as their parent or guardian; and achieve Academic Level 6 in Reading and Writing on their assessment test. Admission to the College does not guarantee admission to programs which have specific program entry requirements.

Open-door admission

Applicants should not regard enrollment out of reach because of financial need. It is the policy of the college to assist with meeting college expenses to the fullest possible extent consistent with federal, state, and college financial assistance regulations.

Programs with Admission Criteria

Some Washtenaw Community College programs have prerequisite course work that must be completed prior to program enrollment. Program prerequisites are determined by faculty and outside accrediting agencies based on program curriculum. In most instances, these programs require a second admission process. WCC's Office of Admissions is responsible for informing, monitoring, and processing students who are interested in enrolling in these programs.

Admission to High-Demand Programs

The Administration will establish, maintain, and use a waitlist for admission into any program that it has designated as a high demand program (one for which there are more qualified applicants than openings for an entering class). The order of the waitlist will facilitate a first-in, first-out treatment of applicants within stated priorities:*

Priority 1: Legal residents of the Washtenaw Community College district.

Priority 2: Legal residents of counties adjacent to the Washtenaw Community College district.

Priority 3: Legal residents of all other counties of the State of Michigan.

Priority 4: Persons whose legal residence is outside the State of Michigan but within the United States.

Priority 5: Persons whose official residence is a foreign country.

All potential students, regardless of residency, may apply to the College. Admission to WCC does not guarantee admission to high demand programs. These may include programs which lead to certification or licensure, as well as other WCC certificate or degree programs.

*In cases where there are not sufficient in-district clinical sites for a program and where Out of District sites are available but require special consideration of Out of District students, the Administration may establish and maintain parallel priority lists.

The Student Connection Answers Questions

The Student Connection is a resource for online business at WCC, such as the admissions process, registration, checking grades, and viewing the online schedule. The staff can also assist students in ordering transcripts, reporting a change in address, and applying for graduation. The Student Connection can be reached by calling (734) 973-3543 or visiting the second floor of the Student Center Building, across from the Cashier.

Admission Procedures

New Students

All applicants who wish to take credit classes are required to go to www.wccnet.edu to complete an online admission application. New students, regardless of experience or educational background, are urged to meet with a counselor or advisor. Applicants are also required to complete the two-part orientation process and assessment.

Two-Part Orientation Process

New students are required to complete an online orientation as well as attend campus for an orientation session before they will be admitted as students. The online orientation must be completed after the applicant has been assigned a student number and before the student can attend a campus orientation.

Applicants whose native language is not English, and who plan to take English as a Second Language classes, do not have to take the online orientation before attending campus orientation.

Assessment Test

After online and campus orientations have been completed, the College requires assessment tests of applicant skills in Reading, Writing, and Mathematics before admittance is granted. The College is open to all who can benefit: these scores merely help place applicants into the appropriate classes for their skill level.

Assessment gets students started

Students who have taken the ACT or SAT and requested that their scores be sent to Washtenaw Community College are not required to take the COMPASS assessment at the College before they are admitted. Students who took one of those tests but did not specify Washtenaw Community College may provide their official report to Enrollment Services if they wish to be excused from the COMPASS assessment and are encouraged to do so before orientation.

Applicants who do not provide ACT or SAT scores are required to take the COMPASS, an untimed assessment test of their skills, before they are admitted. The COMPASS is taken on the computer and is offered in the Testing Center at no charge.

Non-native English speakers who are not fluent in English and plan to take English as a Second Language (ESL) classes should request the ESL COMPASS. These students will be exempt from the online orientation but will be required to attend a campus orientation before they are admitted.

Students who have a documented disability and need an accommodation for the assessment test should visit Learning Support Services (LSS) in room 104 of the Crane Liberal Arts Building (734 973-3342.)

Assessment at the Testing Center, 3rd floor SC

Students who do not provide ACT or SAT scores will take their assessment test in the Testing Center before they are admitted. Once in classes, students may have the opportunity to take class tests here.

Test takers should bring their WCC ID or another photo ID and please do not bring children because they are not allowed into the Testing Center.

Academic Levels

Applicants are assigned Academic Levels in Reading, Writing, and Math that are based on their assessment test.

Most courses require a specific Academic Level in Reading and Writing, and some also require an Academic Level in Math. These prerequisites are listed in the course descriptions and in the academic class schedule.

Academic Levels usually rise as students work on their skills

If the phrase "No Basic Skills" is listed, all Academic Levels are acceptable for the course.

Academic Levels can be found in the student's data by logging into *MyWCC*, clicking *Student Records*, and choosing *View Test Scores and Academic Level*.

Students who wish to take a particular course should make sure that their Academic Levels match or are above the Academic Levels in Reading, Writing, and Math listed for that course.

Students who do not meet the Academic Levels listed for a particular course may work to meet that Academic Level by taking specific classes. WCC counselors and advisors help students consider their class options. There is a chart that lists the scores and classes necessary to meet a specific academic level and it can be found in front of the course descriptions in this publication.

If the College has more than one assessment for the student in its records, such as the ACT, the SAT, COMPASS, and particular classes, the College uses the highest scores or class(es) to assign the Academic Level to the student.

Prerequisites

Prerequisites are requirements that students need to meet before they may register for a course. Most 100 and 200 level courses require an Academic Level of 6 in Reading and an Academic Level of 6 in Writing.

In addition, there may be other courses that students must complete satisfactorily or another qualification to meet before registration is permitted for a particular course. These requirements are also listed in the course descriptions and in the academic class schedule.

Exemptions

- **Exemptions from both Campus Orientation and Assessment are granted if the applicant meets one of the following*: (applicant must still complete online orientation)**
  1. Applicant documents completion of 15 or more academic credit hours from an accredited U.S. college with a cumulative grade point average of 2.0 ("C") or above on a 4.0 scale.
  2. Applicant provides official documentation of completion of a bachelor's or graduate degree from an approved international English-speaking college or university.
  3. Applicant is a Ford, General Motors, Chrysler, Visteon or other approved apprentice.
  4. Applicant submits a valid guest student application from their home institution indicating that they are in good standing.

  * *These exempt applicants will be assigned Academic Levels of 6 in Reading, 6 in Writing and 2 in Math.*

Exemptions continued on next page

Students seeking a Student Visa (F1)
Application Deadlines
Supply all documents by:

July 15 for Fall Admission

November 15 for Winter Admission

March 15 for Spring/ Summer Admission

Submit:

Online Application

TOEFL or MELAB scores

Personal Representative form

Original letter on bank letterhead showing enough funds to support student

Notarized financial statement from financial supporter that funds will be used to support student

Original certified transcripts in English of all schools attended

- **Exemption from just Basic Skill Assessment is granted if you meet the following (Applicant must still complete online orientation and attend campus orientation):**

  Applicant provides ACT, SAT, COMPASS or ASSET scores. Submit scores directly from ACT, SAT, provide your original score report, or have the scores submitted on your official high school transcript.

  Note: Some occupational programs have an additional screening process.

Note: Physically handicapped students who need readers or writers to help them take the COMPASS or ASSET assessment should contact Learning Support Services for assistance (734-973-3342).

Re-admission of Former Students

Former students who have not taken credit classes at the College for two years must reactivate their files by completing the online application form again. The application form can be submitted online (www.wccnet.edu). Students reactivating their files are encouraged to see a counselor or advisor prior to registering for classes. Individual assessment and online orientation may also be required.

Dual Enrollment of High School Students

High school students who are 15 years of age or older, in the tenth grade or above, and who wish to take classes at the College while they are in high school may be admitted if they do the following: Submit the dual enrollee consent form signed by their high school principal or counselor as well as their parent or guardian; and achieve Academic Level 6 in Reading and Academic Level 6 in Writing on their assessment test. These applicants cannot take more than seven credit hours per semester. Signed dual enrollee consent forms must be submitted each semester. Students under 18 years of age who have emancipated legal status do not need the signature of a parent.

Guest Students From Other Colleges

Students enrolled at other colleges and universities may attend WCC as guest students. This status is secured through completion of a Michigan Uniform Undergraduate Guest Application. This application can be obtained from the home institution and should be sent to the WCC Office of Admissions or dropped off in person at the Student Connection. Guest students may continue at the College in subsequent semesters without submitting another guest application. However, to ensure course transferability, the College strongly encourages guest students to discuss their course selection with their home school.

Transfer Students

Students transferring from other colleges follow the same procedure as new students. Those wishing to transfer credit from an accredited college or university may do so by requesting that an official transcript be sent to Enrollment Services for evaluation. The coursework may be evaluated, at the student's request, after the student has successfully completed at least one credit at WCC. At the time coursework is evaluated, the student is notified of the transfer credit that will be accepted toward program requirements at WCC. Students are encouraged to use the MichiganTransferNetwork.org on the web for a preliminary review of which courses will transfer.

Health Occupation Students - Special Admission Requirements

Applicants to the health occupations (e.g. Nursing, Dental Assisting, Pharmacy Technology, Radiography, and Physical Therapist Assistant) must meet specific admission requirements for their program. Generally these are:

1. Compliance with the published application deadline for each program.
2. Graduation from high school or completion of the GED.
3. Completion of specific high school and/or college courses required for acceptance. Courses must be completed with a specific grade as noted for each program.
4. Qualification on certain diagnostic reading, comprehensive and/or computational tests as required for each program.
5. Completion of the program-specific application materials.
6. Submission of a high school transcript and college transcripts with the program application.
7. Any other program-specific admission requirements.

International Students seeking a Student (F-1) Visa

Admission Requirements for International Students (F-1 visa only)

To be admitted to Washtenaw Community College, an F-1 visa applicant must complete the following requirements:

1. Submit an Application for Admission. The application can be submitted online via the College web site: www.wccnet.edu
2. Students who intend to have someone other than themselves contact WCC about their admissions process must submit the Personal Representative Form found on the College web site.

3. Submit an original letter (in English) on bank letterhead from the applicant's financial supporter, converted to U.S. dollars, showing that the account balance of the financial supporter will cover the applicant's tuition, fees, and living expenses while attending WCC. Applicants who submit an official translation should also submit the original document from which the translation was done. To find out the required amount in U.S. dollars, please refer to the Notarized Financial Statement Form found on the College web site.
4. Submit a **notarized financial statement (in English)** from the applicant's financial supporter stating that the funds in the bank will be used to support the applicant's tuition, fees, and living expenses while attending. (NOTE: F-1 students are not eligible for financial aid.)
5. Submit original certified transcripts (in an envelope sealed by the issuing institution), in English, of all previous secondary and post-secondary schools the applicant has attended. If submitting an official translation, please also submit the original document from which the translation was done.
6. Proof of English language proficiency for admission to the **regular college curriculum,** a *minimum* score of:
   - 500 on the paper Test of English as a Foreign Language (TOEFL), OR
   - 173 on the computer Test of English as a Foreign Language (TOEFL), OR
   - 75% or better on the Michigan English Language Assessment Battery (MELAB), OR
   - 61 or better on the internet-based Test of English as a Foreign Language (TOEFL)

   Original test scores must be received by Washtenaw Community College directly from the testing authority. (Our TOEFL identification number is 1935.) The College will not accept scores submitted by the student; only those submitted by the testing authority will be accepted.

   When **all** of the above requirements have been completed satisfactorily by the F1 application deadline, Washtenaw Community College will be able to admit the applicant.

Deadlines

All documents must be received by the College by the designated deadline date. If the date falls on a weekend or holiday, the deadline is the first business day after the weekend or holiday.

Fall admission: July 15
Winter Admission: November 15
Spring/summer admission: March 15

Upon arrival in Ann Arbor, students must do the following in order to keep F-1 status:

1.Show proof of medical insurance with medical evacuation and repatriation clause. **F-1 students must submit proof of insurance to the Office of Admissions before they will be permitted to register for classes.** Coverage must be maintained while studying at WCC. The student will not be allowed to register for future semesters at WCC if their insurance policy is cancelled. WCC does not maintain coverage for students and is not responsible for any medical, hospital, evacuation or repatriation expenses which they may incur.

2.Provide verification of visa status. F-1 visa applicants currently in the United States must include copies of their I-94 card, visa and passport page with photograph and dates of issue and expiration of the passport. Students who currently hold an F1 visa must include a copy of their Form I-20.

3.Schedule an appointment for the Washtenaw Community College Orientation and Assessment. Visit Orientation and Assessment on the College web site for more information (look under the Student Services heading). Assessment and Orientation must be completed before the student will be allowed to register.

NOTE: Once submitted, all documents become the permanent property of Washtenaw Community College.

Applicants who are granted an F-1 visa must enroll and successfully complete at least 12 credit hours, in Fall and Winter semesters, toward graduation in their approved program at Washtenaw Community College. WCC is only authorized to admit F1 students for programs that lead to an Associate of Arts or an Associate of Science degree.

F-1 visa holders are not permitted to work off-campus without proper authorization: please see the Admissions office for more information.

For More Information:

For specific questions regarding enrollment, please contact International Student Admissions at (734) 973-3542. If requested, the necessary forms found on the College web site can be mailed.

International Students in U.S. On Visas Other Than a Student (F-1) Visa

International students range from permanent resident aliens to a visitor on any visa from an A visa to a V visa, including refugees and people with asylum status. Certain restrictions may apply depending on which status you may hold in the United States.

Permanent resident aliens (green-card holders) who wish to attend WCC are unrestricted in the number of credit hours for which they may register. Admission procedures for permanent resident aliens are as follows:

Submit a completed application with a copy of your Permanent Resident Alien Card (front and back), and also include a copy of your driver's license or State Identification showing where you currently reside.

International applicants who possess refugee status or political asylum in the United States who wish to attend WCC are unrestricted in the number of credit hours for which they may register. Admission procedures for refugees and political asylees are as follows:

Submit a completed application for admission with a copy of your passport, appropriate documentation showing your status, and a driver's license or State Identification to show where you currently reside.

Admission requirements for other visa holders are as follows:

Submit a completed application for admission with a copy of your passport, I-94 card, and a copy of the visa that you currently hold.

Students with non-immigrant status (specifically those with B1, B2 or F2 status) should first apply and receive a student visa if they are planning to pursue a course of study. B1, B2, or F2 visas allow students to take only an occasional course for recreation.

There are two Orientation programs offered for new international applicants:

1. International applicants who have taken the TOEFL and scored a minimum of 500, or have taken the MELAB and scored 75 percent or more, must be scheduled for an Orientation which includes COMPASS assessment before registering for classes.
2. International applicants other than F-1 visa holders (or anyone interested in English as a second language (ESL) classes) who have not taken the TOEFL or MELAB test, or who have taken the test and scored below the minimum, must schedule an appointment for the International Student Orientation that includes the English as a Second Language (ESL) Placement Test before registering for classes.

Registration

Each semester the College publishes an Academic Class Schedule and puts it on the College web site (www.wccnet.edu). The schedule includes detailed information on the courses available, registration procedures and dates, add/drop periods, and the refund schedule. Students are expected to pay all tuition and fees by the specified deadlines and before attending class.

No person is allowed to attend a class unless he/she has registered and paid for that class.

Students are withheld from registering if they have failed to meet their financial responsibilities to the College or in certain situations as a result of disciplinary action. Any student registration restriction ("hold") must be cleared with the office issuing it before registration may be completed.

All students are encouraged to see a counselor or faculty advisor before registering for classes. Students registering for 18 or more credits must have the authorization of a counselor. Students on Academic Intervention hold, or foreign student (ESL) hold must meet with a counselor or advisor before registering for courses.

Students registering for courses must satisfy the course prerequisites as specified in the course description.

By registering for classes at Washtenaw Community College, the student accepts responsibility for reading and conforming to all policies, procedures, deadlines, fees, and other requirements published by the College. The student must report billing errors to the College within 30 days.

Student Photo Identification Cards

Student should take their current schedule and photo identification to the Security Office on the 2nd floor of the Student Center Building to get their first WCC Student ID card. This is used to take tests in the Testing Center, get reserved books, use library resources and in other areas on campus. Lost cards cost $10 to replace.

Adding and Dropping Courses

A student may add or drop a class or change a section without an instructor's approval on a space-available basis prior to the start of the session. After the session begins, students must have the instructor's authorization in order to add a class or change sections and this process must be completed by the add deadline in the academic schedule of classes (available online).

Drops by the deadline are given full tuition refunds

Students are encouraged to discuss changes, drops, and adds with instructors or counselors and should print and retain copies of their final schedule until final grades or refunds are received. Students are responsible for the timely payment of all appropriate tuition and fees for added courses. Students who process their drops by the 100% refund deadline will receive a 100% refund of their tuition, technology/enrollment and contact hour fees. All other fees are non-refundable.

Withdrawing from class (after refund deadline)

Students are responsible for officially dropping courses they are no longer attending. If students withdraw from a course after the refund deadline, the student is responsible for paying full tuition and fees for the course. Courses from which the student withdraws after the refund deadline will be listed on the student's transcript with a grade of "W". Students may withdraw from courses until two weeks before the session ends.

Exception: Students do not have the option of withdrawing from short session classes that are less than 5 weeks long. Students in these short classes who wish to withdraw may speak with the instructor about the possibility of recieving a withdrawal as a final grade.

Insurance companies, the Veterans Administration, and Financial Aid do not count withdrawal status as actively pursuing an education and will not consider classes taken in withdrawal status toward full-time status or other credit hour eligibility. This may also apply to scholarships, payments by employers and so on. Please check with the appropriate institution before you withdraw.

Auditing a Course

Students who wish to audit a course must register and pay for that course following the established registration procedures. Students do not receive credit for the course; however, the course is included on the transcript with an "AU." Students may change from credit to audit status or vice versa early in the semester without the instructor's permission. Students may make the same changes later in the semester if the instructor's authorization is obtained. Refer to the published deadlines in the Academic Class Schedule for the semester in question.

If tuition is sponsored, audited classes may not be covered

Insurance companies, the Veterans Administration, and Financial Aid do not count audit status as actively pursuing an education and will not consider classes taken in audit status toward full-time status or other credit hour eligibility. This may also apply to scholarships, payments by employers and so on. Please check with the appropriate institution before you audit classes.

Financial Information

In this section

Tuition and Fees 24

Tuition Rates 24

Fees 24

Billing & Payments 24

Student Payment Plan: ePayPlan 24

Refunds 24

Residency 25

Funds for Special Populations 25

Emeritus: Students 65 Years of Age or Older 25

Veteran Students 25

Transfer Students 26

Single Parents and People Entering Nontraditional Careers 26

Adult Transition Students Earning Job Skills Certificates 26

Financial Aid 26

Aid That You Do Not Have to Pay Back 27

Grants 27

Scholarships 27

Work-Study 29

Other Aid 29

Aid That You Must Pay Back 30

Loans 30

Tax Credits 32

Student Payment Plan: ePayPlan

Schedules payments over the semester

Electronic payments are taken from

- Checking accounts
- Savings accounts
- Visa
- MasterCard
- Discover

No interest charges

$25 charge each semester

Fee if payment withdrawal fails

Tuition and Fees

Tuition Rates*

In-District	$70 per credit hour
Work In-District	$70 per credit hour
Property In-District	$70 per credit hour
Out-of-District	$121 per credit hour
Out-of-State	$164 per credit hour
Out-of-Country	$164 per credit hour
Distance Learning Instruction	$72 per credit hour

Work In-District: Full-time or part-time workers who can document that they work at least 30 hours per week for one or more employers in Washtenaw County, and have done so for at least 4 months can request this tuition rate.

Property In-District: Students who can document that they own and reside in residential property in Washtenaw County can request this tuition rate. This rate will apply to the student, the student's spouse, and the student's IRS dependents.

Fees*

Technology/Enrollment Fee (per credit hour)	$7
Late Add Fee	$25
Delinquent Payment Fee	$25
Student Photo ID (replacement only)	$10
Contact hour fee (per additional contact hour)**	$3
Credit by Exam Fee (per credit hour)	$25
Books and Supplies	***
Payment Plan (processing fee)	$25

* *The college reserves the right to change tuition and fees without advance notice.*

** *When the course includes contact with the instructor for more than the ratio of 15 hours per semester for each credit hour, students will be charged a contact hour fee of $3 for each additional contact hour, in addition to tuition and any other applicable fees. The contact hours are specified in the course descriptions and the fee will be limited to no more than $200 per course.*

*** *Students may be required to purchase certain supplies and materials. These are available at the bookstore on the 1st floor of the College's Student Center Building. Books and supplies average $300 per semester for full-time students, but may be as high as $500 or more depending on course selections.*

Billing and Payments

Payments are due by the deadlines specified each semester. WCC does not mail tuition bills: students can access their bill and their current account balance by going to www.wccnet.edu and clicking *How To Pay Tuition* and then choose *Log In Billing & Payments*.

By logging into *Billing and Payments*, students can pay their bill online, print their bill, schedule payments on a payment plan to be taken from their credit card or bank account, or authorize parents/guardians access to the billing process.

Billing notices are sent via e-mail: students who wish to receive a billing notice need to activate and check their WCC e-mail account regularly. At the top of the College home page at www.wccnet.edu is a heading called *Resources*, and directions for how to activate e-mail can be found under the *E-mail* choice.

Refunds

Refunds are only processed after a student has officially dropped a course(s) or a course is cancelled by the College. If a course is officially dropped, a student is eligible for a refund of tuition as follows:

1. The refund deadline for courses scheduled for 12 or more weeks will be the 12th calendar day of the session.
2. The refund deadline for courses scheduled for sessions of two to eleven weeks will be one calendar day for each week the course is scheduled to meet, e.g., ten days for ten week courses, five days for five week courses, etc.
3. The refund deadline for courses scheduled to meet in parts-of-term of less than two weeks in length will be before the first class meeting.
4. If the refund deadline falls on a non-business day of the college, the refund deadline will be set as the next official business day.
5. The refund deadline does not apply to course section changes or to instructor approved course level changes processed within a part-of-term.
6. Students dropping and adding courses after the official refund deadline are not eligible for a refund and must pay the tuition for the added classes.
7. A credit voucher or full refund of tuition may be administratively granted upon official withdrawal of the student for the following extenuating circumstances during the first two thirds part-of-term/semester:

a. Induction of the student into the U.S. or foreign Armed Services
b. Death of a spouse, child, parent, or legal guardian of the student
c. Death of the student
d. Verifiable error on the part of the College
e. Verifiable incapacity, illness, or injury which prevents the student from returning to school for at least four (4) weeks of the semester
Note: Not every medical situation will qualify for a refund, especially if the student received a refund for the same medical condition in a prior semester. Pregnant students should not expect a refund if their expected date of delivery is before their classes end.

8. All fees except technology/enrollment fee are non-refundable.

No refund or credit voucher is issued if withdrawal occurs after two-thirds of the session has transpired, regardless of circumstances.

Residency

Students enrolling at Washtenaw Community College shall be classified In-district, Out of District, Out of State, or Out of Country at the time of enrollment.

Aspects of Residency

A. The residency of a student will be based on the address where the student resides.

B. The legal residency of a student will be established using the address and other pertinent information submitted on the application and registration materials but will be verified by the College.

C. The residency of minors (under 18) shall follow that of their parents or legal guardian. However, students under 18 who provide sufficient evidence that they are independently supporting themselves and reside in the Washtenaw Community College District may qualify as in-district residents regardless of their parent's residency status.

Tuition rates are based on residency

D. The residency of any person who may furnish funds for payment of College fees (other than a parent or legal guardian with whom the minor student resides) shall in no way affect the residency of the student.

E. Those students who are transferred to Michigan by the military or who have been discharged by the military within the last six months must present appropriate documentation to waive the six month Michigan residency requirement.

F. The student may petition to officially change residency status by supplying proof of residence to Enrollment Services. Any residency status change requested by the student after the start of the semester will be effective the next semester in attendance.

Classification of Residence

Applicants who are U.S. citizens or who have permanent resident alien, asylum, or refugee status through the U.S. government will be classified as In-District, Out of District, or Out of State students.

In-District Students are:

- Applicants who have resided in…
- Applicants who live with and whose spouse has resided in…
- Applicants who live with and are dependent on parents or a legal guardian who has resided in…

• the Washtenaw Community College District immediately prior to the first day of the semester if previous residency was within Michigan

OR

• the Washtenaw Community College District now and in Michigan for 6 months immediately prior to the first day of the semester if previous residency was outside of Michigan

Out of District Students are:

• Applicants who do not meet the requirements of an In-District student, but who are and have been legal residents of the State of Michigan for at least six months.

Out of State Students are:

• Applicants who reside outside the state of Michigan or who have not been legal residents of the State of Michigan for at least six months.

Out of Country Students are:

• Applicants who are not U.S. citizens nor do they have permanent resident alien, asylum, or refugee status through the U.S. government.

The College reserves the right to ask for additional documentation to confirm residency status.

Funds for Special Populations

Emeritus: Students 65 Years of Age or Older

Individuals who are 65 years of age or older prior to the first day of the semester and who reside within Washtenaw County may participate in the College's credit and LifeLong Learning classes without tuition costs. However, these students must follow the general admission criteria of the College and pay the class-related mandatory course fees, if applicable, each semester.

Emeritus students not paying tuition are registered for classes on a space available basis. If the class chosen by an emeritus student fills to capacity, the student will be notified by telephone and be given the option of staying in the class by paying the tuition. Or if the student prefers to have the emeritus scholarship applied to the full class, s/he will be placed on a waitlist for the class and an attempt will be made to move him/her into the class (based on seat availability).

Veteran Students

New Students

Veterans who may be qualified for benefits from their time in the service may make application to use their benefits at Washtenaw Community College and should report to the Veterans Services Technician in the Enrollment Services Office (before registering for classes) in order to receive a packet of Veterans Benefit Application Forms. Students should bring certified copies of their DD-214 member 4 copy (military

Types of Financial Aid

Many types of Financial Aid are available.

- Aid that you do not have to pay back:
  - Grants
  - Scholarships
  - Work-Study
  - Other Aid
- Aid that you must pay back:
  - Stafford Loans for Students
  - Parent Loan for Undergraduate Students (PLUS)

The application process for each type of aid is similar. Complete the financial aid application process at *www.fafsa.ed.gov* to get started.

Look for additional requirements in the section on each type of aid.

Although not financial aid, tax credits are also available.

discharge papers) to WCC. Students in the selected reserve should bring their NOBE (notice of eligibility) form. Students who have prior educational training or military training must provide official transcripts with their application for benefits.

Apply for Veteran Benefits before you start classes

Transfer Students

Students who have previously received VA educational benefits at another school must complete VA form 1995 (Change of Place of Training) and submit it to the Veteran Services Technician in the Enrollment Services Office. The DD-214 member 4 copy (military discharge papers), transcripts from colleges or universities where the student has completed previous training, and all military transcripts must accompany the application.

WCC Previously Enrolled Veterans

Veterans who are continuing students must sign a request for certification at the time of registration each semester in order to be certified for benefits. At that time they must also supply the Veteran Services Technician with a copy of their completed registration to ensure the continuance of their benefits.

Veteran Certification

All veterans receiving educational benefits must sign a request for certification each semester once they register for classes. Any drops or changes made during the semester must be reported to the Veteran Services Technician immediately. Failure to do so may result in the delay of educational benefits.

Credit for Formal Service School Experience

Credit is granted for formal service school training as recommended by the American Council on Education (ACE) if it applies to the student's program of study at WCC. To have your formal training evaluated, submit an official military transcript to the Veteran Services Technician.

Standards for Receiving Educational Benefits

In compliance with the Department of Veteran Affairs, the College has developed standards of progress. Each veteran student must conform to these standards to be eligible for VA Educational Benefit Certification. Each veteran student must read, sign and return the original copy of these standards to the Veteran Services Technician at the time of benefit application.

Single Parents and People Entering Nontraditional Careers

The Student Resource & Women's Center provides assistance with career, financial, and educational planning for special populations that include single parents, displaced homemakers, and economically disadvantaged students, and men/women entering non-traditional careers. Some grant funding is available, and the Center has extensive connections to community agencies and resources to help students fulfill their educational plans. Please refer to the Student Resource and Women's Center web pages under the Student Services heading on the WCC web site at www.wccnet.edu or call (734) 677-5105 for further information.

Adult Transition Students Earning Job Skills Certificates

Adult Transitions is a community outreach program that assists students in gaining new skills for today's workforce. The program provides counseling, skill building and GED preparation, and career education. Participating students who are planning to earn a short-term credit certificate may qualify for an Adult Transitions scholarship based on financial need. Some of the many short-term certificates available include Accounting, Computer Software Applications, Residential Planning and Estimating, Business Sales and Marketing, Nursing Assistant Skills, and Child Development. Please refer to the *GED/Adult Transitions* web pages under the *Academic Information* heading on the WCC web site at www.wccnet.edu or call (734) 677-5006 for further information.

Financial Aid

More complete information about financial aid at Washtenaw Community College can be found at the www.wccnet.edu/financialaid site. Not all fields of study are eligible for financial aid. For specific questions that are not answered in this section, visit the Financial Aid Office on the second floor of the Student Center Building or call us at (734) 973-3523.

For information concerning grants for educational expenses, childcare and federal grants for single parents, displaced homemakers, and academically and economically disadvantaged students, contact the Student Resource & Women's Center on the second floor of the Student Center Building or call (734) 677-5105.

Complete the Free Application for Federal Student Aid www.fafsa.ed.gov

Sources of financial aid at Washtenaw Community College include the WCC Foundation, the State of Michigan, and the United States government.

By federal regulation new and re-admitted students who have not graduated from high school or earned a GED must achieve minimal passing scores on the

ASSET/ COMPASS assessment (administered during entry assessment) in order to be awarded federal (Title IV) financial aid.

Aid that you do not have to pay back:

Grants

To apply for the following grants, complete the Free Application For Federal Student Aid application process at www.fafsa.ed.gov. If you are eligible, WCC will notify you in writing.

Federal Programs

- **Federal Pell Grant (PELL)**
  Entitles qualified high need students to receive a grant up to $4,731 per academic year. The Federal Pell Grant is the foundation to which other Federal and non-Federal sources may be added. How much the student actually receives depends on the Expected Family Contribution (EFC) figure and the student's enrollment status. Students may be enrolled in as little as 1 credit hour to receive the Federal Pell Grant. Students enrolled full-time will receive their maximum eligibility in this program. Note: Students can only receive a Federal Pell Grant for the equivalent of 2 full time semesters each academic year.
- **Federal Supplemental Educational Opportunity Grant (SEOG)**
  Federal SEOG's are awarded to students with the lowest Expected Family Contribution (EFC) and the highest financial need. The minimum SEOG award is $400 for an academic year.
- **Academic Competitiveness Grant (ACG)**
  Will provide up to $750 for the first year of undergraduate study and up to $1,300 for the second year of undergraduate study.

  To receive an ACG, a student must:
  - attend full-time
  - receive a Federal Pell Grant during the same award year
  - be a U.S. citizen
  - be a first- or second-year full-time undergraduate student in a degree program at a two-year or four-year degree-granting institution
  - have completed a rigorous secondary school program of study, and
    - if a first-year student: have completed high school after January 1, 2008
    - if a second-year student: have completed high school after January 1, 2007 and have at least a 3.0 grade point average and 31 credit hours as of the end of his or her first academic year of undergraduate study

State of Michigan Programs

Michigan Adult Part-Time Grant (MAPT)

A need based program designed to provide grant assistance for adult students who enroll on a part-time basis. Grants range up to $600 per year for students enrolled 3-11 credit hours. Students must be self-supporting (independent), out of high school at least two years, a U.S. Citizen or permanent resident and a Michigan resident for at least 12 months.

Michigan Educational Opportunity Grant (MEOG)

Provides grant assistance to students with financial need who are enrolled at least half-time. Grants range up to a maximum of $1,000 per academic year. Recipients must be Michigan residents for at least 12 months prior to award, enrolled at least half-time, and be a U.S. Citizen or permanent resident.

Scholarships

There may be a scholarship just for you

Following are scholarship opportunities available to students at Washtenaw Community College and resources that may help you find other scholarships. Most scholarship deadlines occur in May for the upcoming Fall and Winter semesters.

WCC Foundation Scholarships

Thanks to contributions from individuals and corporations, the WCC Foundation provides a "safety net" of scholarship funding for students. Over 900 scholarships are awarded annually.

To apply for a scholarship from the WCC Foundation, log on to www.wccnet.edu, and click on the WCC Foundation link at the left. Fill out only one application per semester and submit it to the Financial Aid office. A Scholarship Committee reviews all applications and assigns specific and appropriate scholarships to those who become recipients.

WCC Foundation scholarship criteria include:

- Completion of the Free Application for Federal Student Aid (FAFSA) is required. Do it at least 3 weeks before the scholarship deadline. The Federal School Code for WCC is 002328.
- Applicant must be a citizen of the United States or an eligible non-citizen, such as a permanent resident alien, or someone who has been granted asylum or refugee status by the United States government. Persons who are in the United States holding a non-immigrant visa are not eligible.
- Applicants must have at least a 2.0 cumulative grade point average in classes relevant to the applicant's area of study. Applicants with less than a 2.0 may also be considered, but only with a recommendation from Counseling. Applicants who are new students should submit interim grades or high school transcripts.
- Applicant must attach one letter of recommendation from an instructor/counselor/employer or a professional who can address applicant's ability to succeed in an academic environment.
- Applicant must attach a typed personal statement of academic and career goals, which should include a brief statement about why the applicant should receive a scholarship (150 words maximum).

For information on how to apply, visit the www.wccnet.edu/foundation website.

Application forms are also available in the WCC Foundation Office (SC 306), the Financial Aid Office (SC 205), or at the Student Resource and Women's Center (SC 2nd Floor). Submit the applicatioin to the Financial Aid Office (SC 2nd Floor).For more information please call (734) 973-3705.

Application deadlines:

For this semester	Apply by
Fall 2008	June 10, 2008
Winter 2009	October 10, 2008
Spring/Summer 2009	February 10, 2009
Fall 2009	June 10, 2009

Start here

Fill out the FAFSA

Use WCC's Federal School Code: 002328

www.fafsa.ed.gov

Students are often eligible for more financial aid than they expect.

Even students who are not eligible for federal financial aid may have to complete a FAFSA to get aid or scholarships.

Financial Aid Office - SC 205

Washtenaw Community College
4800 E. Huron River Dr.
PO Box 1610
Ann Arbor, MI
48106-1610

Telephone:
734-973-3523

Fax:
734-677-5281

E-mail:
finaid@wccnet.edu

Director:
Lori Trapp

Assistant Director:
Bayyinah Ballard

The Morse B. Barker Scholarship

The Morse B. Barker Scholarship Fund gives scholarships annually to students who will be or are attending Washtenaw Community College.

To be eligible, a person must:

- Demonstrate financial need
- Be a permanent resident of Washtenaw County
- Be between the ages of 18 and 30 (includes Ann Arbor high school seniors who plan to attend WCC after high school graduation)
- Carry a course load of at least nine credit hours
- Declare a particular program of study or major field
- Maintain Satisfactory Academic Progress (year-end minimum grade point average of 2.0)
- Be a non-smoker
- Submit an application online at scholarships.egrant.org

Divisional Scholarship Information

The Divisional Scholarship is designed to provide scholarship monies for tuition and books. The scholarships are awarded for Fall and Winter semesters. The recipients must be enrolled in at least 6 credit hours each semester and be considered an in-district student at Washtenaw Community College. Students will receive $300 for books each semester based on a 12 credit hour enrollment. To print the application, go to www.wccnet.edu/financialaid and choose Aid Types, then Scholarships, and scroll to the Divisional Scholarship Information.

Apply in May to get money for Fall & Winter semesters

High School Scholarship Information

Washtenaw Community College offers the President's and Procassini Honor Scholarships for high school seniors who will graduate from a public high school that is in Washtenaw County and reside in-district as defined in the annual Programs and Services Bulletin. Students can apply for both scholarships with the same application. To print the application, go to www.wccnet.edu/financialaid and choose Aid Types, then Scholarships, and scroll to the High School Scholarship Information.

Scholarships may cover two years of study

President's Honor Scholarship

The President's Honor Scholarship is awarded to five in-district students from each public high school in Washtenaw County. A cumulative grade point average (GPA) of 3.2 or better on a 4.0 scale is required. This scholarship pays full tuition for two consecutive semesters (Fall and Winter) plus $300 for books each semester. Scholarship recipients must enroll at WCC for at least 12 credit hours.

The scholarship will be renewed the following year if the recipient maintains a 3.0 cumulative GPA at Washtenaw Community College and completes at least 24 credit hours.

Procassini Honor Scholarship

The Procassini Honor Scholarship is awarded to one in-district student from each public high school in Washtenaw County. The scholarship pays full tuition for Fall and Winter semesters plus $300 for books each semester. This scholarship is awarded on the basis of scholastic achievement and/or outstanding accomplishments in high school. Scholarship recipients must enroll at WCC for at least 12 credit hours.

The scholarship will be renewed the following year, if the student maintains a 2.3 cumulative GPA at Washtenaw Community College and completes at least 24 credit hours.

Michigan Competitive Scholarship

This scholarship provides financial assistance to students who demonstrate both financial need and academic potential. Academic potential is based on the National ACT examination. Those eligible may receive up to the amount of demonstrated need or the amount of tuition, whichever is less, but this scholarship will not award more than $1,300 per year.

Eligibility Requirements:

- Achieve a qualifying score based on the national ACT test. This test is taken in the junior or senior year of high school.
- Be a U.S. Citizen or declare an intent for this status.
- Must have been a continuous Michigan resident since July 1 of the year preceding the academic year for which applying for the scholarship.

To Apply:

- Demonstrate financial need based on the Free Application for Federal Student Aid (FAFSA) by completing the financial aid application process.
- Enroll at least half-time (6 credits or more).

Michigan Merit Award

The Michigan Merit Award is for students who graduated from a Michigan High School from 2000 to 2006. If you graduated from a Michigan High School in 2007 or later, check out the Michigan Promise Scholarship.

The Michigan Merit Award was established to reward academic excellence based on high school assessment tests. Students may earn up to $3,000, which must be used for postsecondary educational purposes. Students who were notified that they are eligible to receive the award need to certify their award by logging on to

www.michigan.gov/mistudentaid and choosing Michigan Merit Award from the right-hand menu, and then completing the online certification. WCC receives a monthly roster of eligible students from the State of Michigan.

Michigan Nursing Scholarship

The Michigan Nursing Scholarship is a non-need based award available to Michigan residents enrolled at least half time at an eligible institution in a program leading to a Licensed Practical Nurse (LPN) certification, Associate Degree in Nursing (ADN), or Bachelor of Science in Nursing (BSN). The deadline to apply is in May for the upcoming Fall and Winter Semesters. See www.michigan.gov/mistudentaid for more information. To print an application, go to www.wccnet.edu/financialaid and choose Aid Types, then Scholarships, and scroll to the Michigan Nursing Scholarship.

Michigan Promise Scholarship

The Michigan Promise Scholarship is for students who graduated from a Michigan High School in 2007 or later. If you graduated from a Michigan High School from 2000 to 2006, check out the Michigan Merit Award.

The Michigan Promise Scholarship provides up to $4,000 to high school graduates for successfully completing two years of postsecondary education beginning with the high school graduating class of 2007. Students who were notified that they are eligible to receive the award need to certify their award by logging on to www.michigan.gov/studentaid and choosing Michigan Promise Scholarship from the right-hand menu, and then completing the online certification.

Resources

- National Resources
  - www.fafsa.ed.gov - Opens the door to the federal aid process
- State Resources
  - www.michigan.gov/mistudentaid/ - State financial aid sources and scholarship search

Work-Study

Federal and State Work-Study programs provide jobs for students with unmet financial aid need, giving them the opportunity to earn money to pay educational expenses. The amount of the award depends on the student's financial need and available funding. If the student is eligible for work-study employment, he/she is placed in a job on or off campus. Eligible students may work up to 20 hours per week and are paid an hourly wage, bi-weekly for hours actually worked. Details on this program are available from the Employment Services Office.

Eligibility

To be eligible for Work-Study you must:

- Complete the Free Application for Federal Student Aid (FAFSA).
- Be enrolled in at least 6 credit hours
- NOT be terminated from financial aid as determined by the WCC standard for Satisfactory Academic Progress
- Turn in any required paperwork
- Submit a Work-Study application to the Financial Aid Office. The application can be found at www.wccnet.edu/financialaid by choosing the Forms item on that web page.

There are a limited amount of funds for Work-Study. Priority is given to students who were awarded Work-Study for the previous year.

Accepting

Once you have been awarded Work-Study you will need to contact the Employment Services Office, SC 287, to:

- Learn about Work-Study expectations and what jobs are available.
- Complete the necessary paperwork for Work-Study placement.
- After being hired, receive the Authorization for Employment form.

Work-Study funds are paid by bi-weekly via paycheck. Work-Study funds are not applied directly to the student's tuition bill.

Terms and Conditions

Work-Study provides jobs for students to earn part of their educational expenses. The amount of the award depends on the student's financial need and the availability of funds. If eligible for Work-Study, the student is placed in a job on campus. When possible, the job assigned will relate to the student's area of study and/or interests. Please note:

1. Students who demonstrate financial need are eligible to participate in this program as long as funds are available.
2. Eligible students may work up to 20 hours per week, depending on the job classification, but cannot work during scheduled class sessions.
3. Students are paid an hourly rate under this program. The rate as of Spring/Summer 2008 was $8.75 per hour.
4. Students have the right to interview for the positions designated as Work-Study jobs if they have the qualifications required.
5. Since Work-Study positions are provided to meet the financial need of students, they must work as assigned if all budgeted expenses are to be met.
6. Students must abide by the rules and regulations set forth by the department or agency to which they have been assigned, such as work schedule, attendance requirements, dress, etc.
7. If students decide not to continue a Work-Study job, they must immediately notify the department to which they were assigned and the Financial Aid Office.
8. If a student drops below 6 credit hours during his/her Work-Study employment, he/she is no longer eligible to work and must stop working immediately.
9. WCC cannot guarantee placement in a Work-Study job. Due to funding limitations and the number of students working, it may be necessary for the College to discontinue job placements and terminate employment if funding is no longer available.

Other Aid

Tuition Incentive Program (TIP)

Phase 1 of the Tuition Incentive Program (TIP) pays community college tuition and fees at the in-district rate for students from low income families. To be eligible, students must:

Native American Tuition Waiver (ITW) Program

Free tuition (not fees) for academically qualified Native American Students.

Requirements:

Be at least one-quarter Native American descent enrolled in a degree, certificate or transfer program

Submit tribal certification from the Inter-Tribal Council

Contact:

Harriet Moran Inter-Tribal Council of Michigan, Inc.

405 E Easterday Avenue
Sault Ste Marie
Michigan 49783

Phone:
1-800-562-4957
(extension 3038)

Fax:
1-906-632-1810

www.itmci.org

- Be a U.S. citizen or lawfully admitted alien with permanent status
- Be a resident of Michigan (according to Washtenaw Community College policy)
- Have graduated from high school or completed a GED after May 1, 1989
- Have been under the age of 20 at the time of high school graduation or GED completion
- Considered financially eligible by the Family Independence Agency (formerly the Department of Social Services) prior to high school graduation
- Begin a course of study within 48 months of the month of high school graduation or GED completion
- Be enrolled in courses at least half-time
- TIP will only pay for a maximum of 24 credit hours per academic year
- Meet Washtenaw Community College's financial aid standard for Satisfactory Academic Progress found at www.wccnet.edu/financialaid
- Submit a copy of the TIP letter from the governor of Michigan, a copy of the High School Diploma or GED, and proof of MI residency to the Financial Aid Office.

Under Phase 1, a student is eligible for TIP for a maximum of 80 semesters hours of courses completed within four years from high school graduation or GED completion. TIP applications may be obtained at local high schools.

The State information number is (888) 447-2687

Native American Tuition Waiver (ITW) Program

This program provides free tuition (student must pay fees) for academically qualified Native American Students. Students must be at least one-quarter Native American descent, enrolled in a degree, certificate or transfer program. To apply, students must submit tribal certification from the Inter-Tribal Council. For further information, students can contact:

Harriet MoranInter-Tribal Council of Michigan, Inc.
405 E Easterday Avenue
Sault Ste Marie, Michigan 49783
Phone: 1-800-562-4957 (extension #3038)
Fax: 1-906-632-1810
www.itcmi.org

Aid that you must pay back:

Stafford Loans

The Federal Stafford Loan can be made from a bank, credit union or other eligible lender. Loan funds are disbursed directly to the school on the borrower's behalf.

Borrow only what you need

Loan Limits

According to federal regulations, borrowers are limited to a certain amount of loan funds each year based on their dependency status and year in school.

- Dependent students (as defined on the FAFSA) are allowed to borrow up to $3,500 their freshman year, $4,500 their sophomore year.
- Dependent students may borrower an additional $4,000 the first two years if their parents are denied a PLUS Loan.
- Dependent undergraduates may not exceed a combined total of $23,000 in Stafford loan funds.
- Independent students are allowed to borrow up to $7,500 their freshman year, $8,500 their sophomore year.
- Independent students (or students whose parents were denied a PLUS Loan) may not exceed a combined total of $46,000 for undergraduate students.

Interest Rates & Payments

- As of press time, Stafford loans had a fixed interest rate of 6.8%.
- Sample repayment schedules can be found in the Stafford Loan information page on www.wccnet.edu
- Based on financial need as demonstrated on the Free Application for Federal Student Aid (FAFSA), a borrower may receive subsidized or unsubsidized Stafford loan funds.
- Subsidized Stafford loan - loan funds where the government pays the interest for the borrower while the borrower is in school or in an eligible deferment.
- Unsubsidized Stafford loan - loan funds where the borrower is completely responsible for all interest that accrues on the loan.

How to Apply for a Loan

1. Complete the financial aid application process.
2. Carefully consider the Borrower's Rights and Responsibilities.
3. Complete and submit a Stafford Loan Request Form to the Financial Aid Office. The form can be found at www.wccnet.edu/financialaid by choosing the Forms item on that web page.
4. Register for a minimum of 6 credit hours. (Loan requests are not processed until the student is registered for 6 credit hours in a degree or certificate program that is eligible for financial aid.)
5. The Financial Aid Office then certifies your loan eligibility and forwards that information to the Michigan Guaranty Agency (MGA) and your Lender for further processing. If you have not previously

signed a Master Promissory Note with your lender, you will be notified to complete and Electronically Sign (E-Sign) Your Master Promissory Note (MPN) (using your Lender's E-Sign Process).

Entrance Counseling

Federal regulations require first time student borrowers to complete entrance counseling before receiving a Stafford loan. The process of E-Signing your MPN includes entrance counseling, which provides useful tips and tools to help you develop a budget for managing your educational expenses and helps you to understand your loan responsibilities.

Disbursement of Loan Funds

The scheduled disbursement date of your loan is the date that WCC is scheduled to receive your loan funds.

- If this is your first semester in any college - your funds are not disbursed until thirty days after the start of the semester.
- One semester loans - if you are taking out a loan for only one semester your funds will be disbursed twice during the semester.
- All loans must be disbursed in two equal amounts.

Borrower's Rights and Responsibilities

When you take out a student loan, you have certain rights and responsibilities.

Rights

Your rights include:

- A copy of your Repayment Schedule and Disclosure Statement.
- Notification in writing if your loans are sold or transferred for servicing.
- A repayment period of at least five years.
- The option to prepay any part of your loan at any time without penalty.
- The option to defer your loan payments, if you qualify.
- The right to have any questions about your student loan answered by your lender, guarantor, or the U.S. Department of Education.
- The right to have your loan canceled as a result of death or total and permanent disability.
- The right to a graduated or income-sensitive repayment schedule.
- Entitlement to an extended repayment schedule if you first borrowed on or after 10/7/98 and have a debt of at least $30,000.
- The option to receive the original Master Promissory Note when your loan is paid in full.

Responsibilities

Your responsibilities include:

- Notifying your lender or servicer if you change your name, address or enrollment status (i.e., you withdraw, graduate, drop to less than half-time enrollment or change your school of attendance).
- Knowing the terms of your student loans. You should keep copies of all student loan documents in a safe place.
- Repaying your loan whether or not you complete your studies, are satisfied with the education you received, or are able to find employment.
- Making your loan payments on time.
- Making payments at the end of your grace period whether you have received a repayment schedule or not. If your first payment due date is nearing and you have not received a payment schedule, you must immediately contact your lender or servicer.
- Contacting your servicer or lender as soon as possible if you are unable to meet a scheduled payment. The lender or servicer may be able to help if you seek assistance before you are late making a payment.
- Providing your school with your expected permanent address, the name and address of your expected employer and the address of your closest relative when you graduate, withdraw or drop to less than half-time enrollment. Your school will forward this information to your guarantor, lender or loan servicer.

Exit Counseling

For information on Stafford Loan Exit Counseling, click the Exit Counseling sidebar on the www.wccnet.edu/financialaid site.

Repayment Options

When you apply for a student loan, you sign a legal and binding note to repay your lender. When you leave school, it is important that you fulfill this obligation. Consider the following options.

- Standard Repayment: Typically this is the least-expensive option in terms of total interest costs. Most federal education-loan borrowers choose this option. This option provides a fixed monthly payment of at least $50 over a period of up to 10 years. A lender may permit a borrower to make smaller payments than otherwise required if the reduced scheduled monthly payment equals at least the amount of interest due on the loan.
- Graduated Repayment: This plan starts off with low payments, which then gradually increase every two years. The loan term varies depending on the total loan amount. Unless you consolidate several federal education loans, the maximum repayment term under this option is 10 years. No single payment will be more than three times greater than any other payment.
- Income-Sensitive Repayment: Monthly payments in this plan begin low and increase as the borrower's income increases. Repayment terms can be adjusted annually to adapt to income changes. While this benefits the borrower with smaller initial payments, borrowers should be aware that by reducing early payments, the long-term interest costs will increase.
- Extended Repayment: This plan is for borrowers with accumulated loan balances of $30,000 or more received on or after Oct. 7, 1998. Under this plan, you may reduce the amount of your monthly payment by spreading payments over a period of up to 25 years. You may choose to make payments over this extended period under a level or graduated schedule. Because payments are stretched over a longer term, total interest costs will be significantly higher than under the other repayment plans. Although a borrower's monthly payment will be lower, the total amount of money paid back over the life of the loan will be more than standard repayment.

If you experience trouble repaying your loans, please contact your lender to avoid defaulting. The loan section of our website describes the consequences of defaulting and suggests other options. This section can be found by going to www.wccnet.edu and clicking Aid Types, then Stafford Loans for Students, and looking for the Loan Default link.

Parent Loans for Undergraduate Students (PLUS)

Parents of dependent students may be eligible for a credit based Parent Loan for Undergraduate Students (PLUS). Interested parents may contact WCC's Financial Aid Office or review our Web site.

Tax Credits

Hope Credit

You may be able to claim a Hope credit of up to $1,650 for qualified education expenses paid for each eligible student. A tax credit reduces the amount of income tax you may have to pay. Unlike a deduction, which reduces the amount of income subject to tax, a credit directly reduces the tax itself. The Hope credit is a nonrefundable credit. This means that it can reduce your tax to zero, but if the credit is more than your tax the excess will not be refunded to you. The Hope credit you are allowed may be limited by the amount of your income and the amount of your tax.

For additional information go to www.irs.gov/publications/p970/ch02.html or just look for the Hope Credit on the www.irs.gov/publications website.

Lifetime Learning Credit

Beginning on July 1, 1998, taxpayers may be eligible to claim a nonrefundable Lifetime Learning Credit against their federal income taxes. The Lifetime Learning Credit may be claimed for the qualified tuition and related expenses of the students in the taxpayer's family (i.e., the taxpayer, the taxpayer's spouse, or an eligible dependent) who are enrolled in eligible educational institutions. After 2002, the credit amount is equal to 20 percent of the taxpayer's first $10,000 of out-of-pocket qualified tuition and related expenses. These amounts are not indexed for inflation.

For additional information go to http://www.irs.gov/individuals/article/0,,id=96273,00.html

Student Support Services

In this section

Auxiliary Services 34

Bookstore 34

Children's Center/Child Care Facility 34

Dental Clinic 34

Counseling/Advising 35

Academic Advising 35

Career Counseling/College Transfer Services/ Employment Services 35

Personal Counseling 35

Learning Support Services 35

Student Resource and Women's Center 35

M-POD: Students Transferring to University of Michigan. 36

The International Student Center. 36

Student Life 36

Office of Student Development & Activities 36

Club Sports 36

Student Clubs & Organizations 36

The Voice Newspaper 36

Orchard Radio 36

Gallery One 36

Huron River Review 36

Alumni Association 36

Counseling Resources:

www.wccnet.edu

Student Services heading

Then *Advising/Counseling*

Career Exploration Online:

www.wccnet.edu

Student Services heading

Then *Advising and Counseling*

Counseling, Career Planning & Employment Services

Career Resources

Auxiliary Services

Bookstore

The WCC bookstore is located on the lower level of the Student Center Building and is open during the following hours:

Fall and Winter semesters

Monday-Thursday 8:30 a.m. to 6:30 p.m.
Friday 8:30 a.m. to 3:00 p.m., and
Saturday 9:00 a.m. to 1:00 p.m.

Spring/Summer semester

Monday-Thursday 9:00 a.m. to 5:00 p.m.
Friday 9:00 a.m. to 1:00 p.m.

During rush periods, hours are extended. Call the bookstore or visit the WCC web site for details.

Selling Back Used Texts

Students can sell back their used books every day at the bookstore. Best prices are usually during the last week of the session and are based on current demand.

Reserving Textbooks

Once students have registered for a class, they may obtain their books or preorder them at *www.whywaitforbooks.com.*

Books are available for in-store pick-up or delivery to the student's home. Web orders are the best way to get used copies. Information and staff assistance are available in the bookstore.

Use Financial Aid to Buy Books

Near the beginning of the semester, students may use their financial aid to buy books at the WCC bookstore. Students who wish to use financial aid in the bookstore must complete a transfer authorization, which can be accessed in *MyWCC*, under the *Student Services and Financial Aid* tab.

Students may reserve their books before their financial aid is available in the bookstore. Students who have completed the transfer authorization may go to *whywaitforbooks.com* and complete a reservation form. The reserved books will be charged against the students' remaining financial aid, as soon as tuition is deducted, and can be picked up as soon as financial aid is available in the bookstore, at the date specified each semester. Students who don't have enough financial aid to cover their books will receive an email from the bookstore at their WCC student email address.

Students must show their WCC student ID card at time of purchase. Please check financial aid at *wccnet.edu/financialaid* for more specific information.

Shopping at the Bookstore

Books, instructional aids, equipment, materials, and supplies are readily accessible for students and staff. Also available are WCC insignia clothing and gifts. Special orders are welcome. The WCC Bookstore accepts Visa, MasterCard, Discover, American Express, Barnes and Noble gift cards, and personal checks with proper identification.

Campusestore.com gives students reduced educational prices on software.

Receipts must accompany returned merchandise; policies regarding returns are posted in the Bookstore.

Children's Center/Child Care Facility

WCC provides a state-licensed and nationally-accredited child care facility in the Family Education Building for children of WCC students. The Center offers a comprehensive program to enrich and enhance the social, emotional, cognitive, physical, and creative development of children with an emphasis on independence and self-esteem. The staff is trained in early childhood education and development. Practicum students in the Child Care Professional program and foster grandparents also offer additional care. Call (734) 973-3538 or stop by the Children's Center for details on age limits, enrollment, attendance requirements, fees, hours of operation, meals and other information. Visitors are always welcome; no appointment is needed.

First come, first served: Register your child just after you register for classes

To view our website please see the *Resources* heading at www.wccnet.edu and look for *Children's Center* among the drop-down choices.

Dental Clinic

The College has a state-of-the-art Dental Clinic which is open to students, staff and faculty. Treatment is provided by University of Michigan dental students and WCC's dental assisting students under the supervision of a licensed dentist. Contact the Dental Clinic at (734) 973-3332 for current information regarding services provided, hours of operation, and fees.

Counseling/Advising

Counseling services are located on the second floor of the Student Center Building. Hours of operation for each semester are posted on the Counseling Center bulletin board, but are typically 8 a.m. to 6:30 p.m. Monday through Thursday, 8 a.m. to 5 p.m. Friday. During peak registration periods, the center is open until 7:00 p.m. on Mondays through Thursdays, and 9 a.m. to noon on select Saturdays.

Academic Advising

Counselors and instructors are available to facilitate the development of academic plans. They assist students with planning schedules, meeting program requirements, placement in the appropriate level of courses, and transferring to four-year colleges and universities, as well as referrals to other support services.

Faculty members who are classroom instructors are especially helpful in providing advice and assistance regarding courses within their field of expertise. They can also assume the role of academic advisor for certain certificate and degree programs.

Students intending to transfer to a four-year college or university should contact Counseling and Career Planning, located on the second floor of the Student Center Building, for information regarding current transfer agreements between WCC and other area institutions (e.g., Eastern Michigan University, Cleary University). Most transfer guides also are available on the WCC web site. Students transferring to four-year institutions within Michigan should contact a WCC counselor regarding WCC's participation in the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement. For more information see the MACRAO transfer agreement in the Curriculum section of this publication.

Career Counseling/College Transfer Services/Employment Services

The College offers comprehensive services to assist students in career advising, career preparation, job placement and transfer. Counselors are available to help students make career change and career decisions and may suggest career testing or use of information in the Career Resource Library, located on the 2nd floor of the Student Center Building.

The Career Resource Library (SC 283) has numerous publications, videotapes, and handouts on career-related topics. Career Cruising and Discover are interactive computerized career guidance programs for student use.

Schedule a simulated interview

Current transfer agreements with other area colleges and universities are maintained in Counseling and Career Planning, including program transfer guides and course transfer information. Current catalogs from two- and four-year colleges are available as well as computer stations with Internet access to other college web sites.

The Employment Services Office maintains listings of job openings, including full-and part-time jobs, on-campus opportunities, off-campus postings and placement for graduates. A web-based placement service is available at www.collegecentral.com/wcc for student use. Staff will work with students and academic departments to identify appropriate job opportunities. Workshops on resume preparation, interviewing, job search techniques, and other related topics are offered throughout each semester.

Personal Counseling

The counseling and social work staff work with students experiencing personal or emotional problems. The staff also provides referrals to the appropriate agency or service in the community for specialized assistance as necessary.

Learning Support Services

Services to Students with Disabilities

Academic advising and arrangement of accommodations is provided by Learning Support Services for students with documented disabilities. These students may qualify to take their entry assessment (COMPASS) in the LSS office and may qualify for additional accommodations in the classroom such as: sign language interpreters, readers, scribes, specialized technology or other assistance. In order to provide timely services, requests must be made in advance. Advising is by appointment.

A Learning Disability Assessment is provided by a Learning Disability Specialist for WCC students enrolled in credit classes who suspect they may have a learning disability and who have not previously been tested or whose testing is outdated. The goal of the LD assessment is to identify and assist in arranging appropriate accommodations. Testing is arranged by appointment.

For additional information please contact Learning Support Services, at 734-973-3342, located on the first floor of the Crane Liberal Arts and Sciences Building in room 104. Advising hours are generally Monday – Thursday from 8 a.m. – 6:30 p.m. and from 8 a.m. – 5 p.m. on Friday.

Student Resource and Women's Center

The Center provides advising, counseling, and mentoring to students. It also offers workshops, inspirational speakers, and networking opportunities. The Center advocates on behalf of students to help them overcome barriers that impede their success and to promote an educational environment that values diversity, inclusiveness and equality.

Resources for male and female students

Although everyone is welcome to use the Center, the staff is especially sensitive to the needs of the adult student who most likely has the responsibility of a home, family and full time employment to factor into their educational objectives.

The Center utilizes a case management and holistic approach to providing services to students. This means that within established guidelines, staff consider each student's circumstances individually and provide solutions that are prescriptive to his/her particular needs.

The Student Resource and Women's Center has a resource library which contains books, periodicals, and computers. All students are invited to use this resource.

The SRWC offers the following services:

- Academic, career, financial and educational planning for special populations that include single parents, displaced homemakers, economically and academically disadvantaged students, and men or women entering non-traditional careers.

- Development of an education plan
- Grant funding for educational expenses
- Academic enrichment programs, workshops, library resources and a Women's Mentoring Program
- Extensive connections to community agencies and resources

The Center is located on the second floor of the Student Center Building in SC 289 and can be reached at (734) 677-5105.

M-POD: Students Transferring to University of Michigan

The Michigan Pursuing Our Dreams (M-POD) program is located in the Counseling, and Career Planning and Placement Center (SC 206D). This program was developed jointly by WCC and the University of Michigan with the goal of helping students to attain their educational goals of transferring to U of M. Please contact the M-POD office at (734) 477-8519 for additional information.

The International Student Center

The International Student Center, as part of Counseling and Career Planning, provides services to the following:

- Prospective students visiting the College who want information about the academic programs as well as information about services for the international population, such as English as a Second Language (ESL)
- Students looking for information and support services that will help ease the adjustment to the American culture and college life
- Current students seeking academic advice regarding Washtenaw Community College programs, as well as information about transfer programs to other institutions

The Center is located on the 2nd floor of the Student Center Building in room 206A. Students should call (734) 677-5158 or (734) 677-5128 for more information.

Student Life

Office of Student Development and Activities

The Office of Student Development and Activities provides a variety of opportunities designed to enhance a student's educational experience outside of the classroom. The Office oversees campus events, Club Sports, clubs and organizations, The Voice newspaper, and Orchard Radio. The Office is located on the 1st floor of the Student Center Building in Room 112 and services are available during regular campus hours. For more information, go to www.wccnet.edu/students or call (734) 973-3500 or e-mail studentactpt@wccnet.edu.

Club Sports

Club Sports are open to both women and men who wish to participate on recreational teams. Club sports currently include baseball, basketball, hockey, golf, running, soccer, softball and volleyball. Some activity starts almost every month. Contact the Club Sports office located in the Student Center Building, Room 118, or call (734) 973-3720 for information and sign-up.

Student Clubs and Organizations

Student clubs and organizations are established by students to offer opportunities in which students may learn leadership skills, meet other students with similar interests, and have fun. The Student Activities office is the clearinghouse for student clubs and organizations. Interested students should come to the Student Activities office in SC 112 for information on how to start a club.

For a list of current clubs and organizations click on the Student Activities icon on the College home page.

The Voice Newspaper

The Voice is a twice-monthly newspaper published by and for the students of WCC. The Voice provides opportunities for students to write, take photographs, design, sell, and manage advertising. The Voice is located in the Student Center Building in Room 116. For more information call (734) 677-5125.

Orchard Radio

Orchard Radio is WCC's student-run Internet radio station. Students are invited to create and host their own radio show or provide off-air assistance doing marketing, special projects, and general administration. Students dedicate themselves to learning the fundamentals of running a radio station, how to conduct interviews and do research, and the importance of being a responsible person in media. All students are welcome to join at the beginning of each semester. E-mail Orchard Radio at radio@wccnet.edu or call (734) 973-3500.

GalleryOne

GalleryOne is located on the first floor of the Student Center Building, Room 108. The gallery shows work by student, faculty, local and international artists from the first day of classes in September through July. Periodically, the gallery will schedule lectures, gallery talks, demonstrations, and workshops that are relevant to current exhibitions. The gallery is open during the day and some evenings. Call (734) 477-8512 for information. Current exhibition information can be found on the WCC web site under the *Resources* heading.

Huron River Review

Students may contribute poetry, prose, photographs, and art to this award-winning annual campus literary journal. Aspiring contributors can call 973-3703 or stop by the Writing Center (LA 355) for more information.

Alumni Association

The College stays in contact with former students through the Alumni Association. All former students are eligible to join. The office is located in The Foundation, SC 306; the phone number is (734) 973-3705.

Student Learning Support

In this section

Resource Centers 38

Richard W. Bailey Library 38

Resources 38

Services. 38

Borrowing and Copying. 38

Hours and Website 38

Learning Support Services: Tutoring. 38

Academic Skills Center 38

Math Resource Center. 39

Writing Center 39

Testing Center 39

Bailey Library

1st floor, Gunder Myran Building
(734) 973-3429

Wireless network

Several study choices:

- Traditional study tables
- Informal lounge seating
- Group study rooms with network access

Computer Commons

2nd floor, Gunder Myran Building
(734) 973-3420

- 158 computers
- PC and Mac platforms
- Internet access
- Microsoft applications
- Language lab software
- Software specific to particular classes
- Scanning and digital video editing workstations
- Printing available for a charge

Resource Centers

Richard W. Bailey Library

The Bailey Library aims to play two complementary roles: as the physical hub of a vibrant learning community, and as a portal for access to knowledge resources.

Resources

The Bailey Library provides more than 65,000 books, 20,000 e-books, 450 hard copy periodicals, and 10,000 e-journals in various databases. Electronic resources are accessible both at the Library and off-campus through the Library's website. A media collection consisting of audio and video tapes, digital videodiscs, and music CD's can be borrowed for use on equipment in the facility.

Services

Librarians provide students with a full range of research assistance services that include in-person assistance, as well as research assistance via email, text messaging, and real-time chat. The Library actively participates in inter-library loan programs such as the Michigan eLibrary Catalog (MeLCat) and the Online Computer Library Center (OCLC) to provide other libraries' resources to faculty and students. Access to other libraries' online catalogs, such as Eastern Michigan University and the Ann Arbor District Library, is available.

Borrowing and Copying

Currently enrolled students need an ID card to borrow materials, and their WCC ID number to gain off-campus access to the Library's online resources. The circulation system and online catalog provide efficient, accurate information on all library materials. The Library provides self-service copiers and students can purchase a copy card from a machine if they wish to make copies.

Hours and Website

The Bailey Library and Computer Commons is open during weekday, evening, and weekend hours as posted each semester. Consult the Library's web site at www.wccnet.edu/resources/library for more information and electronic access to many resources and services.

Learning Support Services

Tutoring

Learning Support Services provides free tutoring for all students in credit classes for which students are currently enrolled. All levels of math, chemistry, physics and biology are covered. Tutoring is also available for general subjects, as well as for courses in English, English as a Second Language, Business, Computers, Science, and others. Tutoring is provided on a walk-in, individualized basis so that specific questions can be answered. Tutoring does not substitute for class attendance. Students should be prepared with questions and bring in the assignment, syllabus, book and notes. Study skills may also be covered while working with the tutor on subject material. Drop by LA 104 or call (734) 973-3342.

Academic Skills Center

The Academic Skills Center provides help for students who desire to improve their reading and study skills and realize academic success. Diagnostic reading tests designed to guide students into the proper level courses

for their needs can be administered and evaluated. Students enrolled in Academic and Study Skills (ACS) classes use the facility regularly during the semester. Questions related to reading skills, study skills, and critical thinking may be directed to the Academic Skills Center, (734) 973-3301, GM 307.

Math Resource Center

The Math Resource Center provides tutoring services and a small computer laboratory for any WCC student enrolled in a mathematics course. The lab is open Monday through Thursday from 9:00 a.m. to 9:00 p.m., from 10:00 a.m. to 2:00 p.m. on Friday and Saturday, and is located in LA 258.

LSS math and science tutors are located here

Information regarding courses, procedures, schedules, and program requirements is readily available at this location. Tutors are usually available when the lab is open. Hours will vary during vacations and during the summer. Visit the Center to find out about any schedule variations. The math web site has more information about math at WCC. Type www.wccnet.edu/departments/math into your web browser to find out more.

Writing Center

The Writing Center, located in LA 355, is a resource available to all WCC enrolled students as a walk-in support for writing assignments across the curriculum. The primary goal of the Writing Center is to help students become stronger writers. English instructors are on duty along with a staff of trained and skilled peer tutors to provide help with any aspect of writing, from coming up with ideas, basic sentence structure, proofreading, to research documentation.

In addition, several writing courses (English 090/091, 100, and 111) have Writing Center assignments as the "fourth" credit hour. In each course, students complete exercises to complement their course work, and to further develop their writing skills. The Writing Center also offers placement testing for students who need assistance in selecting a writing course that matches their skill level.

The Writing Center computers are equipped with Microsoft Office and Internet browsers for student use. The Center is usually open 6 days a week but it's a good idea to call (734) 973-3647 for specific hours for each semester. The web site also has the latest hours plus more specific information to help students. Just go to *www.wccnet.edu* and access the drop-down menu from the *Resources* heading at the top of the page. Choose *Writing Center*.

Testing Center, 3rd Floor, Student Center Building

The Testing Center provides a quiet and comfortable environment for guests and students to take GED tests, employment screening tests, College Level Examination Program (CLEP) tests, DSST tests (DANTES), and distance learning tests. It is open Monday through Saturday during the academic year, on Sundays in some semesters, and closes early one day per month for staff meetings.

Check the hours at the *Student Services* heading on our website under *Testing Center & GED Testing*. Students visiting the Testing Center should bring their WCC ID or another photo ID, know their instructor's last name, and please do not bring children, as they are not allowed into the Center.

Academic Policies/ Procedures

In this section

Academic Procedures 42
- Participation in Assessment of Student Learning 42
- Cancellation of Specific Sections of a Course 42
- Class Attendance 42
- Class Level 42
- Course Load/Student Status 42

Transfer Students 42
- WCC Students Transferring Out 42
- Students Transfering to WCC 43

WCC Credit for Prior Learning 43
- College Board Advanced Placement Exams 43
- College Level Examination Program (CLEP) 43
- DANTES Subject Standardized Tests 43
- College Credit for High School Education 43
- Credit by Examination 44
- Credit by Portfolio/Document Evaluation 44
- Military Training 44

Grades 44
- Grading Scale 44
- Explanation of Grades 44
- Repeating a Course 45
- Transcripts/Final Grades 45
- Grade Point Average (GPA) 45
- Grade Appeal Procedure 45
- Deans' List and Graduation Honors 45
- Honor Society (Phi Theta Kappa) 45

Academic Intervention Program 46

Graduation Requirements 48

Enrollment Verification
Students may have their enrollment verified after the latest drop deadline for 15-week classes.

The National Student Clearinghouse is now our authorized agent for providing WCC degree and enrollment verifications for employers or background screening firms.

These firms may contact the National Student Clearinghouse at www.studentclearinghouse.org

Remember, classes taken in audit or withdrawal status will not count toward full-time or even part-time status. The student must be actively pursuing an education.

Academic Procedures

Participation in Assessment of Student Learning

To provide feedback that will enable the college to determine whether its programs and courses are successful in achieving their learning objectives, students may be expected to participate in college-wide outcomes assessment activities related to its courses, academic programs, and general education outcomes. In some instances, student work will undergo special reviews. Other activities may include portfolio development, tests, surveys, or other tools to measure student learning. Student participation in assessment activities assures that the college receives information on student learning that can be used to promote continuous improvement of teaching and learning. By choosing to come to WCC, students are expected to participate in assessment activities as may be requested. In all these activities, strict confidentiality of individual student work will be maintained.

We strengthen your success by constantly assessing our results

Cancellation of Specific Sections of a Course

The college may cancel course offerings due to low enrollment, lack of an instructor, or any other reason deemed viable by the Vice President for Instruction. Every effort is made to accommodate students into alternate sections. Information regarding the current status of course offerings for all semesters is available on the College's web site (www.wccnet.edu) and at the Student Connection.

Cancelled courses will be crossed out with a red line in the online schedule

Class Attendance

Students are expected to attend all sessions of the courses for which they register. Regular class attendance is necessary for maximum success in college. In the event of excessive absence or tardiness, individual instructors determine whether the quality of a student's work has been adversely affected and, if warranted, may withdraw a student mid-way through the semester.

Students who do not attend the first two class sessions in a semester may be dropped from the class at the instructor's discretion. Students not able to attend a class are responsible for contacting the faculty member prior to the second-class meeting.

Class Level

Freshman/First-Year Student - One who has completed fewer than 31 credit hours.

Sophomore/Second-Year Student - One who has completed 31 or more credit hours but has not received an associate degree or has not qualified for upper division classification in a four-year college or university.

Course Load/Student Status

The following apply to all semesters, including Spring/Summer.

Full-time student	One who enrolls in twelve or more credit hours per semester.
Part-time student	One who enrolls in less than twelve credit hours per semester.
Half-time student	A part-time student enrolled in at least six credit hours per semester.

Enrollment certifications are not processed until the refund deadline for the 15-week class session has passed.

Students enrolling in 18 or more credit hours in a semester must have their schedule approved by a counselor before their registration may be processed.

Insurance companies, the Veterans Administration, and Financial Aid do not count audit or withdrawal status as actively pursuing an education and will not consider these classes toward full-time status or other credit hour eligibility. This may also apply to scholarships, payments by employers and so on. Scholarships and employer payments may be revoked for audited classes or classes in withdrawal status. Students should check with the appropriate institution before making a change.

Transfer Students

WCC Students Transferring Out

Articulation agreements between WCC and four-year colleges and universities allow WCC students in specific programs to apply all WCC credits toward a bachelor's degree. Included with the articulation agreements are curriculum guides which list all courses required to successfully transfer all credits. Approved articulation agreements are available online at

Counseling can tell you where your WCC credits may transfer 677-5102

www.wccnet.edu and in the Counseling Office. For information on public school articulation, see the folowing section "College Credit for High School Education". Please meet with a counselor to plan your classes if you intend to transfer to another college or university.

There is an agreement that provides for transfer of up to 30 semester credit hours to meet many or all of the general education requirements at participating Michigan four-year colleges and universities. It is called the MACRAO (Michigan Association of Collegiate Registrars and Admissions Officers) agreement. The MACRAO agreement is explained more completely in the Curriculum section of this Catalog and there is also information at the *www.macrao.org* home page under the title *MACRAO Transfer Agreement and Provisos*.

Students Transferring to WCC

Applicants must submit an official transcript from all colleges previously attended if they plan to apply the credit toward their program of study at WCC. Coursework will be evaluated, at the student's request, after the student has completed one or more credit hours at WCC. Credit will be granted only for courses in which a grade of "C" or better has been earned. Courses which are evaluated to be equivalent to courses offered at WCC are posted on the transcript as the specific course. Courses which are evaluated as college-level but not equivalent to a particular WCC course are posted as elective credit in the appropriate discipline.

Your existing credits can transfer to WCC

The acceptance of transfer credit is governed by the accreditation of the institution and the listing published in the American Association of Collegiate Registrars and Admissions Officers Transfer Credit Practices of Designated Educational Institutions. Credit is accepted from institutions with a general (AG) or provisional (AP) rating. Credit is not accepted from schools that have an N or NP rating. Credit from institutions that are not listed may be evaluated for non-traditional credit. Correspondence courses from accredited colleges and universities are accepted. Foreign transcripts cannot be evaluated without submission of international credit course-by-course evaluation from ECE or WES. Applications for these outside services are available online from www.ece.org or www.wes.org and students may choose either one of these organizations.

WCC Credit for Prior Learning

Washtenaw Community College recognizes that students come to college with competencies obtained from prior learning experiences such as previous education, training, or work experience. To receive credit, a prior learning experience must be verified. If it is documented and evaluated to be equivalent to college-level coursework, it is the College's policy to allow equivalent credit to be granted to the student if appropriate to their WCC program of study.

Earn college credit for what you already know

The following methods may be used to verify equivalency credit: transcript evaluation, credit by examination, portfolio evaluation, advanced placement testing, and articulation credit. Credit for prior learning will be evaluated and posted on the student's transcript only after the student has earned one or more credit hours at WCC and will not apply toward satisfying the minimum credits in residence required for graduation. The credit does not count as part of a student's credit load for any given semester and is not computed into the grade point average.

In most cases, non-traditional credit earned for prior learning experiences will not transfer to other colleges or universities. Other institutions will want to evaluate the transcripts from all colleges previously attended when awarding transfer credit.

College Board Advanced Placement Exams

Credit may be granted to students who have achieved a 3 or above on one of the College Board Advanced Placement exams offered through their high school. The student may be granted credit for a particular course or the credit may apply toward an elective. Contact Enrollment Services at (734) 973-3590 for specific course information.

College Level Examination Program (CLEP)

Credit may be granted for the successful completion of each of the five general examinations of CLEP:

English Composition*
Mathematics
Humanities
Natural Sciences
Social Sciences and History

* Students who achieve the minimum score on the English Composition General Examination will be granted English elective credit. To receive credit for ENG 111 (Composition I), students must pass the CLEP English Composition Subject Examination With Essay.

Minimum scores for awarding credit are based on American Council on Education (ACE) recommended credit-granting scores.

Students who have earned six or more credits in any one of the general examination subject areas are not eligible to receive credit for the general examination in that area. Subject examinations exist in the general areas of composition, literature, foreign languages, history, social sciences, science, mathematics, and business. In general, a maximum of three semester credits may be granted for each College-approved subject examination for scores which meet ACE recommended credit-granting scores. Some general and subject examinations also require the successful completion of an essay examination or laboratory demonstration. For information about scheduling a CLEP test, contact the Testing Center at (734) 973-3634.

DANTES Subject Standardized Tests (DSST)

The DSST provides colleges with a means to measure students' knowledge in commonly taught college courses and awards credit based on student scores. Students can choose from 37 different test titles in the areas of social science, business, mathematics, applied technology, humanities, and physical science. For information about which tests can be used to award academic credit at the College, contact Enrollment Services. For information about scheduling a DSST test, contact the Testing Center.

College Credit for High School Education

Students who have acquired entry-level occupational skills through high school career and technical education may be eligible to receive college credit for equivalent courses. The student must have taken an approved career or technical course and receive a recommendation from the instructor. The student must also provide the college with his/her student performance

Grading Scale

Grades	Grade Points Per Credit Hour
A Superior	4.0
A-	3.7
B+	3.3
B Excellent	3.0
B-	2.7
C+	2.3
C Average	2.0
C-	1.7
D+	1.3
D Below Average	1.0
D-	0.7
F Failure	0
S* Satisfactory	0
U* Unsatisfactory	0
I* Incomplete; Credit Withheld	0
IX* Expired Incomplete	0
W* Withdrawal	0
AU* Audit	0
P* Pass	0
NP* No Pass	0

NOTE: Grades (except S, P, and AU) having 0 grade points may be treated by other educational institutions as an 'F'.

To figure out your Grade Point Average (GPA)

Multiply grade points x credit hours

Next, divide by number of credit hours attempted

Example ENG 111 is 4 credit hours

Student received a B-, which is 2.7 grade points per credit hour

Music 210 is 2 credit hours

Student received a B+, which is 3.3 grade points per credit hour

So
(4 x 2.7) + (2 x 3.3) = 17.4

Divide by the total number of credit hours taken to get the GPA

17.4 ÷ 6 = 2.9 GPA

GPA is 2.9

record for evaluation by the college instructor. Students eligible for articulated credit must apply for the credit within two years of their high school graduation. For more information, please contact the high school counselor, the recommending instructor, or the College Tech Prep Office at (734) 973-3706.

Credit by Examination

Students who appear to have proficiency in a course may, upon recommendation of a full-time instructor and with the approval of the department chair, take a course examination for credit. The student must be accepted to the College as a credit student and complete a Credit-By-Examination application form. The cost of the examination is based on the number of credit hours in the course. A maximum of 30 credits earned by examination may be applied toward a degree. The student is responsible for arranging to complete the examination. Students are allowed to attempt credit by examination only once per course. If the student passes the exam, WCC posts the credit with no grade. This credit generally does not transfer to other institutions.

Credit by Portfolio/Document Evaluation

Students with background experiences or certifications obtained through on-the-job training or apprenticeships, for example, may have this prior learning evaluated for college credit. Students may pick up a Non-Traditional Credit Evaluation form from the Enrollment Services Office and contact the appropriate faculty member(s) in the student's program area. Courses granting CEU's are not normally eligible for college credit.

Cancelled courses will be crossed out with a red line in the online schedule

Students must submit all official documents and information on the length and content of the experience, and any other pertinent documentation to the appropriate faculty member for evaluation. Normally, a maximum of 20 credits may be accepted in this category (with the exception of apprenticeship training).

Military Training

For an evaluation of service school training, students must submit a military transcript and DD 214 member 4 copy (military discharge papers) unless still on active military duty. The documents must show the exact title of the course, location of the course, and length of the course in weeks. Credit may be granted based on the recommendation of the American Council on Education (ACE). If a course is not evaluated by ACE, no credit is granted. If a course is relevant to a student's occupational degree objective, the program advisor and appropriate dean make a decision as to acceptance and application of credit. Other courses may be accepted as elective credit based on the veteran's program of study at WCC.

* Explanation of Grades:

Satisfactory 'S' or Unsatisfactory 'U':

'S' and 'U' grades are generally given for courses numbered 100 and below. Credits for courses with 'S' or 'U' grades are not figured into credits attempted in determining a student's GPA and do not count toward graduation.

Incomplete Grade 'I' Credit Withheld:

If the instructor determines that the student has nearly completed the requirements of a course but is missing a small but essential part of the course due to unforeseen or extenuating circumstances, the instructor may issue an 'I' grade. The 'I' grade will remain on the student's transcript until the requirements of the course are met and a letter grade given or an instructor-determined deadline has passed with a maximum of one year. The final grade will depend on the quality of the completed work and its significance to the course. After the deadline, the grade that has been preset by the instructor will be posted on the transcript if the work is not completed. The 'I' grade could become a letter grade such as B, C, D, or S and credit granted or a U, F, or IX (permanent 'I') in which case a student would need to register in the course again to receive credit. Neither the 'I' or the 'IX' grade will be figured into credits attempted or honor points earned.

Withdrawal 'W':

A 'W' grade is posted to the student's permanent academic record for any course the student withdraws from after the 100% refund deadline. The 'W' grade is not figured into credits attempted in determining a student's GPA.

Audit 'AU' No Credit:

A student may enroll in a credit course on a non-credit (audit) basis. The number of credits the course normally carries is not included as part of the total credit load; however, tuition is assessed by the number of credits for the course. Students may change from credit to audit status or vice versa early in the semester without the instructor's permission. Students may make the same changes later in the semester if the instructor's authorization is obtained. Refer to the Academic Class Schedule of courses for specific dates each semester. Credit is not earned in courses taken on an audit basis.

Pass 'P'/No Pass 'NP':

Pass/No Pass grades are given only in specifically-designated courses numbered 100 and above. The Pass/

No Pass grades must be part of the approved course syllabus and will apply to all students in all sections of the course. Students and faculty cannot elect this grading option for other courses. The 'P' grade equates to 'C' or better work and will not be included in a student's GPA. No more than 25 percent of credits applied toward an associate degree or certificate can have a 'P' grade.

Repeating a Course

Whenever a course is repeated on a credit basis, the best grade and credits earned are used in computing the grade-point average. All entries remain a part of the permanent academic record.

Transcripts/Final Grades

A permanent record of all courses, credits and grades earned by each student is kept in the Enrollment Services Office. Find out how to order an Official Transcript by consulting www.wccnet.edu and looking for Transcripts under the Student Services heading. Unofficial copies are available on the WCC web site. Associate degrees and/or college certificates earned at WCC are posted on transcripts. At the end of each semester final grades are issued to all students enrolled for that semester. Transcripts and final grade reports are available unless the student has a financial obligation to the college. Students may access their grades and unofficial transcript via College web site in *MyWCC* by using their personal password and student ID number.

You can't get your transcript if you have a financial hold

Grade Point Average (GPA)

Grade points measure the achievement of students for the number of credit hours attempted. Grade points are determined by multiplying the grade points per credit hour by the credit hour value of the course attempted. The cumulative grade point average is the total number of grade points earned divided by the total number of credit hours attempted. Attempted credit hours include the number of credit hours of "F" even though no grade points are earned for this grade.

Grade Appeal Procedure

A student may appeal any letter grade from any course. All parties are to be notified of any action taken during the entire process. The process consists of the following steps:

Step One: Student discusses concerns with the course instructor.

Step Two: If Step One does not resolve the appeal, the student submits a written request for a meeting to the Department Chair. This step must be taken within five months of the posting of the grade to the student's record.

Step Three: After discussion with the student and/or the instructor, the Department Chair makes an initial determination regarding the basis for an appeal, and may suggest that there is no basis for appeal, or may suggest that the student could appeal to the Instructional Dean.

Step Four: If the student wishes to pursue the appeal, he/she should submit the written appeal within five days to the Divisional Dean, along with a request for a meeting and notification that he/she has already talked to the faculty member and Chair.

Step Five: The Divisional Dean invites both the student and the instructor to a meeting and issues a written decision. This step must be completed within six months of the posting of the grade to the student's record.

Step Six: A final appeal may be made in writing to the Vice-President for Instruction. The Vice President for Instruction shall make a final determination and shall inform the student in writing of his/her decision.

Deans' List and Graduation Honors

The Deans' List acknowledges students who have completed 12 or more credits during a semester with a minimum 3.5 grade point average. Students completing 12 or more credits with a minimum 3.8 grade point average are on the Deans' List with High Honors.

Students attending the college on a part-time basis who, over the previous three semesters (Spring/Summer counts as one semester), have accumulated at least 15 credits and earned a minimum 3.8 grade point average are also on the Deans' List. Students earning a 3.8 grade point average or higher are invited to the annual spring Honors Convocation.

Apply for graduation before your last semester

Graduation honors are awarded to students earning a minimum 3.5 cumulative grade point average at the time of graduation; High Honors are awarded to students earning a minimum 3.8 cumulative grade point average at the time of graduation. Honors or High Honors is indicated on students' transcripts, the commencement program, and press releases.

Honor Society (Phi Theta Kappa)

Phi Theta Kappa, the international honor society for two-year colleges, has been recognizing academic achievement since 1918. This organization has chartered 1,100 chapters; it inducted its one-millionth member in 1993.

To be eligible for membership, students must be enrolled at WCC or another regionally accredited institution offering an associate degree program. They must have completed at least 12 hours of course work leading to an associate degree (part-time students may be eligible) and have a cumulative GPA of 3.5.

Students inducted into the organization will receive a Golden Key membership pin, an embossed certificate, the Golden Key Newsletter, and a Phi Theta Kappa Scholarship Directory. Some $34 million in transfer scholarships is available exclusively for society members as well as many other scholarship opportunities. Society members will wear a gold braid and tassel at commencement ceremonies and receive a gold diploma seal indicating membership. This designation will also be included on students' academic transcripts.

Students who meet the eligibility requirements for Phi Theta Kappa may pick up a brochure from the Student Activities office, or may call the chapter advisor for Phi Theta Kappa at (734) 973-3691.

Academic Intervention Program

Purpose: The primary purpose of the Academic Intervention Program is to promote retention and academic success. It is the College's intention to identify students who are showing signs of significant academic struggle and provide support and services to assist them in meeting their educational goals.

Definition: Washtenaw Community College wants to ensure that all students make satisfactory progress toward achieving their educational goals. The fundamental standard of academic progress is the completion of attempted credits and the attainment of a minimum cumulative grade point average (GPA) of 2.0. As a safeguard against further academic struggle, interventions and restrictions may apply immediately in the case of the courses listed below* or after a student has attempted a minimum of 12 credit hours (which includes developmental courses) and failed to maintain a cumulative GPA of 2.0. These interventions will be applied at the time of the student's next enrollment.

* The following courses do not calculate into the grade point average but a student enrolled in these courses who does not successfully complete the entire course in one semester will receive immediate academic intervention as described in this procedure. Successful completion is defined as receiving one of the following grades: A (superior), B (excellent), C (average), S (satisfactory) or P (pass).

- REA 040
- REA 050
- REA 051
- REA 070
- REA 071
- ENG 050
- ENG 051
- ENG 060
- ENG 061
- ENG 064
- ENG 065
- ENG 067
- ENG 090
- MTH 067

The student must do one of the following for each class on the above list that has been attempted but has not been successfully completed:

- Take the course again and complete it successfully (REA 040, REA 050, REA 051, and ENG 067 are no longer offered. Choose the appropriate option below. ENG 067 students should talk to their counselor or advisor.)

OR

- Successfully complete a higher level course in the same area such as Reading or Writing, as recommended by a counselor or advisor

OR

- If the course is a Reading course (REA 040, REA 050, REA 051, REA 070, REA 071, ENG 064, ENG 065), achieve an 82 or greater Reading score on the COMPASS test.

Elements

Academic progress is evaluated after a student has attempted 12 or more credits **or** at the end of a semester in which the student has enrolled in one or more of the courses attempted from the list above.*

Good Standing: Cumulative GPA of ≥2.0 (greater than or equal to 2.0). A student is in Good Standing when he or she has a cumulative GPA of ≥2.0 and successfully completes each course attempted from the list above.*

Step 1: Academic Caution Status:

A student is placed in Academic Caution Status,

- if after having attempted 12 or more credits, his or her cumulative GPA is <2.0 (less than 2.0)
  OR
- if he or she does not successfully complete each course attempted from the preceding list.*

Academic Caution Process

1. The student is notified by mail that he or she has been placed in Academic Caution Status. A letter will be mailed to the student on the second work day after grades are posted at the end of the semester.
2. The student will be placed on registration hold status by Enrollment Services and will be unable to register or change a registration until he or she sees a counselor or advisor to develop an Academic Plan (AP).
   A. The Academic Plan will identify academic improvement strategies which will include interventions such as participating in the Student Success Seminar, tutoring, or study groups; working with Student Resource and Women's Center (SRWC); working with Learning Support Services (LSS) on disability related accommodations or other issues; or fulfilling other interventions appropriate to the student's needs. The Academic Plan will be documented in the College's computer system and can be accessed by counselors and advisors.
   B. Once the counselor or advisor and the student are satisfied with the Academic Plan, the counselor or advisor may lift the hold for the semester.
3. A student in Academic Caution Status cannot take more than 15 credit hours. **It is the student's responsibility and in his or her best interest to modify any pre-existing registration to reflect this 15 credit hour limitation.** Fifteen credit hours are rarely recommended at this stage but are available under special circumstances.
4. A student in Academic Caution Status will progress to one of three steps:
   - Good Standing if the cumulative GPA is 2.0 or higher **and** the student successfully completes each course attempted from the list above.*
   - Remain in Academic Caution Status if the cumulative GPA is below 2.0 but the semester GPA is 2.0 or higher **and** the student successfully completes each course attempted from the list above.*
   - Move into Academic Warning Status if the semester GPA is below 2.0 **or** the student does not successfully complete each course attempted from the list above.*
5. If a student in Academic Caution Status is likely to move into Academic Warning Status, the Academic Plan and the planned student schedule should reflect no more than 13 credits. This is because students who are placed into Academic Warning Status have a 13 credit hour limitation. **It is the student's responsibility and in his or her best interest to modify any pre-existing registration to reflect this 13 credit hour limitation.**

Step 2: Academic Warning Status:

A student who is in Academic Caution Status will be moved to Academic Warning Status

- if his or her semester GPA is <2.0 **or**
- if he or she does not successfully complete each course attempted from the list above.*

Academic Warning Process

1. The student is notified by mail that he or she has been placed in Academic Warning Status. A letter will be mailed to the student on the second work day after grades are posted at the end of the semester.
2. The student will be placed on registration hold status.
3. A student in Academic Warning Status **cannot** take more than 13 credit hours. **It is the student's responsibility and in his or her best interest to modify any pre-existing registration to reflect this 13 credit hour limitation.**
4. A student in Academic Warning Status must see a counselor or advisor to:
   A. Update his or her Academic Plan (AP).
   B. Register or change a registration to include one of the following required Intervention Courses:
      - The following Academic Skills credit courses: ACS95, ACS105, ACS107, ACS110, ACS 111, ACS121 or ACS122.
      - Other approved courses designated by a counselor or advisor which may include: a non credit success course, seminar, or workshop; repeating an academic course previously taken; or another designated course.

   C. Once the counselor or advisor and the student are satisfied with the Academic Plan, the counselor or advisor may lift the hold for the semester.
5. A student in Academic Warning Status will progress to one of three steps:
   - Good Standing if the cumulative GPA is ≥2.0 and the student successfully completes each course attempted from the list above.*
   - Moved back into Academic Caution Status if the student achieves a semester GPA of ≥2.0, completes 66% of attempted credits and successfully completes each course attempted from the list above.*
   - Face Suspension if one of the following occurs:

     i. The student does not achieve a semester GPA of ≥2.0

     OR

     ii. The student does not complete 66% of attempted credits

     OR

     iii. The student does not successfully complete each course attempted from the list above.*

Step 3: Academic Suspension:

A student who is in Academic Warning Status will be suspended if one of the following occurs:

- if the semester GPA is <2.0

  OR

- if he or she does not successfully complete 66% of attempted credits

  OR

- if he or she does not successfully complete each course attempted from the list above.*

The soonest suspension can occur for any student is the end of a student's 3rd semester.

Suspension Process

1. The student is notified by mail that he or she has been suspended and of the length of the suspension. A letter will be mailed to the student on the second work day after grades are posted at the end of the semester.
   A. If it is a first suspension: the student will be suspended according to the semester in which the student was in Academic Warning Status but failed to make sufficient progress: from Fall semester, the student will be suspended for Winter term; from Winter semester, the student will be suspended for Fall term.
   B. If it is a 2nd or subsequent suspension, the student will be suspended for one full year starting from the date of the suspension.
2. When a student returns from suspension, the student is in Academic Warning Status.

Appeals Process

1. The student may appeal his or her suspension to the Suspension Appeals Committee (SAC) by doing the following:
   A. Student sends a letter of appeal to the committee in care of the Dean of Support Services and Student Advocacy. Appeal letters must be received by the Dean's office five working days prior to the first day of the semester of suspension.
   B. The SAC meets to review all appeals for the upcoming semester. The committee will accept or deny each student's appeal. The SAC will be chaired by a dean from one of the academic divisions.
   C. The SAC chair is responsible for notifying all students who have appealed of the committee's decision prior to the last day of registration.
   D. If the appeal is denied, pre-registered students will automatically be dropped from all of their courses.
   E. The SAC will meet in January, June, and August.
2. If the student chooses not to appeal, then the suspension process as outlined above goes into effect.

Possible Appeal Outcomes:

- If the suspension is waived by the SAC, the student will return in Academic Warning Status.
- If the suspension is upheld by the SAC and it is a 1st suspen-

sion, the student will be suspended as outlined above in 1A of the Suspension Process.

- If the suspension is upheld by the SAC and it is a 2nd or subsequent suspension, the student will be suspended as outlined above in 1B of the Suspension Process.
- The SAC may impose other appropriate enrollment restrictions.

Graduation Requirements

Application for Graduation

To be eligible for graduation, you must file an Application for Graduation with the Enrollment Services Office. The application should be turned in four months prior to the beginning of the semester in which the student plans to graduate. This allows enough time for the college to verify that students will meet their program requirements by the expected date of graduation, and for students to make adjustments in their schedule for their last semester, if necessary.

The form is available online or can be picked up from the Student Connection on the second floor of the Student Center Building. Find the form online by going to the Help menu at the top of the Web page, then to Student Forms. Degrees and certificates are issued in December, May, June, or August, depending on when the student has completed their degree requirements and applied for graduation. Students who plan to graduate must submit an Application for Graduation form to the Student Connection even if they do not plan to attend the commencement ceremony.

Graduation Requirements for an Associate Degree

To be eligible for graduation with an associate's degree from Washtenaw Community College you must meet all of the following requirements:

1. Fulfill all prescribed course and credit hour requirements of your specific curriculum (see Programs of Study Section for specific requirements). A minimum of 60 credits is required for a degree. Courses numbered below 100 do not count toward degree completion.
2. Complete a minimum of 15 residence credits (Washtenaw Community College credits) toward completion of each degree pursued. Credit for prior learning, including credit by exam and transfer credit, may not be used as residence credit.
3. Complete the General Education Requirements as specified for the type of degree for which you are applying. See "General Education Requirements" in the Curriculum Section for details. This requirement may be waived if you have earned a bachelor's degree or higher from an accredited U.S. college or university. You may request a waiver of general education requirements in the Office of Student Records.
4. Earn a minimum cumulative grade point average of 2.0 and if applicable, any minimum GPA specified in your program.
5. Meet all financial and library obligations to the College.
6. File an Application for Graduation form.
7. To be eligible for a second associate degree, students must complete 15 additional credit hours that are different from the credits used to complete their first associate degree. Students must meet all degree requirements for the program they plan to complete.

Graduation Requirements for a Certificate

To be eligible for graduation with a Certificate from Washtenaw Community College you must meet all of the following requirements:

1. Fulfill the prescribed requirements of your specific certificate curriculum including courses, credit hours, and/or hours of attendance. (see Programs of Study Section for specific requirements) Courses numbered below 100 do not count toward graduation for the Certificate. Courses numbered 051 and below do not count toward graduation for the Certificate of Completion.
2. Complete a minimum of 75% of the total credits required as "residence credit" for each certificate pursued except for the Certificate of Completion, which requires that all credit hours (if there are any) be completed as residence credit. Credit for prior learning, including credit by exam and transfer credit, may not be used as residence credit.
3. Earn a minimum cumulative and program grade point average (GPA) of 2.0.
4. If applicable, earn the minimum grade point average (GPA) specified for your program.
5. To earn a second certificate in the same program area, you must complete at least nine additional credit hours, including the specific course requirements in the curriculum.
6. Meet all financial and library obligations to the College.
7. File an Application for Graduation form.

Selecting the Program Year for Meeting Graduation Requirements

In meeting program requirements for graduation, you may select either those requirements that were in effect during the year in which you initially enrolled in your program (if the program is still active) or those in effect when you complete your program. This does not apply to meeting the core curriculum/general education requirements that were in effect before Fall 2000. Students who started associate's degree programs before Fall 2000 had until Fall 2003 to complete their programs using the general education requirements that were in effect when they started. In Fall 2003 and thereafter, all associate's degree students are required to meet the new General Education Requirements that went into effect in Fall 2000.

Discontinued Programs

When a program is discontinued, you are given a specified amount of time to complete the program (usually three years), after which you must change to a different program. If you change programs you should see a program advisor to select appropriate courses and make course substitutions as necessary. If you interrupt your studies for more than two consecutive semesters, the College strongly encourages you to change to the requirements that are in effect the year in which you return. Graduation requirements may be completed during any semester.

Course Substitutions

Courses required for a program of study may be substituted by other courses only with the approval of the program advisor and the appropriate Division Dean and the Vice President for Instruction. A course substitution form must be filed with the Enrollment Services Office.

Waiver of Program Requirements

Under extreme circumstances, a required course may be waived with the approval of the program advisor, the Division Dean, and the Vice President for Instruction. A Waiver of Program Requirements form must be filed with the Office of Enrollment Services.

Graduation Ceremony

The College's Commencement ceremony is held in May. The conferring of degrees and college certificates, and the awarding of honors highlight the commencement exercises. Students receiving associate's degrees or college certificates of 15 credits or more are expected to participate in the commencement. Students must meet all financial and library obligations to the College before a transcript, diploma, or certificate will be issued.

Student Rights and Responsibilities

In this section

Policy on Student Rights and Responsibilities 52

Student Rights

Freedom of Access to Higher Education 52

Freedom from Discrimination and Discriminatory Harassment. 52

Freedom from Sexual Harassment 52

Academic Freedoms 53

Freedom in Student Affairs 53

Right to Due Process 53

Student Responsibilities (in regard to misconduct) . . 53

Disruption of the Educational Process 53

Academic Dishonesty 53

Infringement of Rights of Others 53

Other Unlawful Acts or Violations of College Rules 54

Sanctions 54

Interim Suspension. 54

Due Process Guidelines 55

I. Student Complaint Procedures 55

Procedure for Final Grade Appeal 55

Procedure for Complaint Regarding Sexual or Discriminatory Harassment 55

Procedure for Complaint Against Faculty, Staff, or Administrative Offices 55

II. Procedures for Student Discipline 56

Basic Procedures 56

Procedures for Academic Dishonesty. 56

Appendices 57

Appendix A: Procedures for Disciplinary Hearings 57

Appendix B: Composition of the Student Review Board . . 58

Family Educational Rights and Privacy Act 59

Policy on Student Rights and Responsibilities

Washtenaw Community College is a community whose mission is to "make a positive difference in people's lives through accessible and excellent programs and services". Washtenaw is a learning community rich in the diversity of its teachers and staff who are deeply committed to helping students achieve their goals. It is a community drawn together by the common beliefs in the values of teaching and learning and the importance of respecting differences in people and in their ideas.

The primary purpose of the Policy on Student Rights and Responsibilities is to maintain an environment which supports the educational process and protects the safety and well-being of the College Community. The responsibility for maintaining such an environment is shared by all members of the community.

Washtenaw Community College students are members of both the College community and the community at large. As members of the College Community, students are subject to the rights and responsibilities which accrue to them by virtue of this membership. As members of the larger community, of which the College is a part, students are entitled to all rights and protection accorded them by the law of that community. By the same token, students are also subject to all laws and their enforcement. When students violate civil or criminal law, they may incur penalties prescribed by legal authorities. In such an instance, College discipline will be initiated when students also violate College regulations. Any violation of criminal law not listed in this policy may also, at the discretion of the College, result in student disciplinary action.

Within the College, it should be noted that this policy will supersede current program and departmental procedures if conflicts exist.

This policy and the companion procedures are intended to apply to all persons who have active student status at the College. This includes all persons who are actively registered for credit or credit-free courses and/or special training/education programs, workshops, and seminars. Guest students from other institutions, as well as high school students approved to take courses at the College, are also covered by these provisions.

The Office of the Associate Vice President of Student Services is charged with the responsibility of developing and administering guidelines and procedures to implement this policy.

Student Rights

Freedom of Access to Higher Education
Washtenaw Community College is an open-door institution, which means that any individual who has the ability to benefit from College offerings will be admitted. The mission of the College is to “strive to make a positive difference in people's lives through accessible and excellent programs and services.”

Freedom from Discrimination and Discriminatory Harassment
Discrimination against individuals on the basis of any protected category is antithetical to the values of the College and is prohibited by law. Harassment of individuals because of any of these innate characteristics will not be tolerated at Washtenaw Community College. Violation of this policy may result in discipline ranging from counseling up to and including dismissal.

Discriminatory harassment is defined as verbal or physical conduct based upon race, color, creed, religion, national origin, gender, sexual orientation, familial status, height, weight, ancestry, age, marital status, disability, or Vietnam-era veteran status that

1. adversely affects a term or condition of an individual's education, employment, or participation in a College activity;
2. is used as a basis for or a factor in any decision affecting the individual's employment, education, or participation in a College activity;
3. has the purpose or effect of unreasonably interfering with an individual's employment or educational performance; or
4. has the purpose or effect of creating an intimidating, hostile, offensive or abusive environment for that individual's employment, education, or participation in a College activity.

Freedom from Sexual Harassment
Washtenaw Community College is committed to maintaining an environment for learning, teaching, working, and research that is free of sexual harassment. Sexual harassment is antithetical both to the academic values of the College and the need for a work environment that is free from sexual harassment or coercion. Sexual harassment in any form is a violation of College policy and is prohibited by Title VII of the 1964 Civil Rights Act, Title IX of the Educational Amendments of 1972, and by the Elliot-Larsen Civil Rights Act of 1976. Sexual harassment will not be tolerated at Washtenaw Community College. Violation of this policy may result in discipline ranging from counseling up to and including dismissal or termination.

Academic Freedoms

1. Freedom of Speech and Expression
Students have the right to express their thoughts and opinions without fear of reprisal. Student evaluation shall be determined on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should bear in mind that the right to free speech does not include a license to harass or injure others or to disrupt orderly conduct of College classes or operations.

2. Protection Against Improper Academic Evaluation
Students shall have protection through due process against prejudiced or capricious academic evaluation.

3. Protection Against Improper Disclosure
Students shall have access to their educational records and the College will protect student educational records from dissemination or transferability without a student's consent. In this regard, it is College policy to comply fully with the provision and regulations of the Family Educational Rights and Privacy Act (FERPA) of 1974.

Freedom in Student Affairs

1. Freedom of Association
Students bring to campus a variety of interests and skills previously acquired and develop new interests as members of the College Community. They shall be free to organize and form associations to promote their common interests, to develop leadership skills and to meet new friends.

2. Participation in College Governance
As members of the College Community, students shall be free, individually or collectively, to express their views on issues of College policy or procedure and on matters of general concern to the student body.

3. Publications
Student publications are important in establishing and maintaining an atmosphere of free and responsible discussion and bringing issues of concern and importance to the attention of the College Community. The College and students will share student publication editorial responsibility for all College-sponsored or supported student publications in order to maintain the integrity of communities, as well as promote free inquiry and expression.

Right to Due Process

In administering this policy, the College guarantees each student accused of violating a published College policy, those principles of due process and fundamental fairness established by the Constitution of the United States. Due process at Washtenaw means that a student is assured that his/her rights as a student will be protected. Specifically, a student has the right: To be informed of all charges brought against him/her; that he/she be given a fair opportunity to refute them; that the College not be arbitrary in its actions; and that there be provisions to appeal a decision.

Student Responsibilities

The following defines misconduct by students. Students in violation of the following, acting alone or with others, are subject to disciplinary action up to and including dismissal.

Disruption of the Educational Process

1. No student, acting alone or with others, shall obstruct, interfere with, or disrupt any teaching, administrative, disciplinary, public service, research or other activity authorized or conducted on the College campus. This disruption does not necessarily have to involve violence or force for the student to face disciplinary action.
2. No student shall fail to comply with the lawful and reasonable directions of College officials or law enforcement officers acting in the performance of their duties and/or refuse to identify him or herself to these persons when requested to do so.

Academic Dishonesty
All forms of academic dishonesty including but not limited to collusion, fabrication, cheating, and plagiarism will call for discipline.

1. Collusion is defined as the unauthorized collaboration with any other person in preparing work offered for individual credit.
2. Fabrication is defined as intentionally falsifying or inventing any information or citation on any academic exercise.
3. Cheating is defined as intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.
4. Plagiarism is defined as the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work offered for credit.

Infringement of Rights of Others

1. Threatening, attempting, or using physical force or intimidation against any person on College premises or at College-sponsored functions or any student or employee in connection with the performance of his/her college duties.
2. Theft from or damage to the College premises or the property of other students, staff or faculty while on campus or at College-sponsored functions.
3. Discrimination, intimidation, or discriminatory harassment based on race, sex, color, age, religion, national origin, sexual orientation, or disability.
4. Sexual harassment (as defined under Student Rights, "Freedom from Sexual Harassment").
5. Stalking defined as harassment by repeated unconsented contact, which causes significant mental suffering or distress.

Other Unlawful Acts or Violations of College Rules, Regulations and Policies

1. Forgery, alteration or misuse of College documents records or identification, as well as knowingly furnishing false information to the College.
2. Possession, use, or storage of knives, firearms, fireworks, explosives, or other lethal weapons on campus or at any College-sponsored event.
3. Consumption or possession of any alcoholic beverages on College property unless previously approved by the President or his/her designee and then only for those who are of legal drinking age. This includes a prohibition of being intoxicated on campus.
4. Unlawful manufacture, distribution, dispensation, possession or being under the influence of any illegal drugs or controlled substances on College property or at College-sponsored activities.
5. Gambling on campus or at any College-sponsored function (excludes approved charitable fundraising activities).
6. Smoking in College buildings, including rented facilities. Smoking is prohibited in all buildings including private offices, entranceways, lobbies, conference rooms, restrooms, hallways, lecture halls, and classrooms. Smoking is not permitted outside of College buildings.
7. Misuse or damage to fire safety equipment on campus.
8. "Software piracy" or other illegal or unauthorized use of computer programs, equipment, or networks. This also includes theft or abuse of computer time.
9. Unauthorized presence in, use of, or damage to College premises, facilities, or property.
10. Bomb threats, false fire reports or other false warnings or threats, parking violations, violations of other published or posted regulations, unauthorized possession or duplication of College keys, lewd or indecent conduct, and unauthorized entry into files.
11. Violation of any civil or criminal laws while on campus or at College-sponsored events.

Sanctions

One or more of the following sanctions may be imposed for violations of College Policies:

1. **Disciplinary Reprimand:** The student is warned in writing that further misconduct may result in more severe disciplinary action.
2. **Restitution:** The student is required to make payment either with money or the performance of specific duties to the College or other persons, groups, or organizations for damages incurred as a result of a violation of this policy.
3. **Failing Grade:** In the case of academic dishonesty, the student may receive a failing grade for the test or for the course involved.
4. **Removal from a Course or Program:** A student may continue to attend other classes but may not attend the course or program from which he/she has been removed. In the event of removal, a student will be given either a withdrawal or a failure in the course.
5. **Internal Probation:** The student shall not represent the College in any extracurricular activity or hold membership in any student group, organization, or College committee. Additional restrictions or conditions may also be imposed. Notification will be sent to all appropriate College offices.
6. **Suspension:** Separation of the student from the College for a specified period of time. The student shall not participate in any College-sponsored activity and may be barred from College premises.
7. **Expulsion:** Permanent separation of the student from the College.
8. **Other Sanctions:** Other sanctions, including loss of access to College resources, mandated counseling or psychiatric assessments, may be imposed instead of, or in addition to, those specified in the above sections.

For example, students may be subject to restrictions upon their driving privileges on College property for disciplinary violations involving the use of motor vehicles, or, in the case of computer misconduct, students may forfeit the use of their E-mail account.

Interim Suspension

If a student's misconduct gives reason to believe his/her continued presence on campus poses an immediate and significant threat to the safety of him/herself, other students, College employees or campus property, the Associate Vice President of Student Services, the Vice President of Instruction, or other authorized College official (as specifically designated in writing by the College President) may suspend the student and exclude the student from campus pending a hearing.

Upon deciding to suspend a student, the Associate Vice President of Student Services or Vice President of Instruction must notify the student by the most expeditious means available. After notifying the student of the interim suspension, the College will proceed to organize a disciplinary hearing.

Any student given an interim suspension may request an expedited conference with the Associate Vice President of Student Services to discuss whether the suspension will continue until the hearing is completed.

Outcomes Statement:

The College will have a policy available that provides support for the educational process, protects the safety and well-being of the College community, and insures due process for all students.

Adopted: January 25, 1994
Revised: June 27, 2000
Revised April 12, 2002
Administrative Review: May 2002

Due Process Guidelines

I. Student Complaint Procedures

Introduction:

The purpose of these Student Procedures is to provide a mechanism for resolving student complaints against faculty, staff, and administrative offices. The concerns addressed include discrimination or intimidating treatment, as well as harassment on the basis of race, sex, age, religion, sexual orientation, national origin, and/or disability. Also included are any other seemingly arbitrary, capricious, unreasonable, or unprofessional conduct toward a student or groups of students by a faculty or staff member, or an administrative office of the College. This section of the policy deals with student-initiated complaints against faculty, staff, or administrative offices. The procedures regarding student complaints are grouped in three categories:

A. Student grade appeals
B. Sexual and discriminatory harassment
C. Student complaints regarding any College faculty, staff, or administrative office

Complaint forms are available in the offices of the Deans, the Associate Vice President for Student Services, and the Vice President for Instruction.

A. Procedure for Student Final Grade Appeal

A student may appeal any letter grade from any course. All parties are to be notified of any action taken during the entire process. The process consists of the following steps:

Step One: Student discusses concerns with the course instructor.

Step Two: If Step One does not resolve the appeal, the student submits a written request for a meeting to the Department Chair. This step must be taken within five months of the posting of the grade to the student's record.

Step Three: After discussion with the student and/or the instructor, the Department Chair makes an initial determination regarding the basis for an appeal, and may suggest that there is no basis for appeal, or may suggest that the student could appeal to the Division Dean.

Step Four: If the student wishes to pursue the appeal, he/she should submit the written appeal within five days to the Division Dean, along with a request for a meeting and notification that he/she has already talked to the faculty member and Chair.

Step Five: The Division Dean invites both the student and the instructor to a meeting and issues a written decision. This step must be completed within six months of the posting of the grade to the student's record.

Step Six: A final appeal may be made in writing to the Vice-President for Instruction. The Vice President for Instruction shall make a final determination and shall inform the student in writing of his/her decision.

B. Procedure for Student Complaint Regarding Sexual and Discriminatory Harassment

Any student who feels that he/she has been subjected to sexual or discriminatory harassment, or who is aware of conduct that violates College policies against sexual or discriminatory harassment should immediately report the matter to his or her instructor, to any Dean or Executive Officer, or to the Associate Vice President for Student Services.

Any instructor, Dean, or other staff member who receives such a report should consult with General Counsel regarding investigation and resolution of the complaint.

C. Procedure for Student Complaint Regarding College Faculty, Staff, Personnel or Administrative Offices

1. Complaints against College Faculty or Instructional Staff

Step One: The student should make an effort to resolve the complaint informally by means of a meeting with the parties involved prior to filing a formal, written complaint.

Step Two: If the complaint cannot be resolved at the informal step, the complaint should be filed in writing with the appropriate Dean within 20 working days of the decision or event that generated the complaint. The Associate Vice President for Student Services may be consulted if needed.

Step Three: The Dean will review, investigate, and attempt to resolve the complaint. The Dean may request further information in writing and/or may schedule a meeting with all involved parties. If the complaint is not resolved at this level, the complaint will be referred by the Dean to the Vice President for Instruction.

Step Four: If the complaint is not resolved and the Vice President for Instruction determines that further review is appropriate, he/she may convene the Student Review Board (see Appendix B).

Step Five: If convened by the Vice President for Instruction, the Student Review Board will deliberate and recommend that the original administrative position should stand or that some modification or reversal take place. The Vice President for Instruction may choose to follow directly, modify, or disregard the Review Board's recommendation. The decision of the Vice President for Instruction is final.

Step Six: The Vice President for Instruction will notify the student of the final decision. A copy of the decision will also be sent to the College President and the area Dean.

2. Complaints Against College Non-Instructional Staff, Personnel or Administrative Offices

Step One: The student should make an effort to resolve the complaint informally by means of a meeting with the parties involved prior to filing a formal, written complaint.

Step Two: In the case of a complaint against College staff, personnel or administrative offices, the complaint should be filed with the Associate Vice President for Student Services within

20 working days of the decision or event that generated the complaint.

Step Three: If the complaint is not resolved, and the Associate Vice President determines that further review is appropriate, he/she may convene the Student Review Board (see Appendix B).

Step Four: If convened by the Associate Vice President, the Student Review Board will deliberate and recommend that the original administrative position should stand or that some modification or reversal take place. The Associate Vice President may choose to follow directly, modify, or disregard the Review Board's recommendation. The decision of the Associate Vice President is final.

Step Five: The Associate Vice President will notify the student of the final decision. A copy of the decision will also be sent to the College President and the executive officer of the area involved.

3. Complaints against Associate Vice President for Student Services or Vice President for Instruction

Step One: If the complaint is against the Associate Vice President for Student Services or the Vice President for Instruction, and the complaint cannot be solved through informal means, then a written complaint should be filed with the President's office.

Step Two: If the complaint is not resolved and the President determines that further review is appropriate, he/she may convene the Student Review Board (See Appendix B).

Step Three: If convened by the President, the Student Review Board will deliberate and recommend that the original administrative position should stand or that some modification or reversal take place. The President may choose to follow directly, modify, or disregard the Review Board's recommendation. The decision of the President is final.

Step Four: The President will notify the student of the final decision.

II. Procedures For Student Discipline

A. Basic Procedures

These basic procedures apply to all student misconduct except academic dishonesty. See IIB for Academic Dishonesty Procedures. Anyone with a complaint against a student may attempt to resolve the complaint by informal means prior to filing a charge.

Step One: Charges of violations may be made by any student or College employee and must be filed, in writing, in the Associate Vice President for Student Services' Office.

Step Two: The Associate Vice President for Student Services or his/her designee makes a preliminary investigation of the allegations. If the Associate Vice President determines that the charges and evidence warrant proceeding further and informal resolution methods have not proved fruitful, the Associate Vice President shall notify the student in writing of the charges filed against him/her with specification of each. This notification shall include a copy of the Student Rights and Responsibility, which specifies a range of potential sanctions and describes a course of action available to the student. This notice shall be sent by both certified mail and first class mail to the student's last known address within ten (10) College work days after charges were first filed with the Associate Vice President for Student Services.

Step Three: After receipt of the letter, the student has the right to choose one of the following options. The student must state in writing what that choice is within ten (10) College workdays.

a. The student may admit the alleged offense and request, in writing, that the Associate Vice President take whatever action he/she deems appropriate.

b. The student may deny the alleged offenses and request either an Administrative or Student Review Board hearing (see Appendix A).

Step Four: The student has the right not to respond. In this event, the Associate Vice President has the right to take whatever measures are deemed necessary.

Step Five: If Option 3 (a) is chosen, the Associate Vice President for Student Services will discuss the accusations with the student and take disciplinary action, if indicated.

Step Six: If the student requests a hearing under Option 3(b), the hearing will occur within twenty (20) College work days after receipt of the student's written request.

Step Seven: The student shall be notified at least three (3) College work days prior to the hearing. This hearing notice will describe the charges with sufficient particulars to enable the student to prepare a defense, specify the time and place of the hearing, and usually provide the name(s) of witness (es) scheduled to appear.

Step Eight: If convened, the Student Review Board will deliberate and make a recommendation to the Associate Vice President for Student Services. The Associate Vice President may choose to follow directly, modify, or disregard the Review Board's recommendation. The decision of the Associate Vice President is final.

B. Procedures for Academic Dishonesty

These procedures cover conduct described under Student Responsibilities - "Academic Dishonesty". Any individual who suspects that academic dishonesty has occurred should report the incident to the instructor in charge of the class. It is the professional obligation of the faculty to enforce academic integrity in their courses.

Step One: If the instructor suspects a student of academic dishonesty, he/she will meet with the student as soon as possible. If the meeting does not alleviate the instructor's suspicions, the instructor will notify the student in writing within three (3) days of the meeting that the matter is being referred to the Division Dean for disciplinary action. At the same time, the Student will also be notified that he/she may contact the Vice President for Student Services for consultation and assistance. A copy of the procedure for academic dishonesty will accompany the written notice to the student. The instructor will forward copies of the above written documentation to the appropriate Division Dean.

Step Two: The student must respond in writing to the Division Dean within five (5) College working days of written notification, either admitting or denying the charges. If the student admits the charge, or does not respond in writing within five working days, the Dean may take whatever action he/she deems appropriate after consultation with the instructor.

Step Three: If the student denies the charge, the instructor shall review the charge and documentation with the Division Dean. The Dean will investigate the charges, reviewing documents and interviewing witnesses (including the student suspect), as he/she deems appropriate and reach a decision regarding the student's culpability. Within fifteen (15) days of the student's written response, the Dean must place in writing to the student, the faculty member and the Associate Vice President for Student Services the Dean's decision and advise the student of the right to appeal.

Step Four: The student may accept the decision or request in writing an administrative hearing before the Associate Vice President for Student Services. The Associate Vice President for Student Services shall inform the Vice President for Instruction of the appeal.

Step Five: The decision of the Associate Vice President for Student Services at the close of the hearing shall be final.

Appendices

Appendix A

Procedures For Disciplinary Hearings

Administrative Hearings are held before the Associate Vice President for Student Services (or a designee), who shall render a decision in the matter. The Associate Vice President shall be the Chair, and shall conduct the hearing and rule on matters of procedure, evidence, and participation. If a designee is appointed by the Associate Vice President, the designee will have the authority to take all of the actions described below on behalf of the Associate Vice President.

Student Review Board Hearings are held before a Student Review Board, composed as specified in Appendix B, which shall make a recommendation to the Associate Vice President for Student Services. The Chair of the Student Review Board shall conduct the hearing and rule on matters of procedure, evidence, and participation.

General Provisions

1. The Associate Vice President for Student Services shall arrange for the hearing to be held and shall notify all parties at least three (3) days prior to the hearing of the time, date, and location of the hearing.
2. The student is entitled to appear in person at the hearing to present his/her defense, including the presentation of affidavits, unsworn statements, exhibits, and witnesses.
3. The student has the right to elect not to appear at the hearing even though the student requested the hearing. Should s/he not appear, the hearing shall be held in the student's absence.
4. At least forty-eight (48) hours prior to the hearing, the College may make available to the student for review, at a reasonable time and place, any affidavits, unsworn statements, or exhibits which the College or complainant intends to submit at the hearing.
5. The student has the right to have a non-participatory advisor present at the hearing.
6. The student shall be permitted to hear evidence against him/her, present the defense, and call witnesses. Only the Chair is permitted to cross-examine witnesses. The accused student and members of the Review Board may suggest to the Chair questions to be asked on cross-examination.
7. The hearing will be closed to the public unless an open hearing is requested by the student. If the hearing is open, the Chair may still close a portion of the hearing to protect the privacy of a complainant, victim(s), or witness (es).
8. Formal rules of evidence shall not be applicable in student disciplinary hearings. The Chair shall adhere to the appropriate rules of confidentiality and privilege, but shall otherwise, at his/her sole discretion, admit all matters into evidence which reasonable persons would accept as having probative value in the conduct of their affairs. Unduly repetitious or irrelevant evidence may be excluded.
9. The student has the right to refuse to answer questions. However, the student's refusal to answer questions may be considered in any finding, decision, or recommendation.
10. The facts of the case shall be determined solely on the basis of evidence presented at the hearing.
11. The College will provide for a record of the hearing to be kept.

Hearing Procedures

These procedures are intended as guidelines only. The Chair shall conduct the hearing, giving due consideration to fairness and due process for all proper participants. Failure to follow these procedures shall not be grounds for reversal or reconsideration.

1. The Chair calls the hearing to order and verifies those in attendance.
2. The Chair reads a statement that cautions all participants that the proceedings of the hearing must be treated with great discretion and that anyone's disclosures or repetition of what they hear may violate privacy rights or be inflammatory. In a closed hearing, anyone who objects to keeping the proceedings confidential may be required to leave the hearing room. The Chair further cautions all participants that anyone, including the complainant or the student, who is deemed by the Chair to be disrupting the orderly process of the hearing will be required to leave the hearing room.
3. The Chair provides an overview of the procedures to be followed during the hearing, deliberation, and decision.
4. The Chair presents a summary of the complaint or reads the charges against the student.
5. The complainant or a member of the College faculty or administration presents the complainant and evidence and witnesses in support of the allegations against the student.

6. The student then may present evidence and witnesses to support the student's position. The complainant or College faculty or administrator may present rebuttal evidence.

7. The Chair shall rule to admit or exclude evidence at the hearing.

8. At the Chair's discretion, the Chair or members of the Student Review Board may ask questions of the presenters or of witnesses during the course of the proceedings. The student or the complainant may request the Chair to ask specific questions of a witness.

9. Both parties have the opportunity to present brief (no more than 10 minutes) summation arguments.

10. The Chair declares the hearing closed, and participants are excused from the hearing room.

Deliberation and Decision

1. Administrative Hearing: After reviewing the evidence presented at the hearing, the Associate Vice President will determine whether a violation of College policy or regulations has occurred. If s/he determines that there has been a violation, the Associate Vice President will decide upon the appropriate disciplinary sanction.

2. Student Review Board Hearing: The Student Review Board must deliberate in private and determine, by majority vote, whether the student has violated College policy or regulations. Within two (2) College business days of the close of the hearing, the Review Board must deliver in writing to the Associate Vice President of Student Services its determination as to whether a violation has occurred and, if so, its recommendation as to an appropriate disciplinary sanction.

3. The Associate Vice President of Student Services shall render a decision in writing within ten (10) College business days of the close of the hearing. The Associate Vice President may adopt, modify, or disregard the Review Board's recommendation. The Associate Vice President's decision shall include a determination as to whether there was a violation and what sanction, if any, will be imposed. The decision may also include a written explanation or rationale for any deviation from the Review Board's recommendation.

4. The Associate Vice President of Student Services will inform the student and the complainant of the decision, and of the right of either party to appeal. Copies may also be provided to the Review Board members and the Vice President of Instruction.

Appeal

Either the complainant or the accused student may appeal the decision of the Associate Vice President of Student Services. The appeal must be submitted in writing to the President of the College within three (3) business days of the decision of the Associate Vice President. In reviewing the matter, the President may take whatever actions s/he deems appropriate. The President shall render a final decision in the matter.

Appendix B

Composition of the Student Review Board

1. The Student Review Board shall be responsible for reviewing and making recommendations to the Associate Vice President of Student Services on student disciplinary matters and, as appropriate, matters involving the resolution of complaints concerning administrative decisions that affect students.

2. The Student Review Board shall be appointed by the Associate Vice President of Student Services and shall be composed of two (2) faculty, two (2) students, and one (1) administrator who will serve as the Chair.

3. The Associate Vice President of Student Services shall notify the parties three (3) days prior to the hearing of the names of individuals who may comprise the Student Review Board.

4. The complainant or the accused student may challenge a Student Review Board member on the grounds of bias. Challenges to the membership must be directed in writing to the Chair at least forty-eight (48) hours prior to a scheduled hearing. If the challenge is upheld, a replacement member will be selected.

Revised April 12, 2002

Revised September 23, 2004

Substance Abuse

The College has adopted the following position, consistent with requirements of the federal drug-free campus regulation and with federal, state, and local law, with respect to drug use on campus. All students, employees, and visitors are specifically forbidden to use, possess, or distribute alcoholic beverages or illegal drugs, or to be under the influence of the same while on College property. An exception will be made at those few functions for which permission to serve alcohol has been obtained through the proper channels (what are the proper channels?) and then only for those who are of legal drinking age. Offenders will be subject to legal and /or disciplinary action by the College. Sanctions will be consistent with local, state, and federal law and will range from a disciplinary reprimand or a requirement to complete a rehabilitation program up to suspension, expulsion, or referral for prosecution.

Release of Student Information (FERPA)

The Family Educational Rights and Privacy Act (FERPA) grants students certain rights with respect to their educational record. Washtenaw Community College (the College) is committed to making sure that student rights under FERPA are protected. FERPA Rights are extended to students as soon as they are successfully registered for classes at the College.

Students have the following rights:

1. The right to inspect and review their education records within 30 days from the day the College receives a request for access.

- File a written request to inspect with the Enrollment Services Office.
- Educational records will be available for inspection within 30 days.
- The student will be notified of the time and place to inspect the records.

2. The right to request the amendment of any part of the education record that the student believes is inaccurate.

- File a written request with the Enrollment Services Office that clearly identifies the part of the record that the student wants changed, and specify why the student found it to be inaccurate or misleading.
- If the College does not make the change, the student will be informed and advised of the right to a hearing. Information about requesting a hearing will be included in the notice.
- The right to challenge grades does not apply under the Act. See the Procedure for Student Final Grade Appeal in this publication.

3. The right to provide written consent before the College discloses personally identifiable information from the student's education record, except to the extent that FERPA authorizes disclosure without consent.

- FERPA permits the disclosure of personally identifiable information without consent to school officials with legitimate educational interest (the school official needs to review a student record to fulfill his or her professional responsibility).

  A school official is:

  a) a person employed by the College in an administrative, supervisory, academic or research, or support staff position (including campus security or health personnel);

  b) a person or company with whom the College has contracted (such as an attorney, auditor, or collection agent, official of the National Student Clearinghouse, or any third party performing an assigned College activity);

  c) a person serving on the Board of Trustees; or

  d) a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

- FERPA allows the College to release student education records without student consent as follows:

  a. to officials of another school, at their request, in which a student seeks to enroll

  b. to appropriate parties in a health or safety emergency

  c. to comply with a judicial order or lawfully issued subpoena

  d. in connection with a student's financial aid request, as necessary to determine the eligibility, amount or conditions of the financial aid, or to enforce the terms and conditions to the aid

  e. to certain officials of the U.S Department of Education, the Comptroller General, state and local educational authorities, in connection with certain state or federally supported education programs

  f. to accrediting organizations to carry out their functions

  g. to organizations conducting certain studies for or on behalf of the College

  h. to the alleged victim of a crime of violence, in order to give the alleged victim the results of an institutional disciplinary proceeding against the alleged perpetrator

- The College may release education records without student consent to the parents or guardians of students enrolled in Youth Classes or Youth Camps, as these are not post-secondary.

4. The right to restrict disclosure of items the College has designated as directory information.

- FERPA permits disclosure of directory information without student consent. The College has designated the following as directory information:
  - name;
  - address and telephone number;
  - e-mail address;
  - date of birth;
  - field of study ;
  - enrollment status, such as full-time or part-time;
  - number of credits earned ;
  - participation in College activities and Club Sports;
  - weight and height information of Club Sport participants;
  - dates of attendance and graduation, and degrees received;
  - most recent previous educational institution attended;
  - honors and awards received;
  - photographs
- Students may have all of their directory information withheld by filing a written request for confidentiality with the Student Connection.
- The College assumes that failure to file a written request for confidentiality that specifically requests the withholding of directory information indicates individual approval for disclosure.

- This request for confidentiality would mean that the College would not release any directory information to potential employers, to insurance companies for verification of enrollment, or to other organizations requesting directory information on the student's status, unless the student provides a written release or rescinds the previous request in writing.
- Students who wish to rescind a request for confidentiality must appear in person at the Student Connection with photo identification and a written request.

5. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5920

Campus Safety

In this section

Campus Safety and Security 62

College Closing for Emergency and Severe Weather. . 62

Contacting a Student in an Emergency 62

Reporting an Emergency. 62

Anonymous Tip Line 62

Safe Escort 62

Motorist Assists 62

Lost and Found 62

Parking 62

Smoke-Free Campus 63

Campus Security works 24/7, 365 days

Call 3411 from a campus phone

Call 973-3411 from a cell phone

Outside emergency phones are in parking lots and exterior areas

Look for

Green cylindrical towers

"Emergency" printed on the side

A blue light on top

Push the button to call Security

Inside emergency phones are located in campus hallways and lobbies

Look for

Blue boxes on the wall

Push the button to call Security

Campus Safety and Security

Access our web site to find the emergency exits in your building, learn emergency procedures and look up statistics. Go to the WCC home page, look at the *About WCC* heading, and choose *Campus Safety*. Security offices are located on the 2nd floor of the Student Center Building and in the Plant Operations Building.

College Closing for Emergency and Severe Weather

Occasionally extreme weather conditions or other unforeseen events necessitate closing the College either before or after classes have begun for the day. Students should check the College Web site, www.wccnet.edu, or call the School Closing Information Line at (734) 677-5288 for the most up to date and accurate information. Now you can receive time-sensitive notices via voice, email or text messaging regarding campus closings and emergencies. To sign up information, go to *MyWCC* and click *WCC Alert Emergency Notification Services*.

Contacting a Student in an Emergency

If the Office of Campus Safety and Security receives a request to locate a student on campus because of a medical emergency, they will attempt to locate the student in the assigned classroom. If the student cannot be located, the caller will be informed. No other information will be released to the caller.

Reporting an Emergency

When notifying the Office of Campus Safety and Security of a potential emergency, or suspected criminal activity, be prepared to provide the following information to the dispatcher:

- Type of incident or activity, location of incident, and description of persons involved (if criminal in nature)
- Suspected injury or condition (if medical emergency)
- Your name, location, and number calling from

This information will aid Campus Safety and Security staff in their response and subsequent handling of the incident. You should remain available to assist staff with any required additional information once they arrive. Campus Safety and Security staff are trained in medical emergency procedures and will notify additional medical and/or law enforcement support as needed.

Campus sites are patrolled by local law enforcement agencies. Security personnel maintain a close working relationship with those agencies and serve as the College's liaison with them. Security personnel receive both annual and on-going training in a variety of safety and security related subjects.

The College will report criminal activity to the law enforcement agency in whose venue the act occurs. The College will annually request from each law enforcement agency data indicating criminal activity for each particular site in accordance with the Student Right To Know and Campus Security Act.

Anonymous Tip Line

The Campus Safety and Security Department employs a voice mail account to facilitate anonymous tips. The phone number is (734) 677-5343 (or extension 5343, if on campus), and is checked daily by CSSD staff. This line is not restricted to anonymous tips, and may be utilized by anyone wishing to leave a message.

Safe Escort

Staff, students and guests may request a security escort from any location on campus to any other location on campus by contacting the Office of Campus Safety and Security at (734) 973-3411.

Motorist Assists

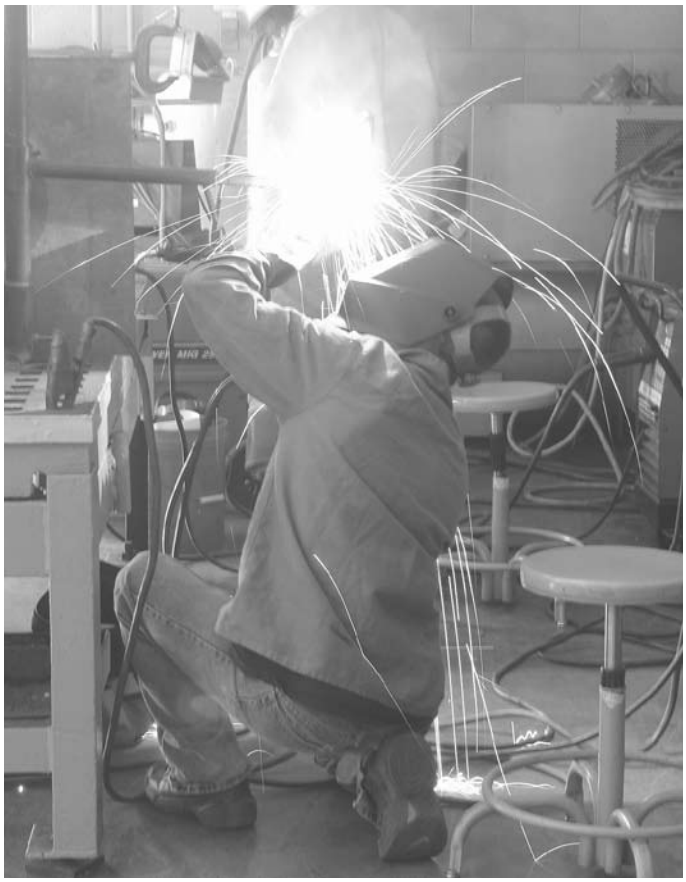
Security staff will provide vehicle jump-start assistance to those who leave their lights on, etc. The Campus Safety and Security Department will assist motorists in contacting local assistance for further service needs.

Lost and Found

Found items may be turned in to the Campus Safety and Security Department where they will be kept for one month. Persons may retrieve found items at the Campus Safety and Security Department in the Plant Operations Building. Persons who have lost property on college premises should contact the office at (734) 973-3411 with a description and approximate value of the item.

Parking

Free parking is provided on campus for general, handicapped, visitor, vendor and service vehicles. Parking is prohibited in the following areas: bus stops, fire lanes, main travel lanes, sidewalks, handicapped spaces without a permit, restricted parking spaces without a permit, marked crosswalks, building entrances and exits, and outside marked parking spaces. Parking regulations



on campus are covered by Campus Safety personal and violations will be issued. Allow enough time to park and walk to the classroom because the parking area is vast. The parking spots fill quickly and the available parking may be a 15-minute walk to your class.

Smoke-Free Campus

Washtenaw Community College is a smoke-free campus. Smoking is not permitted anywhere on the campus; this includes all College facilities, including buildings, sidewalks, parking lots, building entrances, common areas, as well as the surrounding fields and woods. The Administration shall fully implement this policy, and all applicable laws, regulations, and local ordinances related to smoking.

III Mechanics
A Inspiration
C Lung Volumes
1 TV - 500ml
5 IC = TV+IRV
(3,500ml)
6 EC = TV+ERV
(1,400ml)
7 FRC = ERV+RV
(2,300ml)
8 VC = IRV+TV+ERV
(4,800ml)
9 TLC = VC+RV
(5,800ml)

Curriculum

In this section

Degrees and Certificates Awarded 66

Associate Degrees 66

Certificates 66

Discontinuation of Degrees and Certificates 66

General Education Graduation Requirements 67

General Education Course Requirements 67

Computer and Information Literacy Requirement 67

Approved Courses for General Education 68

EMU Diverse World Requirement 69

MACRAO Transfer Agreement 70

Articulation Agreements 71

Program Index 72

Degrees and Certificates 74

All programs offered by Washtenaw Community College are listed and described in this section of the Bulletin. Programs are arranged alphabetically by the school to which they belong. The following additional information is provided so that students can quickly and easily find the programs and course-related information that fits their needs and interests:

- An overview of the types of degrees and certificates available at WCC
- General Education requirements
- The MACRAO Transfer Agreement
- An alphabetical index listing all programs
- Detailed descriptions of each program listed with the title and a unique identifying code
- A Curriculum Organization Chart indicating the disciplines and departments found within the divisions in the College

Degrees and Certificates Awarded

Associate Degrees

Washtenaw Community College offers three associate degrees that are assigned based on a program's primary purpose, and the minimum level of prescribed general education requirements. The degree title and specific program title will appear on the diploma. The degrees and their purposes are as follows:

Associate in Arts (AA)

The Associate in Arts is a transfer degree, used primarily by humanities and social science programs. Additionally, some transfer programs in health, technology and business use the AA degree title. A.A. degrees require between sixty and sixty-three credit hours to complete

Associate in Science (AS)

The Associate in Science degree is primarily used by transfer programs that have significant math and science requirements. It requires a minimum of sixty credit hours.

Associate in Applied Science (AAS)

The Associate in Applied Science is the standard career-entry degree. It is used for programs that prepare students for careers in health, business and technology. Ranging between sixty and seventy-two credit hours, this degree has dual use for some programs that are primarily career-entry but also have articulation agreements with specific bachelor's degree programs.

Certificates

The College offers four types of certificates that are designed to meet a variety of student needs ranging from preparation for entry-level jobs to advanced job skills for those who are already in the work force. Certificates can also form the foundation for an associate degree. The certificate titles and their purposes are as follows:

Certificate of Completion

The Certificate of Completion is used for short-term programs covering a discrete body of skills and/or knowledge that is intended to prepare students for a specific entry-level occupation or basic literacy attainment. The Certificate of Completion can be credit or noncredit, but is limited to a maximum of eight credit hours.

Certificate

The Certificate is awarded for standard credit programs that normally take two semesters to complete and range from nine to thirty-six credit hours. Primarily used to prepare students for entry-level occupations, the certificate also may be used to prepare students for an advanced certificate. Certificates also may form the basis for an associate degree.

Advanced Certificate

The Advanced Certificate is for students who are pursuing advanced study in an occupational area. These may be short term or longer programs that require completion of a certificate or equivalent industry experience for admission. Some advanced certificates prepare students for industry certification exams. The Advanced Certificate, ranging from nine to thirty-six credit hours, may be added to a Certificate to form the basis for an associate degree.

Post-Associate Certificate

The Post-Associate Certificate is intended for students who are pursuing advanced study and/or formal certification in an occupational area. These programs can be from nine to thirty-six credit hours in length and require an associate degree or equivalent industry experience for admission to the program.

Discontinuation of Degrees and Certificates

Washtenaw Community College's policy is to phase out discontinued programs over a period of three years. Students following programs that were discontinued are urged to see a program advisor to determine whether it is possible to complete their programs or, if it is necessary, to change to a new program. Students will be advised on making course substitutions and, if necessary, on selecting a new program.

General Education Graduation Requirements

Philosophy Statement

General Education is highly valued at Washtenaw Community College because it develops and nurtures certain habits of mind that reach beyond a student's area of academic emphasis and enables the student to meet critically, objectively, and successfully the challenges of education, work, and life. By requiring a strong core of common learning, the College demonstrates its commitment to providing a broad-based education to all degree recipients, which includes useful skills, knowledge, and experiences to support a variety of lifelong endeavors. To this end, it shall be the policy of the College to maintain a substantial program of general education to be included in all degree programs.

The College defines general education as a prescribed curriculum that assures a broad acquaintance with the basic areas of academic study. The general education requirements are designed to provide degree students certain skills and knowledge that include an understanding of and appreciation for the important modes of human thought, communication, and inquiry.

Students who have earned a bachelor's degree or higher from an accredited U.S. college or university may request a waiver of the general education requirements in the Office of Student Records.

General Education Course Requirements

Students pursuing associate degrees are required to meet the general education requirements in the eight areas listed below. The content areas are met through course distribution requirements (successfully completing courses from restricted distribution lists). Critical thinking is incorporated into the courses in the first six areas and does not require any additional coursework. Computer and information literacy is met through competency testing.

Writing - Develop, organize, and express thoughts in writing using Standard English

Speech - Speak in an organized and effective manner and listen critically and with comprehension

Mathematics - Understand the applications and perform computations using the concepts of college-level mathematics

Natural Science - Understand principles and applications of modern science

Social and Behavioral Science - Understand principles and applications of social and behavioral sciences in exploring the dynamics of human behavior

Arts and Humanities - Understand and apply information related to the nature and variety of the human experience through personal and cultural enrichment

Critical Thinking - Demonstrate skill in analyzing, synthesizing and evaluating

Computer and Information Literacy - Demonstrate the skill to use computer information systems including using software and the ability to locate, retrieve, and evaluate networked information

Course Distribution Requirements

Associate degree students must complete courses from each of the six General Education areas below. The requirements vary, depending on which degree is being earned. The chart below lists the number of general education credit hours required for each degree.

	AA	AS	AAS
Writing	6-7 credits	6-7 credits	3-4 credits
Speech	3 credits	3 credits	3 credits
Mathematics	3-4 credits	3-4 credits	3-4 credits
Natural Science	3-4 credits	3-4 credits	3-4 credits
Social & Behavioral Science	6 credits	6 credits	3 credits
Arts and Humanities	6 credits	6 credits	3 credits
	27-30 credits	27-30 credits	18-21 credits

Computer and Information Literacy Requirement

Associate degree students must demonstrate basic computer skills and knowledge. Courses taken at other institutions, work experience, or transfer credit will not satisfy this requirement.

Students can fulfill this requirement through either of the following options:

1. Pass the Computer and Information Literacy test with a score of 70% or higher. Students can take the test two times. If a passing score is not attained, CIS 099 must be taken and passed with a "C" or better.

or

2. Pass, with a "C" or higher, specified courses that incorporate the Computer and Information Literacy objectives. These courses might be taken as part of the degree requirements for a particular program. The courses include:

a. CIS 099 Computer Literacy;

b. CIS 100 Introduction to Computers and Software Applications;

c. CIS 110 Introduction to Computer Information Systems.

Students who are seeking an associate degree should take the Computer and Information Literacy test at their earliest opportunity, preferably upon admittance to the College. Some courses and programs require students to have passed this test before enrolling. The test is administered in the Testing Center. The schedule for testing can be found in the Academic Class Schedule.

Approved Courses for General Education Distribution Areas

The following courses are approved for General Education in the Writing, Speech, Mathematics, Natural Sciences, Social and Behavioral Sciences, and Arts and Humanities areas. Some courses are limited to a specific degree or program; check the footnotes when selecting courses. Students also should check the requirements for their programs to determine if specific courses are required or recommended.

Writing

ENG 100[1]	Introduction to Technical and Workplace Writing	4
ENG 107[1]	Technical Writing I	3
ENG 111	Composition I	4
ENG 226	Composition II	3
ENG 208[2]	Technical Writing II	3

1 *May be used for the AAS degree only*

2 *May be used for the AAS degree or students in the Technical Writing Program (ASTWRT)*

Speech

COM 101	Fundamentals of Speaking	3
COM 102	Interpersonal Communication	3
COM 142	Oral Interpretation of Literature	3
COM 183	Persuasion	3
COM 200	Family Communication	3
COM 225*	Intercultural Communication	3

** See the EMU Diverse World Requirement list.*

Mathematics

Any 100-level or higher MTH course, with the exception of the following courses, which apply to only the programs or degrees specified:

MTH 125[1]	Everyday College Math	3
MTH 148[2]	Functional Math for Elementary School Teachers I	4
MTH 149[2]	Functional Math for Elementary School Teachers II	4
MTH 151[1]	Technical Algebra	4
MTH 157[1]	Practical Geometry and Trigonometry	3
MTH 166[3]	Math for Radiography	3
MTH 167[4]	Math Applications for Health Science	3

1 *May be used for the AAS degree only*

2 *For students following an elementary or early childhood education track only*

3 *For students in the Radiography Program only*

4 *For students in Health Programs only*

Natural Sciences

Any 100-level or higher, 3 credit or more course in the following disciplines, with the exceptions noted below:

AST, BIO, CEM, GLG, PHY

The following courses apply only to the programs specified:

GLG 202[2]	Earth Science for Elementary Teachers	3
PHY 110[1]	Applied Physics	4
SCI 101[1]	The Nature of Science	3
SCI 102[3]	Applied Science	3

1 *May be used for the AAS degree only*

2 *For students following an elementary or early childhood education track only*

3 *For United Association students only*

Social and Behavioral Science

Any 100-level or higher, 3 credit or more course in the following disciplines:

ANT*, ECO* *(except for ECO 111 which can be used only for the AAS degree),* GEO*, HST*, PLS*, PSY, SOC*

** See the EMU Diverse World Requirement list.*

Arts and Humanities

Any 100-level or higher, 3 credit or more course in the following disciplines:

ARB, FRN, GRM, PHL, SPN

Or, any course listed below:

ART 130	Art Appreciation	3
ART 143*	Art and Culture of Afro-America	3
ART 150*	Monuments from Around the World	3
DAN 180*	Dance Appreciation: The World of Dance	3
DRA 152	Acting for the Theatre I	3
DRA 208	Acting for the Theatre II	3
ENG 140	Horror and Science Fiction	3
ENG 160	Introduction to Literature: Poetry and Drama	3
ENG 170	Introduction to Literature: Short Story and Novel	3
ENG 181*	African American Literature	3
ENG 187	Folk Literature and Culture of the Caribbean and South America	3
ENG 200	Shakespeare	3
ENG 211	American Literature I	3
ENG 212	English Literature I	3
ENG 213*	World Literature I	3
ENG 214*	Literature of the Non-Western World	3

ENG 222	American Literature II	3
ENG 223	English Literature II	3
ENG 224*	World Literature II	3
ENG 240	Children's Literature	3
ENG 242*	Multicultural Literature for Youth	3
ENG 260	Journal Workshop I	3
ENG 261	Journal Workshop II	3
ENG 270	Creative Writing I	3
ENG 271	Creative Writing II	3
ENG 281	African Literature	3
GDT 101	History of Graphic Design	3
HUM 101	Humanities I - Ancient to Medieval Times	3
HUM 102	Humanities II - Renaissance to Modern Times	3
HUM 103	Introduction to Humanities – 20th Century	3
HUM 145	Comparative Religions	3
HUM 146	Mythology	3
HUM 150	International Cinema	3
HUM 160	American Film	3
HUM 175	Arts & Cultures of Middle East (3000 BCE-1800 CE)	3
HUM 185	The Horror Film	3
IDN 224	History of Interior Design I	3
IDN 234	History of Interior Design II	3
MUS 140	Music Theory I	3
MUS 142	Music Theory II	3
MUS 180	Music Appreciation	3
PHO 103	History of Photography	3

EMU Diverse World Requirement

** For WCC students who complete these courses prior to being admitted to EMU, the following courses should meet EMU's diverse world requirement.*

ART 143	ECO 280	ENG 242	HST 240
ART 150	ENG 181	GEO 101	HST 251
ANT 201	ENG 213	HST 150	PLS 211
COM 225	ENG 214	HST 230	SOC 205
DAN 180	ENG 224	HST 235	

MACRAO Transfer Agreement

MACRAO Transfer Agreement

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) has developed an agreement to facilitate transfer from Michigan community colleges to baccalaureate colleges and universities. The agreement provides for transfer of up to 30 semester credit hours to meet many (in some cases all) of the general education requirements at participating Michigan four-year schools. Students should check with the college to which they plan to transfer to determine if the MACRAO agreement is honored or if the college puts limitations or provisos on the agreement. Please see www.macrao.org for additional information.

How the Agreement Works

The MACRAO Transfer Agreement stipulates that 30 semester credit hours of 100-level and above, compatible, college-level coursework completed at one Michigan Community College will transfer to another Michigan college or university, and be applied toward meeting the student's general education requirements at the "transferred to" institution. A complete listing of course and credit hour requirements is included here. The institution offering the courses (the college in which a student begins) determines the specific courses in each category. In order to get the MACRAO certification from WCC, students need to have earned 25% of their total MACRAO credit hours at WCC (approximately 8 credit hours) and must have earned a minimum 2.0 GPA in each of the 4 areas: English Composition, Social Science, Science and Math, and Humanities. Once students have completed the course requirements for meeting MACRAO, they must call (734) 973-3658 or (734) 973-3546 to request that their transcripts be certified as "MACRAO Agreement Satisfied." You must request this service before a transcript is sent to a transfer college.

MACRAO Transfer Requirements

*Note: Some MACRAO-approved courses do not meet WCC General Education requirements. Check pages 68 and 69 for approved courses. Courses that do not meet WCC General Education requirements are in **bold** below.*

I. English Composition (6 credits)

Composition (ENG) 111, 226

II. Social Science (8-9 Credits in more than one discipline)

Anthropology (ANT) 201, 202, 205

Economics (ECO) 110, 211, 222, 280

Geography (GEO) 101, 212

History (HST) 121, 122, 123, 150, 200, 201, 202, 210, 215, 216, 220, 230, 235, 240, 251, 260, 270

Political Science (PLS) . .112, 150, 211, 220, 250

Psychology (PSY) 100, 107, 130, 150, 200, 206, 207, 209, 210, 220, 232, 240, 251, 257, 260, 273

Sociology (SOC). 100, 155, 202, 205, 207, 225, 230, 250

III. Science and Math (8-9 Credits in more than one discipline; one course must be a laboratory course; laboratory courses are underlined.)

Astronomy (AST) 100, 111

Biology (BIO) 101, 102, 103, 104, 107, 109, 110, 111, 200, 201, 208, 212, 215, 220, 225, 227, 228, 237, **259**

Chemistry (CEM) 105, 111, 122, 140, 211, 222

Geology (GLG) 100, 103, 104, 109, 110, 114, 125, 202*, 219, 289

Mathematics (MTH) 125**, 148*, 149*, 160, 169, 176, 178, 180, 181, 182, 191, 192, 197, 293, 295

Physics (PHY) 100*, 105, 111, 122, 211, 222

**For students in elementary or early childhood education*

*** May be used for the AAS degree only*

IV. Humanities (8-9 Credits in more than one discipline)

Arabic 111

Art (ART) **101**, **102**, **108**, **111**, **112**, **114**, **120**, **122**, **125**, **127**, **129**, 130, 143, 150

Communication (COM). .101, 102, **130**, 142, 183, 200, 225

Dance (DAN) 180, **200**

Drama (DRA) 152, **170**, **208**, **209**

French (FRN) 111, 122, 213, 224

German (GRM). 111, 122

Humanities (HUM) 101, 102, 103, 145, 146, 150, 160, **170**, 175, 185

Literature (ENG) 140, 160, 170, 181, 187, 200, 210, 211, 212, 213, 214, 222, 223, 224, 240, 242, 281

Music (MUS) 140, 142, 180

Philosophy (PHL) 101, 123, 200, 205, 240, 244, 245, 250

Spanish (SPN) 111, 122, 201, 224

Articulation Agreements

Many WCC programs have articulation agreements with other colleges and universities that allow students to transfer courses to a bachelor's degree program without loss of credit. Articulation agreements for specific programs are listed with that program. Some articulation agreements apply to multiple programs or are available to students completing any associate degree at Washtenaw Community College. Schools with broad-based agreements are as follows:

Kaplan University

Most articulation agreements are designed to meet MACRAO requirements and should be followed carefully so as not to lose these benefits. If a program meets MACRAO, it will be noted with the program description. Copies of articulation agreements can be obtained in the counseling office or online at http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

Four-Year Colleges and Universities that accept MACRAO

The institutions listed below accept the MACRAO Transfer Agreement. Those marked with an * have limitations, exceptions, or provisos. Check with a counselor or an admissions representative from the four-year college/university to learn about these exceptions before selecting courses for a program of study.

The Colleges and Universities listed below accept the MACRAO transfer agreement

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

Program Index

3D Animation AAS Degree . . . 175
Accounting AAS Degree . . . 104
Accounting Certificate . . . 103
Administrative Assistant I Certificate . . . 105
Administrative Assistant II Advanced Certificate . . . 106
Administrative Assistant Technology AAS Degree . . . 107
Advanced Manufacturing Certificate . . . 82
Apprentice Completion Certificate . . . 85
Architectural Technology AAS Degree . . . 118
Auto Body Repair Certificate . . . 93
Automation Technology AAS Degree . . . 78
Automation Technology Certificate . . . 77
Automotive Mechanics Certificate . . . 95
Automotive Technician Advanced Certificate . . . 95
Baking and Pastry Certificate . . . 135
Broadcast Arts AA Degree . . . 182
Busines AA Degree . . . 181
Business Sales and Marketing Certificate . . . 100
Cabinetmaking/Millwork Systems Technology Advanced Certificate . . 125
Child Care and Education Advanced Certificate . . . 109
Child Care Professional AAS Degree . . . 110
Child Development Certificate . . . 109
Collision Repair Refinish Technician Advanced Certificate . . . 93
Collision Repair Technician Advanced Certificate . . . 94
Commercial Property Maintenance Technology Advanced Certificate 113
Computer-Aided Drafting Advanced Certificate . . . 117
Computer-Aided Drafting and Design AAS Degree . . . 119
Computer-Aided Drafting Certificate . . . 115
Computer Forensics AAS Degree . . . 151
Computer Forensics Advanced Certificate . . . 150
Computer Networking AAS Degree . . . 144
Computer Networking Academy I Advanced Certificate . . . 143
Computer Networking Academy II Post Associate Certificate . . . 144
Computer Networking Operating Systems I Advanced Certificate . . . 143
Computer Programming AAS Degree . . . 147
Computer Software Applications Certificate . . . 105
Computer Systems Security AAS Degree . . . 152
Computer Systems Technology Certificate . . . 80
Construction Management AA Degree . . . 114
Construction Supervision AAS Degree . . . 88
Construction Supervision AS Degree . . . 90
Construction Supervision Certificate . . . 87
Criminal Justice AA Degree . . . 185
Criminal Justice – Law Enforcement AAS Degree . . . 132
Culinary and Hospitality Management AAS Degree . . . 137
Culinary Arts Certificate . . . 136
Custom Auto Body Technician Advanced Certificate . . . 96
Custom Fabrication and Chassis Design Advanced Certificate . . . 96
Dental Assisting Certificate . . . 161
Digital Video Film Production Certificate . . . 176
Digital Video Production AA Degree . . . 176
E-Business Advanced Certificate . . . 140
E-Business Fundamentals Certificate . . . 100
Education, Elementary AA Degree . . . 183
Education, Secondary AA Degree . . . 183
Entrepreneurship Certificate . . . 99
Exercise Science AS Degree . . . 187
Fluid Power Certificate . . . 77
Foundations of Computer Programming Certificate . . . 145
Graphic Design AAS Degree . . . 177
Graphic Design Certificate . . . 177
Health Care Foundations Certificate . . . 163
Heating, Ventilation, Air Conditioning and Refrigeration AAS Degree . 123
Heating, Ventilation, Air Conditioning and Refrigeration – Commercial Advanced Certificate . . . 122
Heating, Ventilation, Air Conditioning and Refrigeration – Industrial Advanced Certificate . . . 122
Heating, Ventilation, Air Conditioning and Refrigeration – Residential Certificate . . . 121
Hospitality Management Certificate . . . 136
Human Resource Management Certificate . . . 100
Human Services AA Degree . . . 195
Industrial Electronics Technology Certificate . . . 80
Industrial Electronics Technology II Advanced Certificate . . . 80
Industrial Training AAS Degree . . . 89
Industrial Training AS Degree . . . 91
Information Assurance Certificate . . . 149
Interior Design AAS Degree . . . 120
Internet Professional AAS Degree . . . 141
Java Developer Advanced Certificate . . . 146
Journalism AA Degree . . . 192
Journeyman Industrial AAS Degree . . . 85
Liberal Arts Transfer AA Degree . . . 186
Linux/UNIX Systems I Certificate . . . 153
Linux/UNIX Systems II Advanced Certificate . . . 154
Machine Tool Technology Certificate . . . 81

Management Supervision AAS Degree 102
Management Supervision Advanced Certificate 101
Math and Computer Science AS Degree 188
Medical Office Assistant Certificate 106
Microcomputer System Support AAS Degree 155
Motorcycle Service Technology I Certificate 97
Motorcycle Service Technology II Advanced Certificate 97
Music Performance Certificate 157
Music Production and Engineering Certificate 158
.Net Programming Advanced Certificate 146
Network Security Advanced Certificate 150
Numerical Control Programming Certificate 82
Nursing Assistant Skills Training Certificate of Completion 164
Nursing, Registered AAS Degree 166
Nursing Transfer AAS Degree 164
Object-Oriented Programming with C++ Advanced Certificate 146
Occupational Studies AAS Degree 86
Pharmacy Technology Certificate 168
Photographic Imaging Certificate 178
Photographic Technology AAS Degree 179
Physical Therapist Assistant AAS Degree 170
Police Academy Certificate 131
Pre-Engineering/Physics AS Degree 189
Pre-Medicine AS Degree 190
Radiography AAS Degree 171
Residential Construction AS Degree 126
Residential Construction I Certificate 125
Residential Construction II Advanced Certificate 126
Residential Design Advanced Certificate 117
Residential Planning and Estimating Certificate 116
Surveying Assistant Certificate 116
Technical Writing AA Degree 193
Technical Writing AS Degree 194
Technical Writing Certificate 191
Web Application Developer Advanced Certificate 140
Web Database Developer Advanced Certificate 154
Web Graphic Design Advanced Certificate 140
Web Technology Certificate 139
Welding AAS Degree 129
Welding Certificate 127
Welding Mechanics Advanced Certificate 128

Degrees and Certificates

Washtenaw Community College offers more than 120 certificates and associate degrees that are organized into *Schools*. For those students who are uncertain about which occupation to choose, each *School* lists the certificates and degrees that prepare them for certain careers or occupations. If students know which career or occupation they want to pursue, they can choose one *School* and work toward the certificate and/or degree that leads to that career.

The career degrees and certificates are grouped into schools. The schools are listed alphabetically in this section, and each school includes a short description of the career-related degrees and certificates in that area. A chart below the description shows all career degrees and certificates that are available within the specific area of study.

Career programs are designed for students who want to learn job skills. Their goals may include a desire to begin a first job, to change career fields, or to gain advanced skills for their current jobs. These programs lead to the four types of certificates offered at WCC, or to the Associate in Applied Science Degree. Although transfer is not the focus of these programs, some have articulation agreements with four-year colleges or universities that allow students to transfer some or all of their credits toward a bachelor's degree. If a program has a formal articulation agreement, it will be noted in the program description.

Students who think they would like to earn a bachelor's degree should see the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement on page 70 of this Bulletin.

Some certificates in this section refer to the Occupational Studies program for earning an Associate in Applied Science Degree in a particular career path. If a certificate program does not already lead to an associate degree, students can earn an AAS degree with the Certificate title by completing the requirements for the Occupational Studies program described on page 86.

3M 3M
MICHIGAN
H116X
CYCLE
3M

Washtenaw Community College | SCHOOL OF ADVANCED MANUFACTURING SYSTEMS

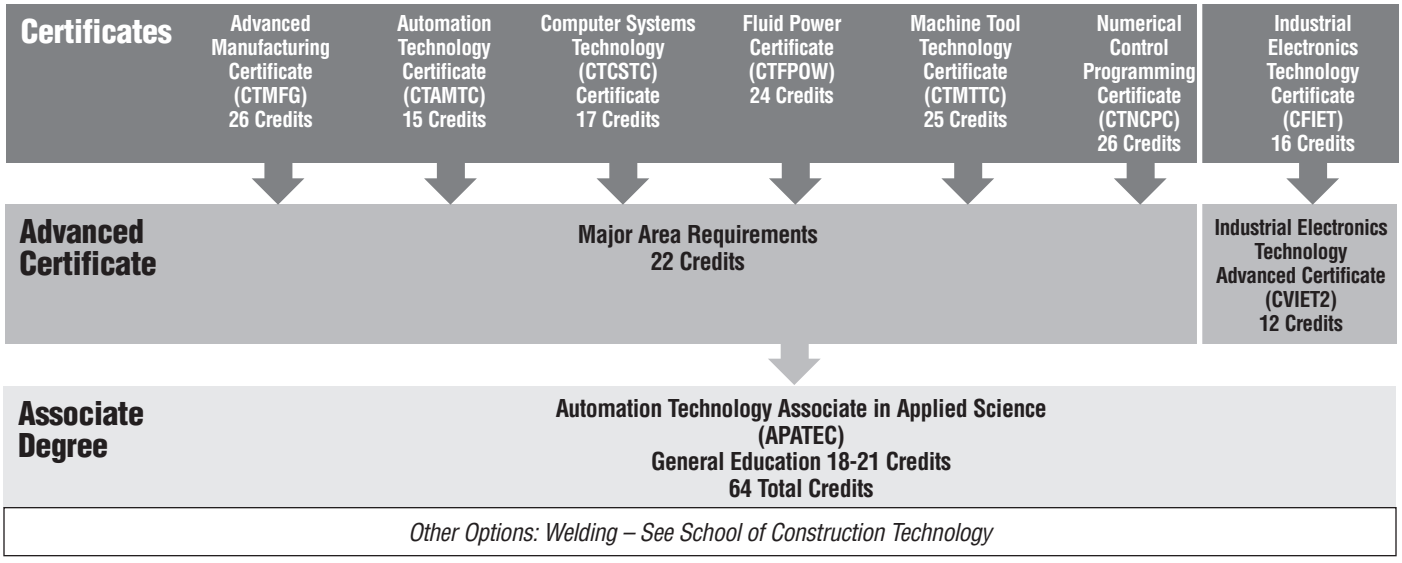
Whether your interest is in robotics, manufacturing or automation, the programs in the School of Advanced Manufacturing Systems will fit your needs. Maintain and troubleshoot the machines that make commercial goods by specializing in one or more aspects of the machining industry. Develop entry level or advanced skills in electronics, automation, industrial computing, fluid power, numerical controls or welding. Advanced specialization is also available in some of these areas.

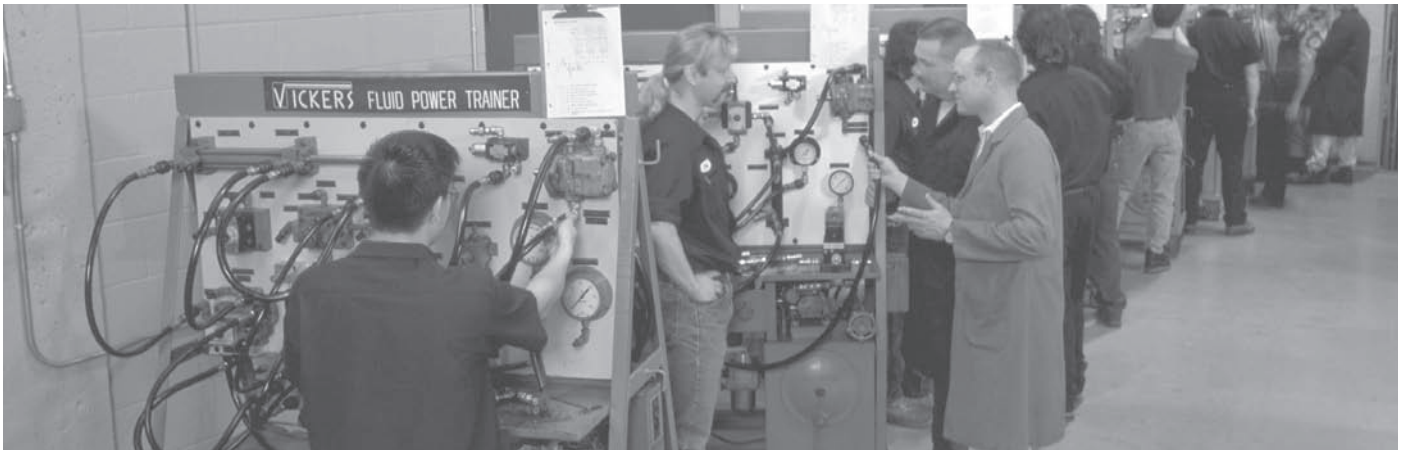
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.





AUTOMATION

Are you looking for a career as a hydraulic technician, in robotics or an introduction to manufacturing engineering? Consider the field of Automation.

Automation Technology (CTAMTC) — Certificate

Major/Area Requirements		(15 Credits)
MTH 157	Practical Geometry and Trigonometry	3
PHY 110	Applied Physics*	4
ROB 101	Robotics I - I	2
ROB 110	Robotics I - II	2
ROB 171	Introduction to FIRST Robotics	1
ROB 172	FIRST Robotics Competition	3

Minimum Credits Required for the Program: 15

Notes:
**Students may take PHY 110 or any 100-level or higher, 3 credit or more course in the following disciplines: AST, BIO, CEM, GLG, or PHY. Does not include: GLG 202, GLG 289, or PHY 100.*

Automation Technology Certificate (CTAMTC)

This program prepares students with the knowledge, skills, and attitudes needed for further advancement into science, technology, and engineering careers. Students will also be prepared to participate in the FIRST (For Inspiration and Recognition in Science and Technology) regional competition and championship events. The capstone course for this program culminates in the hands-on building of a robot used in competition.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

Fluid Power (CTFPOW) — Certificate

Core Courses		(12 credits)
AMS 103	Materials and Processes	3
BMG 241	Innovation: Process and Application	1
FLP 101	Fluid Power Fundamentals - I	2
MTT 102	Machining for Auto Applications	2
NCT 101	Introduction to Computerized Machining (CNC) - I	2
ROB 101	Robotics I - I	2

*Core courses must be taken before Major/Area Requirements.

Major/Area Requirements		(12 credits)
FLP 110	Fluid Power Fundamentals - II	2
FLP 214	Hydraulic Circuits and Controls	4
FLP 225	Fluid Power Motion Control	3
FLP 226	Pneumatics	3

Minimum Credits Required for the Program: 24

Notes:
This certificate can also lead to an associate degree in Automation Technology.

Fluid Power (CTFPOW)

This program prepares students for entry level positions as a hydraulic technician. The program gives students an understanding of hydraulic and pneumatic system design including motion control, using electro-hydraulic proportional and servo valves. Students will be prepared to take the Hydraulic Specialist or Technician Certification Examination through the Fluid Power Society.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Automation Technology (APATEC) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

Core Courses		(12 credits)
AMS 103	Materials and Processes	3
BMG 241	Innovation: Process and Application	1
FLP 101	Fluid Power Fundamentals - I	2
MTT 102	Machining for Auto Applications	2
NCT 101	Introduction to Computerized Machining (CNC) - I	2
ROB 101	Robotics I - I	2

**Core courses must be taken before Major/Area Requirements.*

Major/Area Requirements		(22 credits)
ELE 111	Electrical Fundamentals	4
ELE 224	Introduction to PLCs	4
FLP 110	Fluid Power Fundamentals - II*	0-2
NCT 110	Introduction to Computerized Machining (CNC) - II**	0-2
ROB 110	Robotics I - II	2
ROB 212	Robotics II	4
ROB 222	Robotics Simulation	2
ROB 223	Robotics III	2
ROB 224	Robotics IV	4

Minimum Option Credits Required for the Program: 12

Certificates are made up of the core courses listed above and the following option courses with the following exception: Industrial Electronics Technology (CFIET).

Automation Technology Options

Advanced Manufacturing Specialty (ADVM)		(14 credits)
AMS 104	Rapid Prototyping and Methods	3
AMS 105	Lean Manufacturing Methods	3
AMS 204	Innovations Application	4
AMS 205	Build Concept Prototype	4

Automation Technology (APATEC)

This program prepares students for entry-level positions as an automated equipment technician who assembles, installs, programs, troubleshoots, and maintains robotic and automated equipment. Students have a choice to follow any of five different specialty tracks which will prepare them for the various applications of automation. Each track features a variety of application level classes where the student performs lab-oriented practice for required skills. It is highly recommended that beginning students take at least one technical class during their first semester. See an advisor in the Industrial Technology department for assistance.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Fluid Power Specialty (FPWR) **(12 credits)**

FLP 110	Fluid Power Fundamentals - II*	2
FLP 214	Hydraulic Circuits and Controls	4
FLP 225	Fluid Power Motion Control	3
FLP 226	Pneumatics	3

Industrial Electronics Specialty (IELC) **(15 credits)**

ELE 211	Basic Electronics	4
ELE 254	PLC Applications	4
FLP 226	Pneumatics	3
MTT 111	Machine Shop Theory and Practice	4

Machine Tool Technology Specialty (MTTE) **(13 credits)**

CAD 105	Blueprint Reading and Analysis	3
MTT 111	Machine Shop Theory and Practice	4
MTT 203	Advanced Machine Tool Operations	4
NCT 110	Introduction to Computerized Machining (CNC) - II**	2

Numerical Control Specialty (NCTL) **(14 credits)**

NCT 110	Introduction to Computerized Machining (CNC) - II**	2
NCT 121	Manual Programming and NC Tool Operation	4
NCT 221	Advanced Manual Programming and NC Tool Operation	4
NCT 249	CAD/CAM CNC Programming	4

Minimum Credits Required for the Program: 64

Notes:
**Students who have successfully completed FLP 110 as part of their certificate do not need to take this course as a Major/Area requirement. Course can only be taken once for credit.*

***Students who have successfully completed NCT 110 as part of their certificate do not need to take this course as a Major/Area requirement. Course can only be taken once for credit. See an advisor to assist in scheduling and planning for each semester as some classes have limited offering.*

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

ELECTRONICS

Specialize in industrial electricity/electronics or computerized systems and programmable logic controllers. The field of Electronics is open to you.

Computer Systems Technology (CTCSTC) — Certificate

Major/Area Requirements		(17 credits)
CST 118	MS Command Line Fundamentals	2
CST 150	Computer Systems Technology I	5
CST 155	Computer Systems Technology II	5
CST 225	PC Networking	3
ELE 174 or	ELE Co-op Education I	
ELE 299	Customer Relations	2
Minimum Credits Required for the Program:		**17**

Computer Systems Technology (CTCSTC)

This program prepares students for employment as a microcomputer service technician. While preparing students to pass the Computer Technology Industry Association's (CompTIA) A+ Certification Examination, the program goes well beyond the requirements of the exam. The student will develop hands-on troubleshooting skills in solving hardware problems, working with operating systems, and relating to customers. This program also provides the foundation for Washtenaw Community College's two advanced certificates in computer networking.

Industrial Electronics Technology (CFIET) — Certificate

Major/Area Requirements		(16 credits)
ELE 111	Electrical Fundamentals	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLCs	4
ELE 254	PLC Applications	4
Minimum Credits Required for the Program:		**16**

Industrial Electronics Technology (CFIET)

This program prepares students for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. Students will develop skills in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electronic sensors, and electronic control circuits.

Program Admission Requirements: Students must have Academic Math Level 3 to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Industrial Electronics Technology II (CVIET2) — Advanced Certificate

Major/Area Requirements		(12 credits)
ELE 134	Motors and Controls	4
ELE 204	National Electrical Code	4
ELE 284	Control Logic Programming	4
Minimum Credits Required for the Program:		**12**

Industrial Electronics Technology II (CVIET2)

This program provides advanced instruction for students who wish to enhance their skills in the area of industrial electronic control. The courses in this certificate build on the foundation of electricity and electronic control introduced in the Industrial Electronics Technology certificate. Students will learn to apply and control electric motors, use structured techniques to program PLCs, and relate their understanding of electricity and controls to the requirements of the National Electrical Code. This program prepares students to take the State of Michigan Journeyman Electrician Licensing Exam.

Program Admission Requirements: Completion of the Industrial Electronics Technology certificate or equivalent.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Learn about machining operations through the production of parts using WCC's extensive machine tool laboratory.

Machine Tool Technology (CTMTTC) — Certificate

Core Courses		(12 credits)
AMS 103	Materials and Processes	3
BMG 241	Innovation: Process and Application	1
FLP 101	Fluid Power Fundamentals - I	2
MTT 102	Machining for Auto Applications	2
NCT 101	Introduction to Computerized Machining (CNC) - I	2
ROB 101	Robotics I - I	2

**Core courses must be taken before Major/Area Requirements.*

Major/Area Requirements		(13 credits)
CAD 105	Blueprint Reading and Analysis	3
MTT 111	Machine Shop Theory and Practice	4
MTT 203	Advanced Machine Tool Operations	4
NCT 110	Introduction to Computerized Machining (CNC) - II	2

Minimum Credits Required for the Program: 25

Notes:
This certificate can also lead to an associate degree in Automation Technology.

Machine Tool Technology (CTMTTC)

This program prepares students for manufacturing jobs where they will use advanced machine tool setups for the manufacture of non-production parts or prototype parts for industry. This program provides advanced skills in the use of tool room lathes, mills, precision grinders, and sophisticated measuring instruments. Students will learn machining operations through the production of parts, on modern conventional mills, lathes, and grinding equipment in WCC's extensive machine tool laboratory.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

MANUFACTURING

Develop skills needed to be a numerical control operator or utilize your imagination in the field of manufacturing. Innovation and lean manufacturing are important skills in the field of manufacturing.

Advanced Manufacturing (CTAMFG) — Certificate

Core Courses		**(12 credits)**
AMS 103	Materials and Processes	3
BMG 241	Innovation: Process and Application	1
FLP 101	Fluid Power Fundamentals - I	2
MTT 102	Machining for Auto Applications	2
NCT 101	Introduction to Computerized Machining (CNC) - I	2
ROB 101	Robotics I - I	2
Major/Area Requirements		**(14 credits)**
AMS 104	Rapid Prototyping and Methods	3
AMS 105	Lean Manufacturing Methods	3
AMS 204	Innovations Application	4
AMS 205	Build Concept Prototype	4
Minimum Credits Required for the Program:		**26**

Advanced Manufacturing (CTAMFG)

Students taking this certificate will use innovative processes to develop products and ideas. Recognition of materials and processes used to manufacture an array of product will be investigated. Students will make decisions on material and process selection for new products; keeping cost, manufacturability, application and life cycle in mind. Exploration of several tools used in the lean manufacturing arena as well as problem-solving tools will be identified. Rapid product development tools and techniques will be identified and demonstrated. Students will use the tools and techniques learned in the classes on a two-part project; the first part will use the innovation process to identify and define opportunities, in the second part, students will develop working prototypes and present their product/idea to the student body within Washtenaw Community College. This program will give students at Washtenaw Community College a good insight to tools and concepts found inside manufacturing companies. The experience gained from the two-part project will be captured in a student portfolio.

Numerical Control Programming (CTNCPC) — Certificate

Core Courses		**(12 credits)**
AMS 103	Materials and Processes	3
BMG 241	Innovation: Process and Application	1
FLP 101	Fluid Power Fundamentals - I	2
MTT 102	Machining for Auto Applications	2
NCT 101	Introduction to Computerized Machining (CNC) - I	2
ROB 101	Robotics I - I	2

**Core courses must be taken before Major/Area Requirements.*

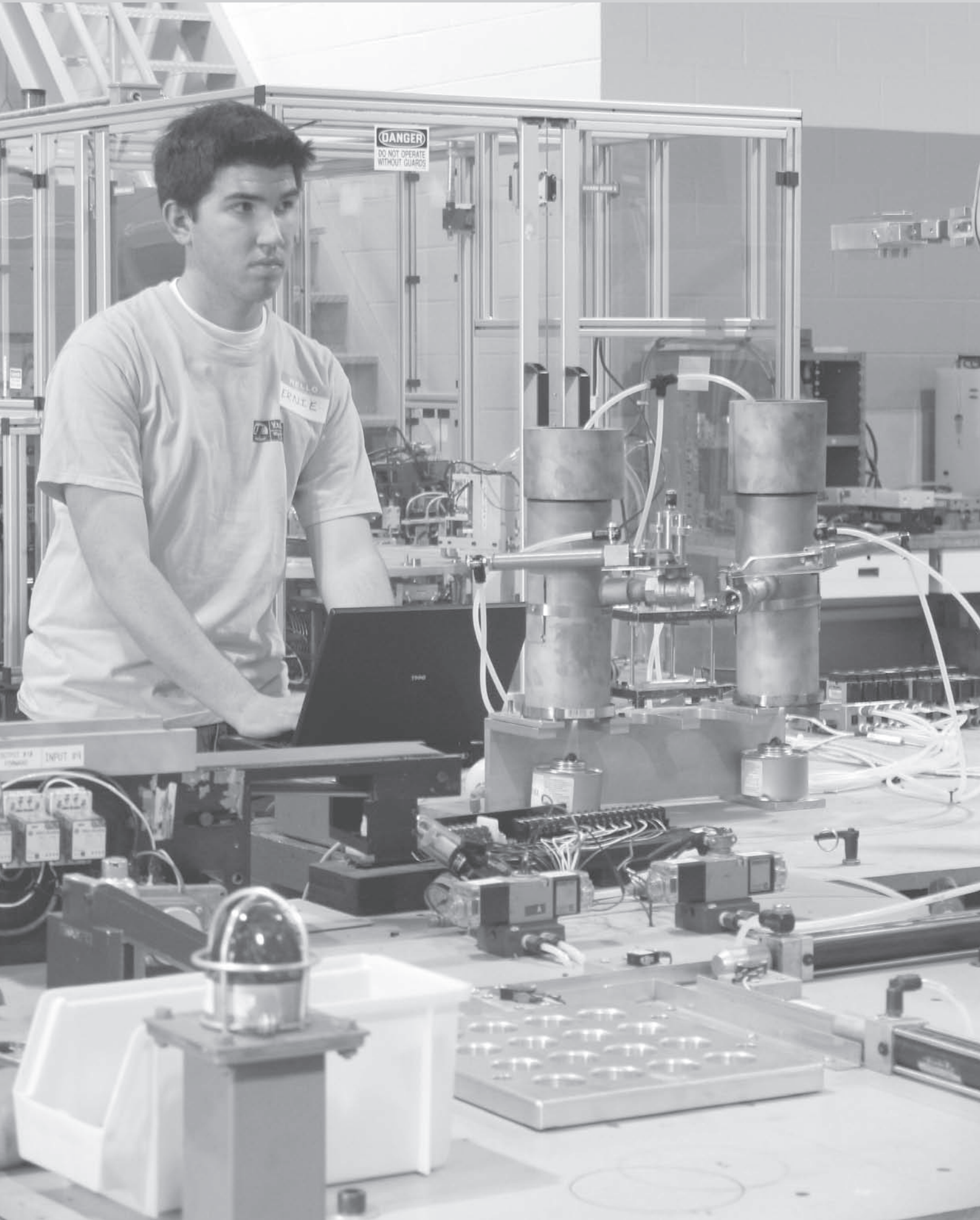
Major/Area Requirements		**(14 credits)**
NCT 110	Introduction to Computerized Machining (CNC) - II	2
NCT 121	Manual Programming and NC Tool Operation	4
NCT 221	Advanced Manual Programming and NC Tool Operation	4
NCT 249	CAD/CAM CNC Programming	4
Minimum Credits Required for the Program:		**26**

Notes:
This certificate can also lead to an associate degree in Automation Technology or Occupational Studies.

Numerical Control Programming (CTNCPC)

This program prepares students for jobs as a numerical control operator or programmer. The program gives students skills in manual and computer assisted programming languages, using CAD/CAM software to program challenging and complex 2 and 3 axes CNC machine tool operations. Students will also become proficient in the interpretation of engineering drawings, visualization of machine operations, and the setup requirements of numerical controlled machine tools.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.


DANGER
DO NOT OPERATE WITHOUT GUARDS

Washtenaw Community College | SCHOOL OF APPRENTICESHIP STUDIES

Find a trade-related associate's degree program that builds on your unique set of skills while giving you the knowledge and skills needed to move into organizational leadership.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Certificate	**Apprentice Completion Certificate (CTAC) 24 Credits**	**Most certificates can lead to an Associate in Applied Science Degree in Occupational Studies.**
Advanced Certificate		**Most advanced certificates can lead to an Associate in Applied Science Degree in Occupational Studies.**
Associate Degree	**Journeyman Industrial Associate in Applied Science (APJPIM) 60 Credits**	**Occupational Studies Associate in Applied Science (APOST) 60 Credits**

APPRENTICESHIP STUDIES

These individualized programs utilize earned certificates, apprenticeships, and trade-related credits tailored to the needs of the student. The Occupational Studies degree offers the flexibility to combine certain certificate programs with general education courses and electives to develop an individualized Associate in Applied Science degree.

Apprentice Completion (CTAC) — Certificate

Requirements	**(24 credits)**
Complete sponsored apprenticeship program in technical or trade-related coursework.	24-36
Minimum Credits Required for the Program:	**24**

Notes:

**See a program advisor to determine the courses for this certificate.*

Apprentice Completion (CTAC)

This program gives skilled tradespersons who are sponsored by qualified organizations the opportunity to apply trade-related credits from their apprenticeship programs toward a WCC Certificate. Students must be sponsored by a qualified organization to enroll in this program.

Journeyman Industrial (APJPIM) — Associate in Applied Science Degree

General Education Requirements		**(18 credits)**
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Major/Area Requirements		**(42 credits)**
Complete the Apprenticeship Completion Certificate (CTAC), or journeyman-approved coursework in a technical or trade-related area		24-36
Elective	Take additional credits as needed if total program credits are below 60.	18
Minimum Credits Required for the Program:		**60**

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Journeyman Industrial (APJPIM))

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. Students can earn an Associate in Applied Science Degree in Journeyman Industrial by completing the requirements listed.

Occupational Studies (APOST) — Associate in Applied Science Degree

General Studies Program Requirements **(60 credits)**

1. Complete the General Education Requirements for the Associate in Applied Science Degree:
   - Writing (3-4cr)
   - Speech (3 cr)
   - Math (3-4cr)
   - Nat. Sci. (3-4cr)
   - Soc. Sci. (3 cr)
   - Arts/Human. (3 cr) **18-21**

2. Complete a minimum of 20 credits in an occupational/technical area* 20

3. Complete additional coursework as free electives to bring the total to a minimum of 60 credits 22-19

Minimum Credits Required for the Program: **60**

Notes:
**If a student completes an occupational certificate program of 20 credits or more, they may request to have the certificate title substituted for "Occupational Studies" as the title of their degree program. This applies only to certificates that do not already lead to an AAS degree program.*
Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Occupational Studies (APOST)

This program allows students to earn an Associate in Applied Science degree by building on occupational/technical courses and certificates. This option can be selected if an associate degree is required or preferred as a condition for employment or advancement in a field. The program also allows students to combine coursework from several occupational areas to prepare for a job that requires multidisciplinary skills. If in completing this program, students earn an occupational certificate of 20 credits* or more that does not already lead to an associate degree program, they can request to have the certificate title substituted for "Occupational Studies" as the title of the degree program. Meet with a divisional counselor or faculty advisor for assistance in developing a program of study. A counselor can help determine career interests and educational goals, as well as provide transfer and career information.

Articulation: Eastern Michigan University, several BS degrees, Ferris State University, BS degree, National Labor College, Bachelor degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

UNITED ASSOCIATION

of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

These programs are restricted to members of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada.

Certificate	**Construction Supervision Certificate (CTCNS) 15 Credits**
Advanced Certificate	
Associate Degree	**Construction Supervision Associate in Applied Science Degree (APCNSP) 60 Credits**
	Construction Supervision Associate in Science Degree (ASCNSV) 68 Credits
	Industrial Training Associate in Applied Science Degree (APITRN) 60 Credits
	Industrial Training Associate in Science Degree (ASINDT) 65 Credits

Construction Supervision (CTCNS) — Certificate

Major/Area Requirements **(15 credits)**

UAS 111	Construction Supervision I: Motivating Employees	3
UAS 122	Construction Supervision II: Supervisory Skills	3
UAS 210	Construction Supervision III: Legal and Personnel Aspects	3
UAS 222	Construction Supervision IV: The Construction Project	3
UAS 230	Construction Supervision V: Scheduling and Project Management	3

Minimum Credits Required for the Program: **15**

Construction Supervision (CTCNS)

This Construction Supervision Certificate program enables apprentice and journey-level members of the United Association of Plumbers and Pipefitters and the International Union of Bricklayers and Allied Craftworkers to enter the job market with knowledge and skills in planning, organizing, and supervising construction projects. This certificate provides an option for those who want to attain a higher position in the construction field, and for those desiring to start their own companies.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: The program is only open to active members of the United Association of Plumbers and Pipefitters and the International Union of Bricklayers and Allied Craftworkers.

UNITED ASSOCIATION

of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

Construction Supervision (APCNSP) — Associate in Applied Science Degree

General Education Requirements (19 credits)

Writing	Elective(s)	4
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
APP 113	Math for Pipe Trades**	3
SCI 102	Applied Science**	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.

***The math and science courses are included in the specialization.*

Major/Area Requirements (15 credits)

UAS 111	Construction Supervision I: Motivating Employees	3
UAS 122	Construction Supervision II: Supervisory Skills	3
UAS 210	Construction Supervision III: Legal and Personnel Aspects	3
UAS 222	Construction Supervision IV: The Construction Project	3
UAS 230	Construction Supervision V: Scheduling and Project Management	3

Minimum Option Credits Required for the Program: 26

Complete an apprenticeship program concentration in plumbing, pipefitting, HVAC, or sprinkler fitting. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Construction Supervision (APCNSP)

This program gives apprentice and journey-level members of the United Association of Plumbers and Pipefitting and the International Union of Bricklayers and Allied Craftworkers the opportunity to apply their apprenticeship training and trade-related experience toward an associate's degree in Construction Supervision. In addition to the courses in Construction Supervision, students will complete general education courses and receive non-traditional credit for their work experience and apprenticeship.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: The program is only open to active members of the United Association of Plumbers and Pipefitters and the International Union of Bricklayers and Allied Craftworkers.

Construction Supervision Options

HVAC	Specialty (HVTC)	(26 credits)
UAE 140	Introduction to HVACR Service	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Pipefitter Specialty (PIPE)		(26 credits)
UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM)		(26 credits)
UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Sprinkler Fitter Specialty (SPRF)		(26 credits)
UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Minimum Credits Required for the Program: 60

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Industrial Training (APITRN) — Associate in Applied Science Degree

General Education Requirements (19 credits)

Writing	Elective(s)	4
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
APP 113	Math for Pipe Trades**	3
SCI 102	Applied Science**	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*

***The math and science courses are included in the specialization.*

Major/Area Requirements (15 credits)

Students must complete 12-15 additional credits from a combination of required teaching methods courses and technical update courses (UAT). 12-15

Complete electives (0-3 credits) to meet a minimum of 60 credits. 3

Minimum Option Credits Required for the Program: 26

Complete a specialization in plumbing, pipefitting, HVAC, or sprinkler fitting. Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.

Industrial Training Options

HVAC	Specialty (HVTC) (26 credits)	
UAE 140	Introduction to HVACR Service	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Pipefitter Specialty (PIPE) (26 credits)		
UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM) (26 credits)		
UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Sprinkler Fitter Specialty (SPRF) (26 credits)		
UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Minimum Credits Required for the Program: 60

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Industrial Training (APITRN)

This program gives indentured apprentices and journeymen of the United Association of Plumbers and Pipefitters the opportunity to apply their work as certified apprentice instructors toward an associate's degree in Industrial Training. In addition to credits awarded for completion of five summer apprentice training sessions, students will complete the general education courses, and receive non-traditional credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinkler fitting.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Open only to United Association of Plumbers Apprentices/Journeymen

UNITED ASSOCIATION

of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

Construction Supervision (ASCNSV) — Associate in Science Degree

General Education Requirements (27 credits)

Writing	Elective(s)	6-7
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
Math	MTH 169 or higher	3-4
Nat. Sci.	Must contain a lab	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*

Major/Area Requirements (15 credits)

UAS 111	Construction Supervision I: Motivating Employees	3
UAS 122	Construction Supervision II: Supervisory Skills	3
UAS 210	Construction Supervision III: Legal and Personnel Aspects	3
UAS 222	Construction Supervision IV: The Construction Project	3
UAS 230	Construction Supervision V: Scheduling and Project Management	3

Minimum Option Credits Required for the Program: 26

Complete an apprenticeship program concentration in plumbing, pipefitting, HVAC, or sprinkler fitting. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Construction Supervision (ASCNSV)

This program gives apprentice and journey-level members of the United Association of Plumbers and Pipefitters and the International Union of Bricklayers and Allied Craftworkers the opportunity to apply their apprenticeship training and trade-related experience toward an associate's degree in Construction Supervision. In addition to the courses in Construction Supervision, students will complete general education courses and receive non-traditional credit for their work experience and apprenticeship.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees, International Masonry Institute, Certified Masonry Construction program, National Labor College, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: The program is only open to active members of the United Association of Plumbers and Pipefitters and the International Union of Bricklayers and Allied Craftworkers.

Construction Supervision Options

HVAC Specialty (HVTC) (26 credits)

UAE 140	Introduction to HVACR Service	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Pipefitter Specialty (PIPE) (26 credits)

UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM) (26 credits)

UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Sprinkler Fitter Specialty (SPRF) (26 credits)

UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Minimum Credits Required for the Program: 68

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Industrial Training (ASINDT) — Associate in Science Degree

General Education Requirements (27 credits)

Writing	Elective(s)	6-7
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
Math	MTH 169 or higher	3-4
Nat. Sci.	Must contain a lab	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*

Major/Area Requirements (12 credits)

Students must complete 12-15 additional credits from a combination of required teaching methods courses and technical update courses (UAT). 12-15

Minimum Option Credits Required for the Program: 26

Complete a specialization in plumbing, pipefitting, HVAC, or sprinkler fitting. Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.

Industrial Training Options

HVAC Specialty (HVTC) (26 credits)

UAE 140	Introduction to HVACR Service	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Pipefitter Specialty (PIPE) (26 credits)

UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM) (26 credits)

UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Sprinkler Fitter Specialty (SPRF) (26 credits)

UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Minimum Credits Required for the Program: 65

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Industrial Training (ASINDT)

This program gives indentured apprentices and journeymen of the United Association of Plumbers and Pipefitters the opportunity to apply their work as certified apprentice instructors toward an associate in science degree in Industrial Training. Students will complete the general education courses, five summer apprentice training sessions, and receive non-traditional credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinkler fitting.

Articulation: Eastern Michigan University, several BS degrees, Ferris State University, Bachelor degree, National Labor College, Bachelor degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Open only to United Association of Plumbers Apprentices/Journeymen

Washtenaw Community College | SCHOOL OF AUTOMOTIVE AND MOTORCYCLE TECHNOLOGY

If you are looking for the best technical training in the automotive or motorcycle fields, WCC's School of Automotive and Motorcycle Technology is the place for you. Whether your focus is finding employment as a technician, learning about performance, or creating a custom look, our intermediate and advanced certificate programs as well as associate's degrees will enhance your personal and professional qualifications. These programs offer the perfect blend of classroom and hands-on education not available in any other educational setting.

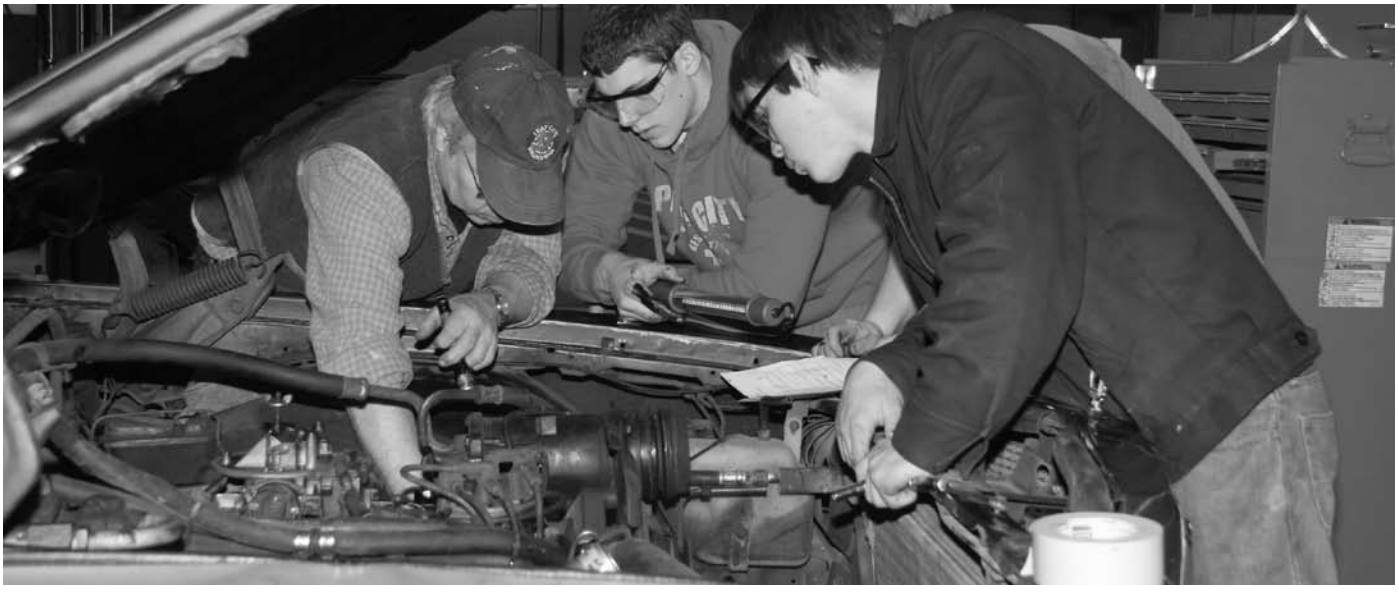
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

Students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates	Automotive Mechanics Certificate (CFAM) 22 Credits	Motorcycle Service Technology I (CTMSTI) 20 Credits	Auto Body Repair Certificate (CTAUBR) 32 Credits			
Advanced Certificates	Automotive Technician Advanced Certificate (CVAUTC) 16 Credits	Motorcycle Service Technology II (CVMST2) 10 Cedits	Custom Auto Body Technician (CVCABT) 18 Credits	Custom Fabrication and Chassis Design (CVCFCD) 18 Credits	Collision Repair Technician Advanced Certificate (CVCLRT) 18 Credits	Collision Repair Refinish Technician (CVCRRT) 18 Credits
Associate Degrees			Occupational Studies Associate in Applied Science (APOST) 60 Credits			

Other Options: Welding – See School of Construction Technology



AUTO BODY REPAIR

These certificates prepare the student for various positions in the auto body repair industry.

Auto Body Repair (CTAUBR) — Certificate

Major/Area Requirements		(32 credits)
ABR 111	Introduction to Auto Body Repair	4
ABR 112	Introduction to Automotive Refinishing	4
ABR 113	Estimating and Shop Operations	4
ABR 114	Applied Auto Body Welding	2
ABR 116	The Evolution of the Automobile	2
ABR 119	The Art of Metal Shaping	2
ABR 123	Technical Auto Body Repair	4
ABR 124	Technical Automotive Refinishing	4
ABR 135	Collision-Related Mechanical and Electrical Repairs	4
WAF 105	Welding for Art and Engineering	2
Minimum Credits Required for the Program:		**32**

Auto Body Repair (CTAUBR)

This program prepares students for entry-level jobs where they will repair and refinish damaged automobiles under the supervision of an auto body technician. Students will receive core skills in the areas of automotive welding, machining, and mechanics. Training is done using manuals for estimating job costs.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Collision Repair Refinish Technician (CVCRRT) — Advanced Certificate

Major/Area Requirements		(18 credits)
CRT 200	Refinish Technician I	4
CRT 220	Refinish Technician II	2
CRT 240	Refinish Technician III	4
CRT 260	Refinish Technician IV	4
CRT 280	Refinish Technician V	4
Minimum Credits Required for the Program:		**18**

Collision Repair Refinish Technician (CVCRRT)

This advanced certificate was developed for the individual who would like to focus on a career in the collision refinishing industry. Using modules and carefully selected vehicles, students develop and apply advanced painting skills while refinishing vehicles to pre-accident condition. Areas of study include single stage, tri-stage, and base-coat/clear-coat paint systems. Additional topics such as overall paint jobs, color theory, and the tinting of factory colors to obtain a blended match will be covered. Current NATEF, I-Car, and ASE standards are closely followed to ensure that students are ready for employment in today's competitive work place.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: In order to enroll in this program, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

Collision Repair Technician (CVCLRT) — Advanced Certificate

Major/Area Requirements		(18 credits)
CRT 201	Collision Technician I	4
CRT 221	Collision Technician II	2
CRT 241	Collision Technician III	4
CRT 261	Collision Technician IV	4
WAF 289	MIG Welding	4
Minimum Credits Required for the Program:		**18**

Collision Repair Technician (CVCLRT)

This is an advanced certificate for individuals seeking a career in the collision repair industry. Through the repair of selected vehicles, students will develop and apply skills such as advanced welding techniques, damage analysis, structural and non-structural repair, panel replacement and collision-related mechanical and electrical repair. Satisfactory completion of this certificate prepares students for employment in today's fast paced collision repair industry.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: In order to enroll in this program, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

AUTOMOTIVE SERVICES

The automotive certificates prepare the student for work as an automotive mechanic or automotive technician, diagnosing and repairing malfunctions in automobile systems.

Automotive Mechanics (CFAM) — Certificate

Core Courses		(10 credits)
ABR 116	The Evolution of the Automobile	2
ASV 141	Automotive Mechanics I	4
MTT 102	Machining for Auto Applications	2
WAF 105	Welding for Art and Engineering	2

**Core courses must be taken before Major/Area Requirements.*

Major/Area Requirements		(12 credits)
ASV 142	Automotive Mechanics II	4
ASV 143	Automotive Mechanics III	4
ASV 144	Automotive Mechanics IV	4

Minimum Credits Required for the Program: 22

Automotive Mechanics (CFAM)

This program prepares students for entry-level jobs as an auto mechanic, where they will work under the supervision of an experienced automotive technician. Students will receive core skills in the areas of automotive welding, machining, and auto body repair. Students also develop entry-level diagnosis and repair abilities in the areas of brakes, suspensions, engines, electrical systems, performance, and drive trains.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Automotive Technician (CVAUTC) — Advanced Certificate

Major/Area Requirements		(16 credits)
Select 16 credits from the following:		
ASV 174	ASV Co-op Education I*	1-3
ASV 241	Engine Repair	2
ASV 242	Automatic Transmissions	2
ASV 243	Manual Drive Trains and Axles	2
ASV 244	Suspension and Steering	2
ASV 245	Brakes	2
ASV 246	Electrical Circuits	2
ASV 247	Heating and Air Conditioning	2
ASV 248	Engine Performance	2
ASV 249	Diagnosis and Repair*	4

Minimum Credits Required for the Program: 16

Notes:
**This course is optional.*

Automotive Technician (CVAUTC)

This program prepares students for jobs as a certified automotive mechanic. Students will diagnose and repair malfunctions in automobile engines, transmissions, power trains, suspension systems, brake systems, electrical systems, air conditioning systems, engine management systems, and computer systems. The courses also prepares students for the State of Michigand national mechanic certification exams. Students can earn an AAS degree by completing the requirements for the Occupational Studies Program (APOST). See an advisor for assistance.

Program Admission Requirements: Completion of the Automotive Mechanics Certificate Program (CFAM).

CUSTOM CARS & CONCEPTS

Develop advanced skills in the customization of the auto body through the completion of these advanced certificates.

Custom Auto Body Technician (CVCABT) — Advanced Certificate

Major/Area Requirements		(18 credits)
CCC 200	Custom Auto Body Technician I	4
CCC 220	Custom Auto Body Technician II	4
CCC 240	Custom Auto Body Technician III	4
CCC 260	Custom Auto Body Technician IV	6
Minimum Credits Required for the Program:		**18**

Custom Auto Body Technician (CVCABT)

The Custom Auto Body Technician advanced certificate focuses on advanced body and paint techniques used to customize automobiles and turn them into "rolling showpieces." Working in teams, students will build, complete and show a project vehicle. Students will learn advanced sheet metal fabrication techniques and how to use the specialty tools needed to accomplish these tasks. Other topics such as candies, pearls, tri-stage paint jobs, and the application of custom graphics will be discussed. Upon acquiring this advanced certificate, employment possibilities include specialty shop technician, custom paint technician, and collision repair technician.

Program Admission Requirements: In order to enroll in this program, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

Custom Fabrication and Chassis Design (CVCFCD) — Advanced Certificate

Major/Area Requirements		(18 credits)
CCC 201	Custom Fabrication and Chassis Design I	4
CCC 221	Custom Fabrication and Chassis Design II	4
CCC 241	Custom Fabrication and Chassis Design III	6
WAF 215	Welding V Advanced GTAW and GMAW	4
Minimum Credits Required for the Program:		**18**

Custom Fabrication and Chassis Design (CVCFCD)

The Custom Fabrication and Chassis Design advanced certificate expands on knowledge acquired in the Auto Body Repair program. Students working in a team environment will design, build, complete, and show a project vehicle. Students will learn techniques used in the construction of a custom automotive chassis. Areas of study will include various types of building materials and their uses, measurement, pattern development, mechanical drawing, fastener selection, MIG and TIG welding, and frame design. Modifications such as boxing, c-notching, motor mount design, and cross member construction will be explored. Additional information on suspension types, their design, and their construction will also be covered. Employment opportunities for students who acquire this certificate may include welder, metal fabricator, specialty shop technician, and race team technician.

Program Admission Requirements: In order to enroll in this program, students must complete the Auto Body Repair (CTAUBR) certificate with a grade of "B" or better in each course.

Prepare for a career as a motorcycle mechanic or build upon skills already developed.

Motorcycle Service Technology I (CTMST1) — Certificate

Major/Area Requirements		(20 credits)
MST 110	Motorcycle Service Technology I	4
MST 120	Motorcycle Service Technology II	4
MST 130	Motorcycle Service Technology III	4
MST 140	Motorcycle Service Technology IV	4
MTT 102	Machining for Auto Applications	2
WAF 105	Welding for Art and Engineering	2
Minimum Credits Required for the Program:		**20**

Motorcycle Service Technology I (CTMST1)

The purpose of the Motorcycle Service Technology I Program is to provide the student with fundamental certification as a motorcycle technician. The student will receive skill training in service department operations, vehicle set-up, mileage-based maintenance, and damage repair estimating. Areas of instruction include; troubleshooting, diagnosing, servicing, and the repair of primary and final drive systems, transmissions, brakes, suspensions, electrical, and induction systems. The program will provide the skills for the student to test for the State of Michigan Motorcycle Mechanics License.

Motorcycle Service Technology II (CVMST2) — Advanced Certificate

Major/Area Requirements		(10 credits)
MST 210	Performance Engine Technology	4
MST 220	Dynamometer Operations	4
WAF 103	Heli-ARC Welding	2
Minimum Credits Required for the Program:		**10**

Motorcycle Service Technology II (CVMST2)

The purpose of the Motorcycle Service Technology II Advanced Certificate program is to improve the student's skills as a motorcycle technician. Emphasis is placed on engine performance technology, dynamometer operations, and welding.

Program Admission Requirements: Completion of the Motorcycle Service Technology I Certificate.

Washtenaw Community College | SCHOOL OF BUSINESS AND ENTREPRENEURIAL STUDIES

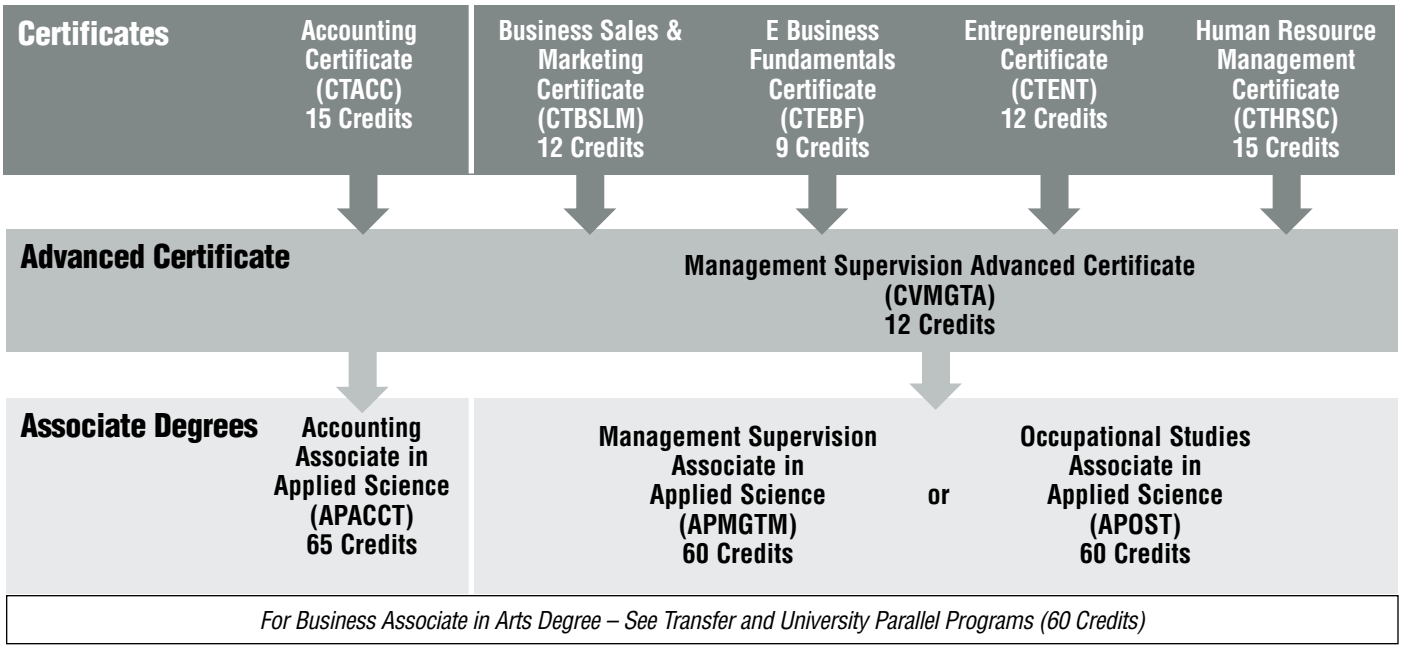
Learn the fundamentals you will need to become a business leader or entrepreneur. These programs help you develop entry-level skills in various aspects of business. Whether your goal is to make your place in an existing industry or branch out on your own, these programs can provide the foundation for success.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.



For Business Associate in Arts Degree – See Transfer and University Parallel Programs (60 Credits)

ENTREPRENEURSHIP

Learn how to recognize market opportunities and plan a small business through completion of this certificate program.

Entrepreneurship (CTENT) — Certificate

Major/Area Requirements		(12 credits)
BMG 101	The Business of Your Career	3
BMG 102	The Student Enterprise Zone	3
BMG 109	Entrepreneurship I - The Essentials	3
BMG 201	Entrepreneurship II - Market Planning	3
Minimum Credits Required for the Program:		**12**

Entrepreneurship (CTENT)

This certificate provides students with the business knowledge, skills and attitudes that are needed to start and operate a small business. Students learn to recognize market opportunities within an industry of their choice, plan a business initiative to develop that opportunity, and evaluate its profit potential. This certificate is appropriate for students who wish to start their own business or improve their chances for finding employment at a small business enterprise.

Program Admission Requirements: Basic computing skills including use of the Internet, CIS 099 or equivalent experience.

BUSINESS

Choose one or more areas in the field of business as you prepare for your future.

Business Sales & Marketing (CTBSLM) — Certificate

Major/Area Requirements		(12 credits)
BMG 140	Introduction to Business*	3
BMG 160	Principles of Sales	3
BMG 207	Business Communication	3
BMG 250	Principles of Marketing	3
Minimum Credits Required for the Program:		**12**

Notes:
**BMG 140 should be taken before other program courses. For students with business experience, credit for BMG 140 may be awarded through credit for prior learning experience. Talk to your faculty advisor for more information.*

Business Sales & Marketing (CTBSLM)

This program prepares students for immediate employment in sales jobs that require skills in sales presentation, negotiation, customer service, display preparation, inventory analysis, and basic market research. The courses in this program may be applied toward an Associate in Applied Science degree in Management Supervision.

Program Admission Requirements: Competency in keyboarding is necessary for success in this program. If students need to improve keyboarding skills, take BOS 101A before beginning the program.

E-Business Fundamentals (CTEBF) — Certificate

Major/Area Requirements		(9 credits)
BMG 155	Business on the Internet	3
BMG 207	Business Communication	3
INP 140	Building a Web Site	3
Minimum Credits Required for the Program:		**9**

Notes:
The recommended sequence for taking these classes is INP 140, BMG 207, BMG 155. Courses may be taken concurrently.

E-Business Fundamentals (CTEBF)

This certificate is designed to meet the needs of students seeking to understand how to create a Web site that is used to advertise and/or sell a limited product line or service. Course work is suitable as an introduction to e-business and Web technology but requires that the student be able to use the Internet (e-mail and browsing) in their daily lives.

Program Admission Requirements: Program admission is based on passing scores on all college placement tests; and passing score on the Internet placement examination or CIS 099 with a grade of "C" or better.

Human Resource Management (CTHRSC) — Certificate

Major/Area Requirements		(15 credits)
BMG 150	Labor-Management Relations	3
BMG 200	Human Relations in Business	3
BMG 240	Human Resources Management	3
BMG 279	Performance Management	3
CIS 100 or	Introduction to Computers and Software Applications	
CIS 110	Introduction to Computer Information Systems	3
Minimum Credits Required for the Program:		**15**

Human Resource Management (CTHRSC)

This program prepares students for entry-level jobs as a human resource assistant or specialist where they will be assisting in activities that range from recruiting, interviewing and hiring job candidates to evaluating jobs, negotiating contracts, and ensuring company compliance with equal opportunity regulations. This program also provides students with basic management skills that will improve their ability to manage people.

Management Supervision (CVMGTA) — Advanced Certificate

Major/Area Requirements		(12 credits)
BMG 230	Management Skills	3
BMG 273	Managing Operations	3
BMG 279	Performance Management	3
BMG 291	Project Management	3
Minimum Credits Required for the Program:		**12**

Management Supervision (CVMGTA)

This advanced certificate offers students in any occupation or trade an opportunity to acquire skills to supervise an operation by learning and applying basic management principles through case studies and exercises. Upon completing this program, students will be able to use various tools to manage an operation which includes developing goals, organizing work activities, promoting desired employee performance, and monitoring productivity with a customer focus. Emphasis will be placed on developing skills that will involve both a critical and creative approach to management problem-solving activities. The advanced certificate may also be applied toward a WCC Associate in Applied Science Degree.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Successful completion of a career certificate or degree program or equivalent work experience. CIS 100 with a "C-" or better or equivalent skills.

Management Supervision (APMGTM) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

Major/Area Requirements		(42 credits)
	Complete a certificate or degree in any occupational/technical area plus additional related credits to equal a minimum of 15 credit hours.	15
	Complete the Management Supervision Advanced Certificate.	
BMG 230	Management Skills	3
BMG 273	Managing Operations	3
BMG 279	Performance Management	3
BMG 291	Project Management	3
Elective	Complete an additional 9 credit hours of business courses in the BMG discipline.	9
Elective	Complete an additional 6 credit hours in the disciplines of ACC, BMG, CIS, and/or INP.	6

Minimum Credits Required for the Program: 60

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Management Supervision (APMGTM)

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. Students can earn an Associate in Applied Science Degree in Management Supervision, by completing the requirements listed below. See an advisor to develop a plan and select appropriate courses for this program.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

ACCOUNTING

Accounting and tax services, CPA firms and small businesses need employees with accounting skills. These programs can provide the skills needed for entry-level positions.

Accounting (CTACC) — Certificate

Major/Area Requirements		(15 credits)
ACC 111	Principles of Accounting I	3
ACC 131	Accounting Information Systems	3
BOS 183	Spreadsheet Software Applications	3
CIS 110	Introduction to Computer Information Systems	3
TAX 101	Income Taxes for Individuals	3
Minimum Credits Required for the Program:		**15**

Accounting (CTACC)

This program prepares students for entry-level positions with accounting and tax services, CPA firms, and small businesses where they will provide accounting skills, computer skills, and office support. It also gives students credit that can be applied toward the Associate's Degree in Accounting.

Program Admission Requirements: One year of high school algebra or MTH 125 with a "C" or better; or Academic Math Level 3 or higher.

Accounting (APACCT) — Associate in Applied Science Degree

General Education Requirements		(20 credits)
ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 181	Mathematical Analysis I	4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)*	3
Major/Area Requirements		**(39 credits)**
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
ACC 131	Accounting Information Systems	3
ACC 213	Intermediate Accounting	3
ACC 225	Managerial Cost Accounting	3
BMG 111	Business Law I	3
BMG 140	Introduction to Business	3
BMG 207	Business Communication	3
BMG 220	Principles of Finance	3
BMG 265	Business Statistics	3
BOS 183	Spreadsheet Software Applications	3
CIS 110	Introduction to Computer Information Systems	3
TAX 101	Income Taxes for Individuals	3
Required Support Courses		**(6 credits)**
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
Minimum Credits Required for the Program:		**65**

Notes:

**See the EMU Diverse World Requirement list. University of Michigan - Ann Arbor Business School does not accept business or accounting courses from community colleges. If you wish to transfer into an accounting major at UM, please see a counselor.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Accounting (APACCT)

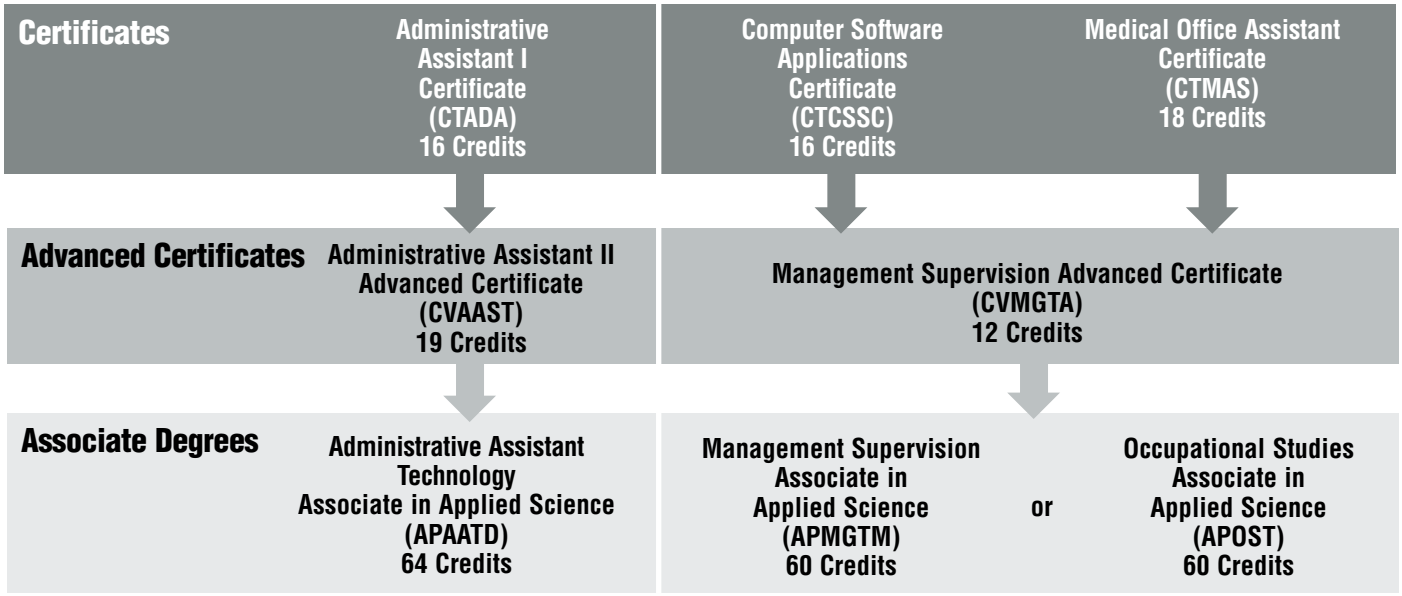
This program prepares students for jobs with duties assigned to a beginning accountant such as verifying additions, checking audits, postings, and vouchers, analyzing accounts, and preparing financial statements. Many of the courses transfer to four-year colleges, including programs at Eastern Michigan University, Madonna University, and Walsh College. If the primary goal is to transfer into a bachelor's of business administration program in accounting, consider the Business Transfer program.

Articulation: Cleary University, BBA or BS degree-Davenport University, Bachelor degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Two years of high school algebra with a grade of "C" or better or Academic Math Level 4 or higher to enroll in MTH 181.

BUSINESS OFFICE SYSTEMS

Whether you are just starting out in an office or advancing to a high-level administrative or executive assistant position, these programs can help you achieve your goals.



Administrative Assistant I (CTADA) — Certificate

Major/Area Requirements		(16 credits)
BOS 101C	Advanced Keyboarding	1
BOS 107	Office Administration I	4
BOS 157	Word Processing and Document Formatting I	3
BOS 183	Spreadsheet Software Applications	3
BOS 206	Scheduling and Internet Office Applications	2
BOS 257	Word Processing and Document Formatting II	3
Minimum Credits Required for the Program:		**16**

Administrative Assistant I (CTADA)

This program prepares students for immediate employment in entry-level information processing, data entry, receptionist, and general office positions where skills in keyboarding and document formatting using computers, record management, and Internet communication skills are important. It also gives students credits that can be used toward an associate degree in Administrative Assistant Technology.

Computer Software Applications (CTCSSC) — Certificate

Major/Area Requirements		(16 credits)
BOS 157	Word Processing and Document Formatting I	3
BOS 182	Database Software Applications	3
BOS 183	Spreadsheet Software Applications	3
BOS 206	Scheduling and Internet Office Applications	2
BOS 207	Presentation Software Applications	2
BOS 208 or	Desktop Publishing for the Office	
BOS 257	Word Processing and Document Formatting II	3
Minimum Credits Required for the Program:		**16**

Computer Software Applications (CTCSSC)

This program provides computer skills training to an expert level in six typical office software applications, using the Microsoft Office Suite as well as a Web browser. These courses are primarily intended for students preparing for careers in the administrative office support area. The courses also give students skills that can be applied toward careers in computer application support and records management. It is recommended that students completing the software applications program be able to key at least 40 words per minute.

Medical Office Assistant (CTMAS) — Certificate

Major/Area Requirements		(18 credits)
BOS 101C	Advanced Keyboarding	1
BOS 157	Word Processing and Document Formatting I	3
BOS 210	Medical Transcription	3
BOS 223	Medical Office Procedures	3
BOS 224	Medical Office Insurance and Billing	4
HSC 101	Healthcare Terminology	1
HSC 115	Medical Office and Laboratory Procedures	3
Minimum Credits Required for the Program:		**18**

Medical Office Assistant (CTMAS)

This program prepares the student for entry-level positions in doctors' offices, clinics, hospitals, pharmaceutical or insurance companies, or public health facilities where health information is prepared, analyzed, and retrieved. The student learns to perform receptionist duties, prepare charts and reports, schedule and bill patients, code and submit bills to insurance companies, and perform some patient-care duties such as sterilizing instruments and taking vital signs. This certificate is not an AAMA certification preparation program.

Administrative Assistant II (CVAAST) — Advanced Certificate

Major/Area Requirements		(19 credits)
BOS 101C	Advanced Keyboarding	1
BOS 130	Office Financial Applications	3
BOS 182	Database Software Applications	3
BOS 207	Presentation Software Applications	2
BOS 208	Desktop Publishing for the Office	3
BOS 225	Integrated Office Applications	3
BOS 250	Office Administration II	4
Minimum Credits Required for the Program:		**19**

Administrative Assistant II (CVAAST)

This program provides comprehensive preparation for individuals who are currently employed as office assistants and who wish to advance their careers in office administration by upgrading their skills. Providing the knowledge and skills necessary for employment as a high-level administrative assistant or executive assistant in the public or private sector, this advanced certificate builds on skills developed in the Administrative Assistant I certificate program. In the Administrative Assistant II program, emphasis is placed on the expanding duties of an administrative assistant, and on the necessity of acquiring an in-depth knowledge of integrated software applications for the office. While mastering the technical knowledge essential for the office professional, students will also learn office management; and organizational principles. Additionally, the program provides opportunities for skill enhancement in information processing, basic financial management, electronic presentations, and office administration. Upon completion of this program, the student will receive an advanced certificate as an administrative assistant.

Administrative Assistant Technology (APAATD) — Associate in Applied Science Degree

General Education Requirements		(19 credits)
ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 125	Everyday College Math	3
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**BIO 102 or BIO 109 is required for the Medical Administrative Assistant Option.*

Major/Area Requirements		(24 credits)
BOS 101C	Advanced Keyboarding	1
BOS 107	Office Administration I	4
BOS 157	Word Processing and Document Formatting I	3
BOS 182	Database Software Applications	3
BOS 183	Spreadsheet Software Applications	3
BOS 206	Scheduling and Internet Office Applications	2
BOS 207	Presentation Software Applications	2
BOS 225	Integrated Office Applications	3
BOS 257	Word Processing and Document Formatting II	3

Required Support Courses		(8 credits)
CIS 100	Introduction to Computers and Software Applications	3
CIS 117	Windows Operating System	2
COM 102 or	Interpersonal Communication	
ENG 226	Composition II	3

Minimum Option Credits Required for the Program: 13

Complete the required courses in either the Administrative Assistant or Medical Administrative Assistant Option below. Check course descriptions for prerequisites.

Administrative Assistant Technology Options

Administrative Assistant Option (ADMA)		(13 credits)
ACC 111	Principles of Accounting I	3
BOS 130	Office Financial Applications	3
BOS 208	Desktop Publishing for the Office	3
BOS 250	Office Administration II	4

Medical Administrative Assistant Option (MEDA)		(15 credits)
BOS 210	Medical Transcription	3
BOS 223	Medical Office Procedures	3
BOS 224	Medical Office Insurance and Billing	4
HSC 101	Healthcare Terminology	1
HSC 115	Medical Office and Laboratory Procedures	3
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1

Minimum Credits Required for the Program: 64

Notes: Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Administrative Assistant Technology (APAATD)

This program prepares students for higher-level support positions in office settings where increased responsibilities require technical skills in desktop publishing, presentation software, accounting, and database software. Students will also gain broader skills through completion of the general education courses required for an associate's degree.

Washtenaw Community College | SCHOOL FOR CHILD CARE PROFESSIONALS

If you yearn to be involved in nurturing the next generation of young people, the School of Child Care Professionals is the place to begin. Gain the knowledge and skills required for state licensing and national childcare credentials while enjoying the personal experience of working directly with children.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing the certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates	**Child Development Certificate (CTCDA) 11 Credits**
Advanced Certificate	**Child Care & Education Advanced Certificate (CVCCE) 25 Credits**
Associate Degree	**Child Care Professional Associate in Applied Science (APCCP) 61 Credits**

CHILD CARE PROFESSIONALS

Whether you are looking to care for children in a home-based center or a professional or school-based setting, these programs can prepare you for an entry-level position as a childcare professional.

Child Development (CTCDA) — Certificate

Major/Area Requirements		(11 credits)
CCP 122	Child Development Credentialing I	4
CCP 123	Child Development Credentialing II	4
CCP 132	Child Development Practicum I	1-2
CCP 133	Child Development Practicum II	1-2
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
	Optional (not required): CCP 124 and/or CCP 134*	
Minimum Credits Required for the Program:		**11**

Notes:
**These additional courses are not required for the WCC Certificate, but may be taken to prepare for the final assessment test administered by the National Council and to complete the final observation assessment for the Child Development Associate credential.*

Child Development (CTCDA)

This Child Development Certificate is the first level in a three-tier training program. This program prepares students for the assessment exam required for the Child Development Associate (CDA) credential. It also prepares students for employment in child care centers or in family home daycare settings working with infants and toddlers, or preschoolers. Skills from the 13 functional areas required by the National Council for Early Childhood Professional Recognition are emphasized.

Program Admission Requirements: Students must be at least 18 years of age and have a high school diploma or equivalent.

Child Care and Education (CVCCE) — Advanced Certificate

Major/Area Requirements		(25 credits)
CCP 101	Child Development	3
CCP 113	Health, Safety and Nutrition for Child Care	3
CCP 160	Foundations of Child Care and Early Education	3
CCP 209	Curriculum for Young Children	3
CCP 210	Child Guidance and Classroom Management	3
CIS 100	Introduction to Computers and Software Applications	3
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
Minimum Credits Required for the Program:		**25**

Child Care and Education (CVCCE)

This certificate provides advanced training for child care professionals, and for paraprofessionals in school settings. It is the second level of a three-tier training program for adults who work with children under age 12. It is intended for students who are employed in a program that serves children under age 12 in a group setting.

Program Admission Requirements: Students must have one of the following to enter this program: completion of a two-year vocational child care certificate; a CDA certificate; 12 credits in child care or elementary education; or concurrent enrollment in the Child Development Certificate program (CTCDA). Completion of the CTCDA is required before completing the Child Care and Education Advanced Certificate. Students in the program are assumed to be employed in a program that serves children under age 12 in a group setting.

Child Care Professional (APCCP) — Associate in Applied Science Degree

General Education Requirements		(20 credits)
ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 148	Functional Math for Elementary Teachers I	4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)	3
MUS 140 or	Music Theory I	
MUS 180	Music Appreciation	3

**The following courses are recommended for the Natural Science Elective: AST 111, BIO 101, GLG 100, GLG 104, or SCI 101*

Major/Area Requirements **(41 credits)**

The courses in the major/area requirements for the Child Care Professional Associate Degree are also part of the Child Care and Education Advanced Certificate & the Child Development Certificate. See an advisor for assistance.

CCP 101	Child Development**	3
CCP 113	Health, Safety and Nutrition for Child Care	3
CCP 122	Child Development Credentialing I	4
CCP 123	Child Development Credentialing II	4
CCP 132	Child Development Practicum I	1-2
CCP 133	Child Development Practicum II	1-2
CCP 160	Foundations of Child Care and Early Education	3
CCP 200	Working with Parents	3
CCP 209	Curriculum for Young Children	3
CCP 210	Child Guidance and Classroom Management	3
CCP 218	Advanced Child Care Seminar	1
CCP 219	Advanced Child Care Practicum	2
CCP 251	Education of Exceptional Children	3
CIS 100	Introduction to Computers and Software Applications	3
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
ENG 240 or	Children's Literature	
ENG 242	Multicultural Literature for Youth	3

Minimum Credits Required for the Program: 61

Notes:
***CCP 101 must be taken before or concurrently with any other CCP course.*

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Child Care Professional (APCCP)

Completion of the Child Care Professional Associate in Applied Science degree qualifies students to be a director of a child care center in the State of Michigan, or to be a lead teacher in a Head Start program. The program is the last level in a three-tier training program for adults who work with children under twelve in group settings.

Articulation: Ferris State University, BS degree, University of Michigan-Dearborn, BGS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Entrance requirements are: completion of the Child Development (CTCDA) certificate, current CDA, or two-year high school vocational child care certificate; and completion of the Child Care and Education Advanced Certificate or equivalent with a minimum grade of "C" in all child care courses. Academic Reading and Writing Levels of 6 are required in the courses of this program.

Continuing Eligibility Requirements: Students who wish to enroll in child care practicum courses: CCP 132, 133, and 134 must be employed a minimum of 8 hours for 15 weeks for each credit of practicum. Permission is required to enroll in any CCP practicum course. Permission can be granted only after the student has submitted a Work Place Learning Agreement, Student Agreement, and an Employer Agreement.

Shake
cross sectional
longitudinal

Aa
Bb

Washtenaw Community College

SCHOOL OF CONSTRUCTION TECHNOLOGY

Become part of the growing global community of Skilled Trades professionals or Skilled Trades managers. Design, plan, construct and complete structures for your home or for your career. You can earn a certificate or degree in Residential Construction, Construction Management or Heating, Ventilation and Air Conditioning. These programs offer the perfect blend of classroom education and hands-on training. At the Henry S. Landau Design and Construction Training Center, you will be taught construction skills from the ground up. You can learn classic skills such as woodworking or modern techniques needed to maintain or improve your own structure. On the main campus, the HVAC program offers a wide range of training to equip high-end technicians with the knowledge and skills needed for successful entry into the field.

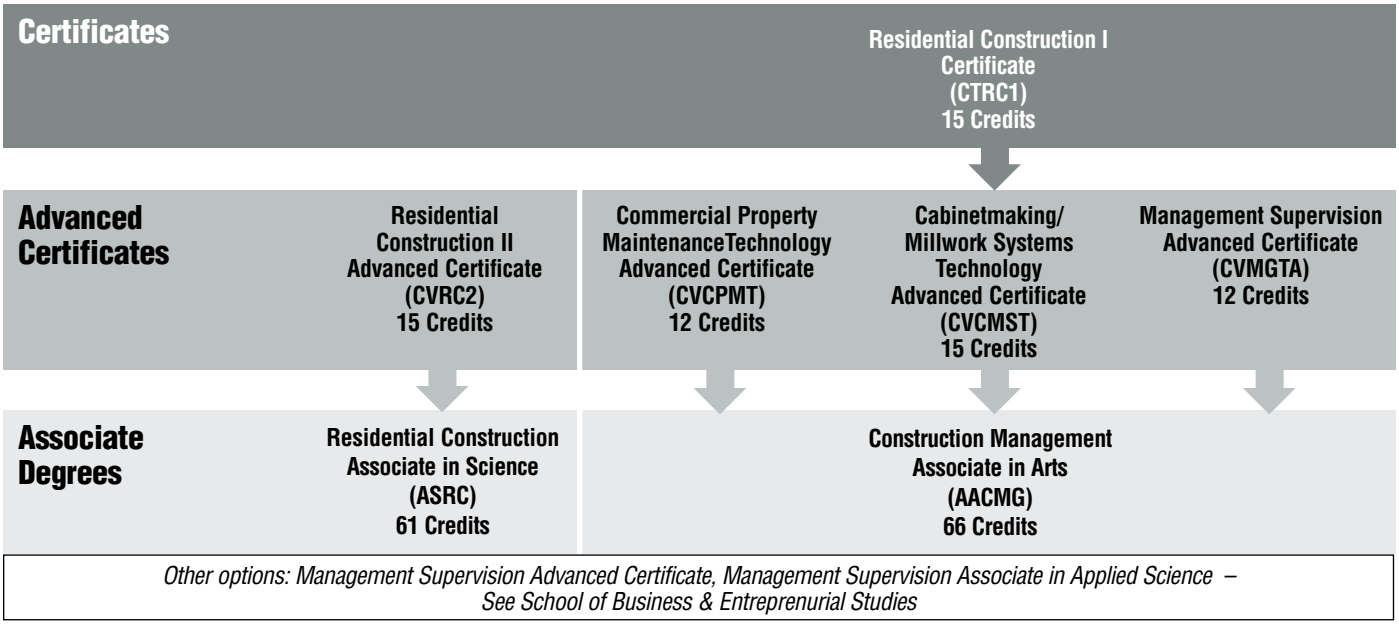
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree. Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

CONSTRUCTION MANAGEMENT

Prepare for work in the construction management or property maintenance industries through the completion of these programs.



Commercial Property Maintenance Technology (CVCPMT) — Advanced Certificate

Major/Area Requirements		(12 credits)
CON 130	Commercial Property Maintenance I	3
CON 133	Commercial Property Maintenance II	3
CON 135	Commercial Property Maintenance III	3
CON 137	Commercial Property Maintenance IV	3
Minimum Credits Required for the Program:		**12**

Commercial Property Maintenance Technology (CVCPMT)

With the growth of the construction industry, there is an increased demand for skilled maintenance personnel. This program prepares students for careers in Commercial Property Maintenance. It is designed for career advancement in Facility Management Administration as well as supervisory positions in commercial properties maintenance in multi-family housing, high rise apartments and business centers, hotels and recreational/leisure centers, hospitals, educational institutions, and municipal agencies. Students who complete the program, can advance in their career paths by completing the Construction Management, Facility Management Administration, and Heating Ventilating and Air Conditioning certificate programs.

Program Admission Requirements: Students must complete the Residential Construction I Certificate to be admitted into the program.

Construction Management (AACMG) — Associate in Arts Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 160	Basic Statistics	4
CEM 105 or	Fundamentals of Chemistry	
CEM 111	General Chemistry I	4
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
ENG 181 or	African-American Literature*	
ENG 214	Literature of the Non - Western World	3
PHL 205	Ethics	3

Major/Area Requirements		(15 credits)
ARC 117	Construction Materials	3
CMG 130	Construction Site Safety and MIOSHA Regulations	3
CMG 150	Introduction to Construction Management	3
CMG 170	Construction Graphics	3
CMG 200	Construction Systems	3

Required Support Courses		(21 credits)
ACC 111	Principles of Accounting I	3
BMG 207	Business Communication	3
BMG 240	Human Resources Management	3
CIS 100	Introduction to Computers and Software Applications	3
ECO 211	Principles of Economics I	3
MTH 178	General Trigonometry	3
BMG 106 or	Legal Basics in Business	
BMG 111	Business Law I	3

Minimum Credits Required for the Program: 66

Notes:
**See the EMU Diverse World Requirement list.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Construction Management (AACMG)

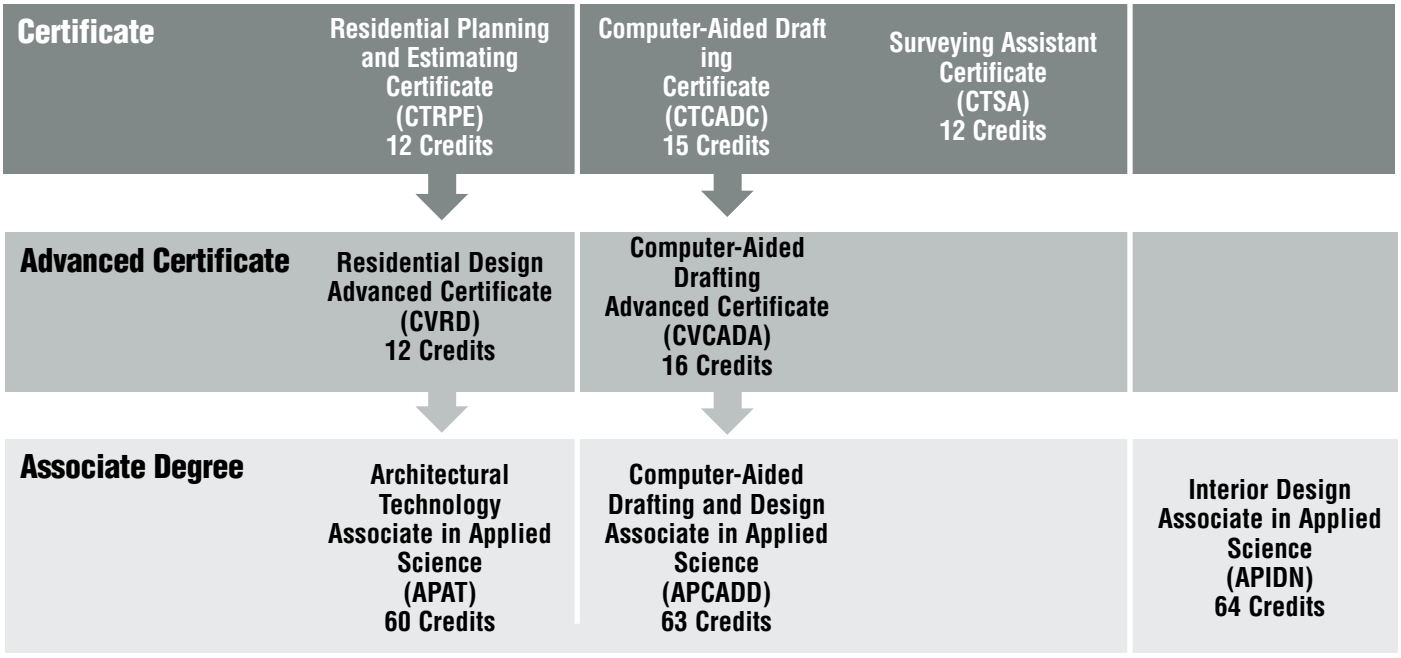
This program prepares students for entry-level jobs in the construction industry as well as for transfer to a bachelor's degree program in construction management at a four-year college or university. Students who transfer will continue developing the skills needed to work for construction contractors, engineering/architectural firms, public agencies, or trade associations in positions such as office engineer, field engineer, safety engineer, project engineer, foreman, estimator, scheduler, expeditor, quality control engineer, inspector, material representative or independent contractor. The program transfers to Eastern Michigan University. In addition to the required courses within the degree program, students may transfer additional courses taken at WCC that will be applied to technical, business and math/science requirements for the bachelor's degree program at Eastern Michigan University.

Articulation: Eastern Michigan University, several BS degrees. This program meets MACRAO. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Academic Math Level 4 or MTH 169 with a "C" or better is required to enroll in CMG 150. Two years of high school algebra is recommended.

DRAFTING AND SURVEYING

These programs focus on the designing and planning careers needed throughout the construction industry.



Computer-Aided Drafting (CTCADC) — Certificate

Major/Area Requirements		(15 credits)
CAD 105	Blueprint Reading and Analysis	3
CAD 111	CAD I-Detailing	4
CAD 113	CAD II	4
CAD 115	Descriptive Geometry	4
Minimum Credits Required for the Program:		**15**

Computer-Aided Drafting (CTCADC)

The Computer-Aided Drafting Certificate prepares students for entry-level work in the field of computer-aided drafting. The student will use CAD software to create dimensional detail and assembly drawings. The program also gives a foundation for WCC's advanced certificate in CAD.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Residential Planning and Estimating (CTRPE) — Certificate

Major/Area Requirements		(12 credits)
ARC 101	Graphic Communication for the Construction Industry	3
ARC 102	Architectural CAD	2
ARC 117	Construction Materials	3
ARC 228	Construction Estimating and Specifications	4
Minimum Credits Required for the Program:		**12**

Residential Planning and Estimating (CTRPE)

Construction is one of the nation's largest industries and the need for skilled workers in the field is expected to increase. Students in the Residential Planning and Estimating program will learn the skills needed for these positions: blueprint reading, basic architectural design, and basic CAD. The program prepares students for positions in residential construction planning where they will schedule work, research products, develop bills of materials or estimates, and prepare proposals.

Surveying Assistant (CTSA) — Certificate

Major/Area Requirements		(12 credits)
ARC 109	Surveying Layout I	3
ARC 143	Surveying Layout II	3
ARC 209	Surveying Layout III	3
ARC 243	Surveying Layout IV	3
Minimum Credits Required for the Program:		**12**

Surveying Assistant (CTSA)

This program will provide technical training in the area of Surveyor's Assistant. Surveying technicians assist surveyors in making precise measurements of the earth's surface for the purpose of establishing property boundaries, subdividing land parcels, creating maps of land and water forms for planning, navigation and general use, and the layout and control of construction projects. Technicians are familiar with the operation of sophisticated optical and electronic surveying instruments needed for compiling this information. Surveying technicians may work for private engineering and land surveying firms. They may also find jobs with local and state governmental agencies.

Computer-Aided Drafting (CVCADA) — Advanced Certificate

Major/Area Requirements		(16 credits)
CAD 211	CAD III	4
CAD 217	Mechanical Design	4
CAD 221	CAD IV	4
MTT 111	Machine Shop Theory and Practice	4
Minimum Credits Required for the Program:		**16**

Computer-Aided Drafting (CVCADA)

This program prepares students for jobs as a CAD Designer/Drafter; able to prepare CAD-based models of assemblies and details by working from rough sketches, specifications, catalogs, existing CAD parts and models, and calculations provided by engineers and designers. The program provides the skills to generate complete and accurate assembly and detail drawings and 3D models using industry conventions for manufacturability and economy. Credits can be applied toward the Associate Degree in Computer-Aided Drafting and Design.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must complete the Computer-Aided Drafting Certificate.

Residential Design (CVRD) — Advanced Certificate

Major/Area Requirements		(12 credits)
ARC 000	Architectural Studio	0
ARC 109	Surveying Layout I	3
ARC 111	Architectural Drawing I	3
ARC 120	Mechanical and Electrical Systems for Buildings	3
ARC 122	Architectural Drawing II	3
Minimum Credits Required for the Program:		**12**

Residential Design (CVRD)

This program prepares students for jobs as an architectural drafting detailer where students are expected to draw each part shown on a layout by giving dimensions, materials, and any other necessary information to make the drawing clear and complete.

Program Admission Requirements: Students must complete the Residential Planning and Estimating Certificate to be admitted into the program.

Architectural Technology (APAT) — Associate in Applied Science Degree

General Education Requirements		(19 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)*	3-4
PHY 105	Conceptual Physics	4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

Major/Area Requirements		(41 credits)
ARC 101	Graphic Communication for the Construction Industry	3
ARC 102	Architectural CAD	2
ARC 109	Surveying Layout I	3
ARC 111	Architectural Drawing I	3
ARC 117	Construction Materials	3
ARC 120	Mechanical and Electrical Systems for Buildings	3
ARC 122	Architectural Drawing II	3
Elective	Complete a minimum of 21 credits from: ARC 150, ARC 174, ARC 210, ARC 213, ARC 218, ARC 224, ARC 274, BMG 102, BMG 109, BMG 230, BMG 291, CMG 130, CMG 150**	21

Minimum Credits Required for the Program: 60

Notes:
**MTH 157 is recommended*

***Students planning to transfer must consult with a program advisor before choosing classes. Please check course descriptions for pre- and co-requisites.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Architectural Technology (APAT)

This program prepares students for positions as an architectural drafting technician where they will prepare detailed drawings based on rough sketches, specifications, and calculations made by scientists, engineers, architects, and designers. Students will also calculate the strength, quality, quantity, and cost of materials.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Academic Math Level 3 or better is required to enroll in MTH 157. One year of high school algebra is recommended.

Computer-Aided Drafting and Design (APCADD) — Associate in Applied Science Degree

General Education Requirements **(19 credits)**

ENG 107 or	Technical Writing I	
ENG 111	Composition I*	3-4
Speech	Elective(s)	3
MTH 157 or	Practical Geometry and Trigonometry	
MTH 178	General Trigonometry	3
PHY 105 or	Conceptual Physics	
PHY 111	General Physics I*	4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**Choose ENG 111 and PHY 111 if you plan to transfer to a four-year college.*

Major/Area Requirements **(44 credits)**

Complete the Computer-Aided Drafting certificate **(15 credits)**

CAD 105	Blueprint Reading and Analysis	3
CAD 111	CAD I-Detailing	4
CAD 113	CAD II	4
CAD 115	Descriptive Geometry	4

Complete the Computer-Aided Drafting Advanced Certificate **(16 credits)**

CAD 211	CAD III	4
CAD 217	Mechanical Design	4
CAD 221	CAD IV	4
MTT 111	Machine Shop Theory and Practice	4

Complete additional courses for the degree **(13 credits)**

CAD 109	Theory of Dies	3
CAD 213	Mechanisms	4
CAD 215	Geometric Dimensioning and Tolerancing	3
CAD 219	Theory of Jigs and Fixtures	3

Minimum Credits Required for the Program: **63**

Notes:
The following course sequence is recommended for the major courses. Check course descriptions for pre- and co-requisites:

I	II	III	IV
CAD 111	CAD 113	CAD 211	IDD 211
CAD 105	CAD 115	CAD 219	CAD 213
CAD 109	CAD 215	MTT 111	CAD 217
			CAD 221

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Computer-Aided Drafting and Design (APCADD)

This program prepares students for jobs as a CAD operator or technician, able to prepare clear, complete, and accurate detail and assembly drawings from rough sketches, specifications, and calculations of engineers and designers to be used for mechanical applications.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Academic Math Level 3 is required to enroll in MTH 157; Academic Math Level 5 is required to enroll in MTH 178. Two years of high school algebra is recommended.

Interior Design (APIDN) — Associate in Applied Science Degree

General Education Requirements		(21 credits)
ENG 111	Composition I	4
Speech	Elective(s)*	3
MTH 160 or	Basic Statistics	
MTH 169	Intermediate Algebra**	4
BIO 102	Human Biology	4
PSY 100	Introductory Psychology	3
Arts/Human.	Elective(s)*	3
Major/Area Requirements		**(34 credits)**
IDN 111	Interior Design Studio I	4
IDN 113	Theory of Interior Design I	2
IDN 114	Human Needs in Design	2
IDN 122	Interior Design Studio II	4
IDN 133	Theory of Interior Design II	2
IDN 137	Interior Design Materials	2
IDN 201	Building Systems for Interior Design	2
IDN 211	Interior Design Studio III	4
IDN 222	Interior Design Studio IV	4
IDN 224	History of Interior Design I	3
IDN 234	History of Interior Design II	3
IDN 240	Interior Design Building Codes	2
Required Support Courses		**(9 credits)**
ARC 102	Architectural CAD	2
ART 111	Basic Drawing I	4
CIS 100	Introduction to Computers and Software Applications	3
Minimum Credits Required for the Program:		**64**

Notes:
**Students should meet with a program advisor to select appropriate electives to meet these requirements.*
***MTH 160, MTH 169, or higher level math will meet this requirement.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Interior Design (APIDN)

This Associate in Applied Science Degree prepares students for: entry-level positions as design assistants; and transfer to baccalaureate programs in interior design. Emphasis is placed on: teamwork; creative problem-solving; client relations; human factors in design; and interaction with practicing design professionals.

Program Admission Requirements: Academic Math Level 3 is needed to enroll in MTH 160 or MTH 169.

Whether you are working on residential or commercial equipment these programs prepare you for a career in the Heating, Ventilation, Air Conditioning and Refrigeration Industry.

Certificates

HVACR-Residential Certificate (CTHVRR) 25 Credits

Advanced Certificate

HVACR-Commercial Advanced Certificate (CVHVAM) 15 Credits

HVACR-Industrial Advanced Certificate (CVHVAI) 15 Credits

Associate Degrees

HVAC Associate in Applied Science (APHVCR) 60 Credits

Heating, Ventilation, Air Conditioning, and Refrigeration - Residential (CTHVRR) Certificate

Required Courses		(25 credits)
HVA 101	Heating, Ventilating, and Air Conditioning I	4
HVA 102	Sheet Metal Fabrication	4
HVA 103	Heating, Ventilation, and Air Conditioning II	4
HVA 105	Residential and Light Commercial Heating Systems	4
HVA 107	Residential and Light Commercial Air Conditioning Systems	4
HVA 108	Residential HVAC Competency Exams and Codes	3
WAF 104	Soldering and Brazing	2
Minimum Credits Required for the Program:		**25**

Heating, Ventilation, Air Conditioning, and Refrigeration - Residential (CTHVRR)

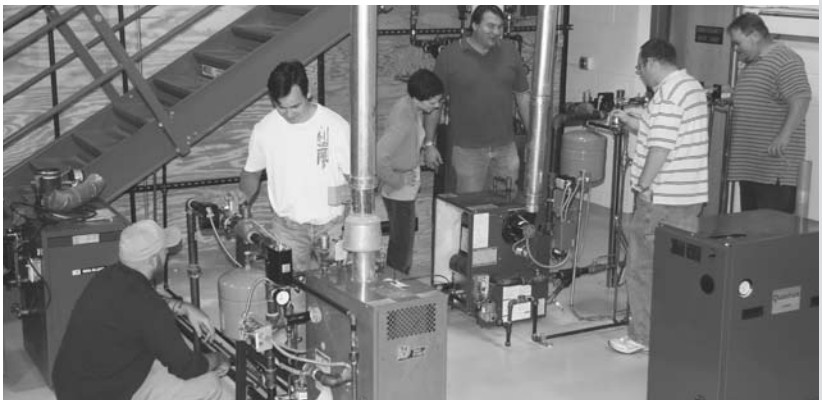
This program prepares students for entry-level jobs in HVAC contracting companies, HVAC servicing companies, hospitals, schools and other public institutions, and apprenticeships in large manufacturing plants and supply houses. In these commercial, residential, or institutional settings students combine their diagnostic and repair skills with customer relations skills to service heating, ventilation, and air conditioning equipment. This program also helps prepare students for the third class refrigeration licensure examination.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Heating, Ventilation, Air Conditioning, and Refrigeration - Commercial (CVHVAM)

Advanced Certificate

Core Courses	**(6 credits)**	
HVA 201	Energy Audits	3
HVA 202	Air System Layout and Design	3
Major/Area Requirements		**(9 credits)**
HVA 203	Refrigeration Systems	3
HVA 205	Hydronic Systems	3
HVA 207	Commercial Industry Standards with Competency Exams	3
Minimum Credits Required for the Program:		**15**



Heating, Ventilation, Air Conditioning, and Refrigeration - Commercial (CVHVAM)

This program is a capstone to HVAC-Residential Certification, and is designed for students who wish to develop skills in HVACR mechanics or installation. It prepares the student for industry-recognized certification (C/IS) for entry-level employment in commercial heating, ventilation and air conditioning. Additional theory and hands-on experience will increase students' knowledge base concerning HVACR systems at the commercial level. The student will develop knowledge and skills in sizing, layout, installation, maintenance, and trouble shooting HVACR equipment found in small office buildings, schools, supermarkets, and other light commercial settings.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must complete the Heating, Ventilation, Air Conditioning, and Refrigeration Residential Certificate (CTHVRR).

Heating, Ventilation, Air Conditioning, and Refrigeration - Industrial (CVHVAI)

Advanced Certificate

Core Courses	**(6 credits)**	
HVA 201	Energy Audits	3
HVA 202	Air System Layout and Design	3
Major/Area Requirements		**(9 credits)**
HVA 204	Central Heating Plants	3
HVA 206	Central Cooling Plants	3
HVA 208	Codes and Industry Standards with Industrial ICE	3
Minimum Credits Required for the Program:		**15**

Heating, Ventilation, Air Conditioning, and Refrigeration - Industrial (CVHVAI)

This program is a capstone to HVAC-Residential Certification, and is designed for students who wish to develop skills in HVACR mechanics or installation. It prepares the student for industry-recognized certification (Commercial Industry Competency Exam) for entry-level employment in industrial heating, ventilation, and air conditioning. This program is designed to provide the student with theoretical and practical experiences in HVACR at the industrial level. Through intensive hands-on experiences, the student will develop knowledge and skills in sizing, layout, installation, maintenance, and trouble shooting HVACR equipment found in large buildings, industrial complexes, power plants, and other industrial settings.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must complete the Heating, Ventilation, Air Conditioning, and Refrigeration Residential Certificate (CTHVRR).

Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR)

Associate in Applied Science Degree

General Education Requirements		**(18 credits)**
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Major/Area Requirements		**(42 credits)**
	Complete the Heating, Ventilation, Air Conditioning and Refrigeration - Residential Certificate (25 credits).	
HVA 101	Heating, Ventilating, and Air Conditioning I	4
HVA 102	Sheet Metal Fabrication	4
HVA 103	Heating, Ventilation, and Air Conditioning II	4
HVA 105	Residential and Light Commercial Heating Systems	4
HVA 107	Residential and Light Commercial Air Conditioning Systems	4
HVA 108	Residential HVAC Competency Exams and Codes	3
WAF 104	Soldering and Brazing	2
Elective	Complete the Heating, Ventilation, Air Conditioning and Refrigeration- Commercial Advanced Certificate (15 credits). HVA 201, HVA 202, HVA 203, HVA 205, HVA 207	
	or	
Elective	Complete the Heating, Ventilation, Air Conditioning and Refrigeration - Industrial Advanced Certificate (15 Credits). HVA 201, HVA 202, HVA 204, HVA 206, HVA 208	15
Elective	HVA or WAF courses recommended*	2
Minimum Credits Required for the Program:		**60**

Notes:
**Complete additional credits to bring the total to 60 credits. Students should meet with a program advisor to select an appropriate elective course.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR)

This program is a capstone to both the Heating, Ventilation, Air Conditioning and Refrigeration - Industrial and the Heating, Ventilation, Air Conditioning and Refrigeration - Commercial Advanced Certificates. It provides a rigorous heating, ventilation, air-conditioning and refrigeration (HVACR) background with solid preparation for entry-level management positions or transfer to four-year programs offering bachelor degrees in HVACR, technology management, and other technically oriented fields. This program also provides opportunities to obtain advanced certifications which are recognized throughout the heating, ventilation and air-conditioning industry.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

RESIDENTIAL CONSTRUCTION

If you want to learn basic construction, prepare to take the Michigan Builder's License exam or are considering starting a construction business, this is the place to start.

Certificates

- Residential Construction I Certificate (CTRC1) 15 Credits

Advanced Certificates

- Residential Construction II Advanced Certificate (CVRC2) 15 Credits
- Commercial Property Maintenance Technology Advanced Certificate (CVCPMT) 12 Credits
- Cabinetmaking/ Millwork Systems Technology Advanced Certificate (CVCMST) 15 Credits
- Management Supervision Advanced Certificate (CVMGTA) 12 Credits

Associate Degrees

- Residential Construction Associate in Science (ASRC) 61 Credits
- Construction Management Associate in Arts (AACMG) 66 Credits

Other options: Management Supervision Advanced Certificate, Management Supervision Associate in Applied Science – See School of Business & Entreprenurial Studies

Residential Construction I (CTRC1) — Certificate

Major/Area Requirements		(15 credits)
CON 104	Residential Construction I	3
CON 105	Residential Construction II	3
CON 106	Math, Measurement, and Graphics	3
CON 204	Residential Construction III	3
CON 205	Residential Construction IV	3
Minimum Credits Required for the Program:		**15**

Residential Construction I (CTRC1)

This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. This program also gives students the potential for being selected for one of the many apprentice classifications associated with the construction field.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Cabinetmaking/Millwork Systems Technology (CVCMST) — Advanced Certificate

Major/Area Requirements		(15 credits)
CON 170	Cabinetry and Millwork I	3
CON 173	Cabinetry and Millwork II	3
CON 175	Cabinetry and Millwork III	3
CON 250	Cabinet Shop Management and Fundamentals	3
CON 275	Cabinetry and Millwork IV	3
Minimum Credits Required for the Program:		**15**

Cabinetmaking/Millwork Systems Technology (CVCMST)

According to the National Careers Education and Research Institute, the growth in the housing industry has created a demand for skilled precision wood workers. This program is designed to develop skills and knowledge needed for those positions. Students will develop skills related to the design, fabrication, and installation of interior cabinetry and trim systems for residential construction. The program will provide access to specialty careers as trim carpenters, cabinetmakers, furniture makers, and repair technicians.

Program Admission Requirements: Students must complete the Residential Construction I Certificate to be admitted into the program.

Residential Construction II (CVRC2) — Advanced Certificate

Major/Area Requirements		(15 credits)
CON 220	Residential Construction Licensing, Contracts, and Start Up	3
CON 230	Residential Construction Production	3
CON 240	Advanced Trim and Interior Finish Techniques	3
CON 255	Residential Construction Concrete and Exterior Finishes	3
CON 260	Residential Construction Remodeling	3
Minimum Credits Required for the Program:		**15**

Residential Construction II (CVRC2)

This advanced certificate prepares students for specific careers in residential construction. The program will prepare students to take the State of Michigan Builder's License exam, create contracts for residential construction projects, and gain necessary techniques for specific residential contractors.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Completion of the Residential Construction I Certificate or two years experience in the construction industry is required for entry into this program.

Residential Construction (ASRC) — Associate in Science Degree

General Education Requirements		(31 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)	3
MTH 178	General Trigonometry	3
PHY 105	Conceptual Physics	4
PLS 112	Introduction to American Government	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)*	8
Major/Area Requirements		**(30 credits)**
CMG 130	Construction Site Safety and MIOSHA Regulations	3
CON 104	Residential Construction I	3
CON 105	Residential Construction II	3
CON 106	Math, Measurement, and Graphics	3
CON 204	Residential Construction III	3
CON 205	Residential Construction IV	3
CON 220	Residential Construction Licensing, Contracts, and Start Up	3
CON 230	Residential Construction Production	3
CON 255	Residential Construction Concrete and Exterior Finishes	3
Elective	Choose 1 elective	3
Minimum Credits Required for the Program:		**61**

Notes:
**SPN 111 is strongly recommended.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Residential Construction (ASRC)

The Residential Construction program teaches students how to build a home from the ground up. The program offers a balance of classroom theory and hands-on training. Students will also learn how to start up their own construction business.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Continuing Eligibility Requirements: Students must complete all general education and major area requirement courses with a grade of "C" or better.

WELDING AND FABRICATION

Learn skills from beginning welding to advanced fabrication for a career as a welding maintenance mechanic.

Certificates	**Welding Certificate (CTWLDC) 21 Credits**		
Advanced Certificate	**Welding Mechanics Advanced Certificate (CVWLDA) 24 Credits**	**or**	**Management Supervision Advanced Certificate (CVMGTA) 12 Credits**
Associate Degrees	**Welding Associate in Applied Science (APWLDT) 63 Credits**	**or**	**Management Supervision Associate in Applied Science (APMGTM) 60 Credits**

Welding (CTWLDC) — Certificate

Major/Area Requirements		(21 credits)
WAF 105	Welding for Art and Engineering	2
WAF 106	Blueprint Reading for Welders	3
WAF 111	Welding I Oxy-Acetylene	4
WAF 112	Welding II Basic ARC	4
WAF 123	Welding III Advanced Oxy-Acetylene (OAW)	4
WAF 124	Welding IV Advanced ARC (SMAW)	4
Minimum Credits Required for the Program:		**21**

Welding (CTWLDC)

This program prepares students for entry-level jobs involving gas welding, brazing, and various combinations of arc welding processes, where they work under the supervision of an experienced welding technician. The program also gives students a foundation for WCC's Advanced Certificate in Welding Mechanics.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Welding Mechanics (CVWLDA) — Advanced Certificate

Major/Area Requirements		(24 credits)
WAF 200	Layout Theory Welding	3
WAF 210	Welding Metallurgy	3
WAF 215	Welding V Advanced GTAW and GMAW	4
WAF 226	Specialized Welding Procedures	4
WAF 227	Basic Fabrication	3
WAF 229	Shape Cutting Operations	3
WAF 289	MIG Welding	4
Minimum Credits Required for the Program:		**24**

Welding Mechanics (CVWLDA)

This program prepares students for jobs as a welding maintenance mechanic where students weld metal parts together according to layouts, blueprints, or work orders using gas welding or brazing and any combination of arc-welding processes. The credits in this program also may be applied toward an Associate in Applied Science Degree in Welding.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Successful completion of the Welding Certificate (CTWLDC)

Welding (APWLDT) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)*	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

*MTH 157 is recommended.

Major/Area Requirements		(45 credits)
Complete the Welding Certificate		**(21 credits)**
WAF 105	Welding for Art and Engineering	2
WAF 106	Blueprint Reading for Welders	3
WAF 111	Welding I Oxy-Acetylene	4
WAF 112	Welding II Basic ARC	4
WAF 123	Welding III Advanced Oxy-Acetylene (OAW)	4
WAF 124	Welding IV Advanced ARC (SMAW)	4
Complete the Welding Mechanics Advanced Certificate		**(24 credits)**
WAF 200	Layout Theory Welding	3
WAF 210	Welding Metallurgy	3
WAF 215	Welding V Advanced GTAW and GMAW	4
WAF 226	Specialized Welding Procedures	4
WAF 227	Basic Fabrication	3
WAF 229	Shape Cutting Operations	3
WAF 289	MIG Welding	4

Minimum Credits Required for the Program: 63

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Welding (APWLDT)

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. Students can earn an AAS in Welding by completing the requirements listed below.

Articulation: Eastern Michigan University, several BS degrees, Pennsylvania College of Technology, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Washtenaw Community College | SCHOOL OF CRIMINAL JUSTICE AND LAW ENFORCEMENT

These programs help students develop the skills and knowledge necessary for work in law enforcement and criminal justice. Completion of the Police Academy Certificate prepares the student to take the MCOLES necessary for a career as a police officer. Students preparing for employment in occupations that do not require completion of the MCOLES/Police Academy or that do require a four-year degree (such as most Federal employment) can begin their studies by obtaining a Criminal Justice Associates of Arts degree, which is transferrable to most baccalaureate programs. This degree is described in the Transfer and University Parallel Programs section of the catalog

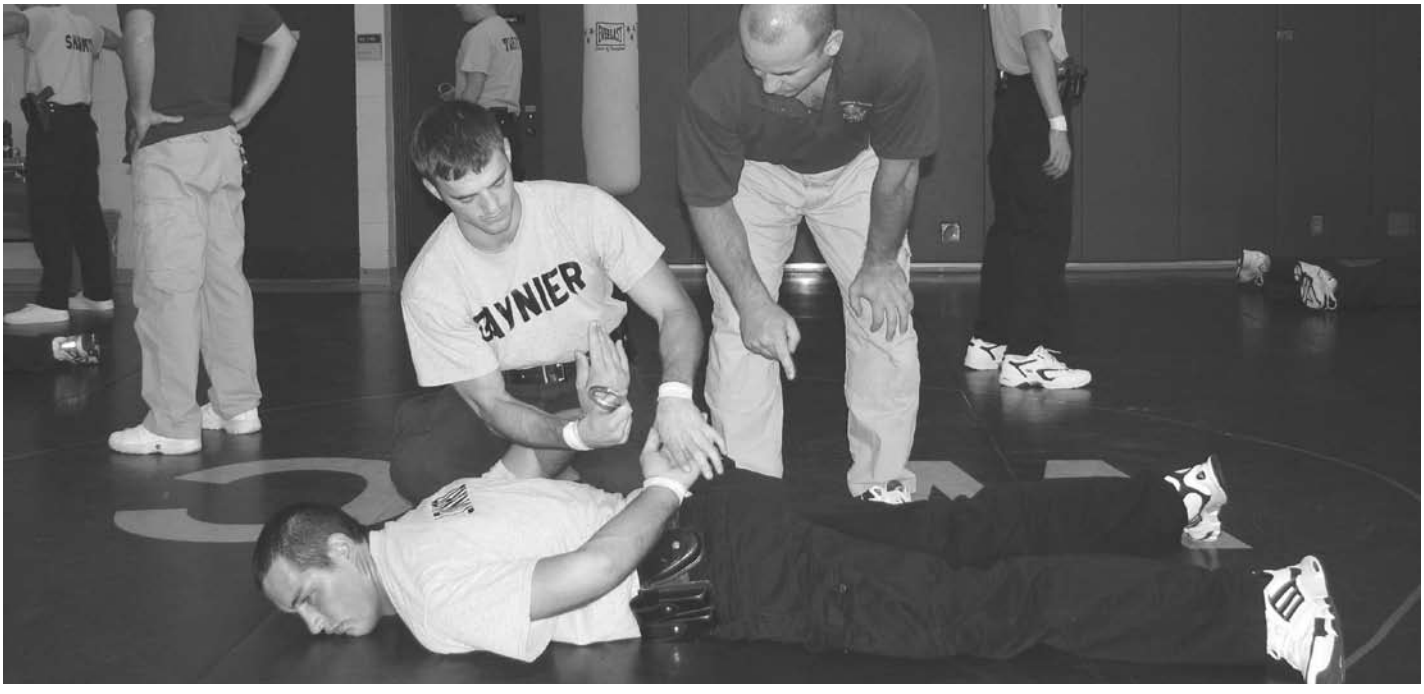
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree. Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates	**Police Academy Certificate (CTPA) 16 Credits**
Associate Degree	**Criminal Justice – Law Enforcement Associate in Applied Science (APCJLE) 60 Credits**

Other options: Criminal Justice Associate in Arts – See Transfer and University Parallel Programs



CRIMINAL JUSTICE AND LAW ENFORCEMENT

The programs prepare the student for careers as a police officer and in criminal justice.

Police Academy (CTPA) — Certificate

Major/Area Requirements		(16 credits)
CJT 221	Law Enforcement Training	16
Minimum Credits Required for the Program:		**16**

Police Academy (CTPA)

The successful completion of this program is mandatory for anyone seeking law enforcement licensing in the state of Michigan. The Michigan Commission on Law Enforcement Standards (MCOLES) and the WCC Police Academy Advisory Committee have created the course content. The WCC Student Handbook, the MCOLES Policy and Procedure Manual, and the WCC Police Academy Daily Rules and Regulations will govern student conduct. The police academy is structured as an adult learning experience, and will require significant self-discipline on the part of the student. Teamwork is required. Just as sworn law enforcement officers operate under a code of honor which requires them to be above reproach in ethics and behavior, students will also be held to this same standard. MCOLES pre-enrollment is a corequisite of this course. Prospective students should review the "Selection and Employment Standards for Michigan Law Enforcement Officers" on the MCOLES Web site (mcoles.org).

Criminal Justice - Law Enforcement (APCJLE) — Associate in Applied Science Degree

General Education Requirements		(20 credits)
ENG 100 or	Introduction to Technical and Workplace Writing	
ENG 111	Composition I	4
COM 102	Interpersonal Communication	3
MTH 151 or	Technical Algebra	
MTH 160 or	Basic Statistics	
MTH 169	Intermediate Algebra	4
Nat. Sci.	Elective(s)	3
PSY 100 or	Introductory Psychology	
PSY 200	Child Psychology	3
Arts/Human.	Elective(s)	3

Major/Area Requirements		(40 credits)
CJT 100	Introduction to Criminal Justice	3
CJT 111	Police/Community Relations	3
CJT 120	Criminal Justice Ethics	3
CJT 160	Criminal Justice Constitutional Law	3
CJT 221	Law Enforcement Training	16
CJT 224	Criminal Investigation	3
CJT 225	Seminar in Criminal Justice	3
PEA 102	Cardiovascular Training	1
PEA 105	Weight Training - Cybex/Free Weights	2
Elective	Complete one course from the following: SOC 100, SOC 202, SOC 205, SOC 207, SOC 250, or CJT 223	3

Minimum Credits Required for the Program: 60

Notes:
It is recommended that students take one or two semesters of Spanish in addition to program requirements.The following sequence of courses is recommended for Criminal Justice courses.

I	*II*	*III*	*IV*
CJT 100	*CJT 111*	*CJT 225*	*CJT 221*
CJT 120	*CJT 160*	*CJT 224*	

Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Criminal Justice - Law Enforcement (APCJLE)

This program prepares students for certification to work in law enforcement jobs in the State of Michigan. Students must complete the academic program prior to entering the Police Academy component of the program.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Continuing Eligibility Requirements:

- Admission to the Police Academy component of this program (CJT 221) is based on passing reading, writing, and physical activity examinations as well as fingerprinting and criminal history checks.
- Students who do not enter the academy may complete the Criminal Justice Associate in Arts Degree instead of the Criminal Justice Law Enforcement Associate in Applied Science Degree, and will not be certified for employment.
- Students admitted to the Police Academy are required to purchase gym clothes, khaki uniforms, textbooks, and other supplies.
- Academy students are required to adhere to additional rules of behavior and discipline beyond the general code of conduct.

POLICE

Washtenaw Community College | SCHOOL OF CULINARY ARTS AND HOSPITALITY MANAGEMENT

Find your passion in food, friends and elegant surroundings. Develop skills for an entry-level position in restaurant, hospitality or institutional settings. Whether your interests lie in pastry and wedding cakes, food preparation and marketing, or management of food service, these are the programs for you.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates

- Hospitality Management Certificate (CFHMC) 30 Credits
- Culinary Arts Certificate (CFCULC) 33 Credits
- Baking and Pastry Certificate (CTBAKP) 32 Credits

Advanced Certificate

- Management Supervision Advanced Certificate (CVMGTA) 12 Credits

Associate Degrees

- Culinary and Hospitality Management Associate in Applied Science (APCULD) 67 Credits
- or
- Management Supervision Associate in Applied Science (APMGTM) 60 Credits
- or
- Occupational Studies Associate in Applied Science (APOST) 60 Credits

CULINARY ARTS AND HOSPITALITY MANAGEMENT

Develop the skills necessary for a career in the hospitality industry.

Baking and Pastry (CTBAKP) — Certificate

Major/Area Requirements		(32 credits)
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene*	3
CUL 114	Baking I	3
CUL 115	Pastry I	3
CUL 118	Principles of Nutrition	3
CUL 120	Culinary Skills	3
CUL 121	Introduction to Food Preparation Techniques	3
CUL 124	Baking II	3
CUL 125	Pastry II	3
CUL 132	Basic Cake and Wedding Cake Design	2
CUL 224	Principles of Cost Control	3
Minimum Credits Required for the Program:		**32**

Notes:
**CUL 110 must be taken as a pre- or co-requisite with any of the lab classes: CUL 114, CUL 115, CUL 120, CUL 121.The following sequence of courses is recommended for Culinary Arts courses. Please check course descriptions for pre- and co-requisites:*

I	*I*	*III*
CUL 100	*CUL 120*	*CUL 125*
CUL 110	*CUL 121*	*CUL 132*
CUL 114	*CUL 124*	
CUL 115	*CUL 224*	
CUL 118		

Baking and Pastry (CTBAKP)

This program prepares students for careers in commercial baking, where they will work in retail deli-bakeries, country clubs, resorts, hotels, and institutional food service operations. Courses can be applied toward the Associate in Applied Science Degree in Culinary and Hospitality Management.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Culinary Arts (CFCULC) — Certificate

Major/Area Requirements		(33 credits)
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene**	3
CUL 114	Baking I	3
CUL 118	Principles of Nutrition	3
CUL 120	Culinary Skills	3
CUL 121	Introduction to Food Preparation Techniques	3
CUL 150	Food Service Management	3
CUL 151	Food Service Marketing	3
CUL 210	Gardemanger*	3
CUL 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
Minimum Credits Required for the Program:		**33**

Notes:
**CUL 210 is offered in spring semesters only.*
***CUL 110 must be taken as a pre- or co-requisite with any of the lab classes: CUL 114, CUL 115, CUL 120, CUL 121. Recommended sequence for Culinary Arts courses:*

I	II	IS
CUL 100	CUL 114	CUL 210*
CUL 110**	CUL 150	
CUL 118	CUL 151	
CUL 120	CUL 230	
CUL 121	CUL 231	

Culinary Arts (CFCULC)
This program prepares students for a position as a food production specialist in a hotel, restaurant, or institution, where sauteing, roasting, broiling, baking, vegetable preparation, producing soups and sauces, food storage, and sanitation will be among the skills they will use. The program also gives students a foundation for continued study toward an Associate in Applied Science in Culinary and Hospitality Management.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Hospitality Management (CFHMC) — Certificate

Major/Area Requirements		(30 credits)
BMG 207	Business Communication	3
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene*	3
CUL 118	Principles of Nutrition	3
CUL 150	Food Service Management	3
CUL 151	Food Service Marketing	3
CUL 220	Organization/Management of Food Systems	3
CUL 224	Principles of Cost Control	3
CUL 250	Principles of Beverage Service	3
CUL 174	CUL Co-op Education I	3
Minimum Credits Required for the Program:		**30**

Notes:
**CUL 110 must be taken as a pre- or co-requisite with any of the lab classes: CUL 114, CUL 115, CUL 120, CUL 121.*

I	II	IS
CUL 100	CUL 174	CUL 250
CUL 110*	CUL 220	
CUL 118	CUL 224	
CUL 150	BMG 207	
CUL 151		

Hospitality Management (CFHMC)
This program prepares students for an entry level supervisory position in the hospitality management industry such as a dining room manager in a restaurant, country club, hotel or retirement community. This certificate also equips students with the skills needed for an entry level position in banquet and catering sales. In addition, it provides a foundation for continued study toward an Associate in Applied Science in Culinary and Hospitality Management, or serves as the first year study toward a 1+3 transfer toward a baccalaureate degree at a four-year college or university.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Culinary and Hospitality Management (APCULD) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
MTH 125	Everyday College Math	3
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

Students who earn a certificate prior to entering the degree program need to select at least 3 credits in each of the General Education requirement areas.

Major/Area Requirements		(49 credits)
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene**	3
CUL 114	Baking I	3
CUL 118	Principles of Nutrition	3
CUL 120	Culinary Skills	3
CUL 121	Introduction to Food Preparation Techniques	3
CUL 150	Food Service Management	3
CUL 151	Food Service Marketing	3
CUL 210	Gardemanger*	3
CUL 220	Organization/Management of Food Systems	3
CUL 224	Principles of Cost Control	3
CUL 228	Layout and Equipment*	3
CUL 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
CUL 115 or	Pastry I	
CUL 124	Baking II	3
CUL 125 or	Pastry II	
CUL 227 or	Advanced Culinary Techniques	
CUL 250	Principles of Beverage Service*	2-3
CUL 174	CUL Co-op Education I***	2

Minimum Credits Required for the Program: 67

Notes:

**CUL 210, CUL 228 and CUL 250 are offered in spring semesters only*

***CUL 110 must be taken as a co-requisite with any of the lab classes: CUL 114, CUL 115, CUL 120, CUL 121.*

****Students who earn a certificate in Hospitality Management prior to entering the degree program, do not need to take CUL 174. Students who earn a certificate in Baking and Pastry, need to take CUL 174 as a one credit course.*

Students who earn a certificate in Culinary Arts, need to take CUL 174 as a two credit course. The following sequence of courses is recommended for Culinary Arts courses. Please check course descriptions for pre and co-requisites:

IF	*IW*	*IS*	*2F*	*2W*
CUL 100	*CUL 114*	*CUL 210**	*(CUL 115 or*	*CUL 174****
*CUL 110***	*CUL 150*	*CUL 228**	*CUL 124)*	*(CUL 125 or*
CUL 118	*CUL 151*		*CUL 224*	*CUL 227 or*
CUL 120	*CUL 220*		*CUL 230*	*CUL 250*)*
CUL 121			*CUL 231*	

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Culinary and Hospitality Management (APCULD)

This program prepares students for a career as a professional culinarian in a restaurant, hospitality, or institutional setting. Culinary Arts professionals have a variety of responsibilities that may include supervising and coordinating the activities of food service workers or dining room employees, planning menus, estimating daily or weekly needs, ordering and maintaining inventories of supplies and equipment, and keeping records of meals served. The program also provides a foundation for continued culinary arts studies at a four-year college and for chef certification through the American Culinary Federation (ACF).

Articulation: Concordia University, BA degree, Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Washtenaw Community College

SCHOOL OF INFORMATION TECHNOLOGY

The School of Information Technology gathers the diverse areas that make up the computer technology of today. From basic programming languages to systems development through networking, these programs provide the core of information technology. Develop skills in computer forensics or learn how to run a successful e-business, the growing field of applied information technology is waiting for you.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

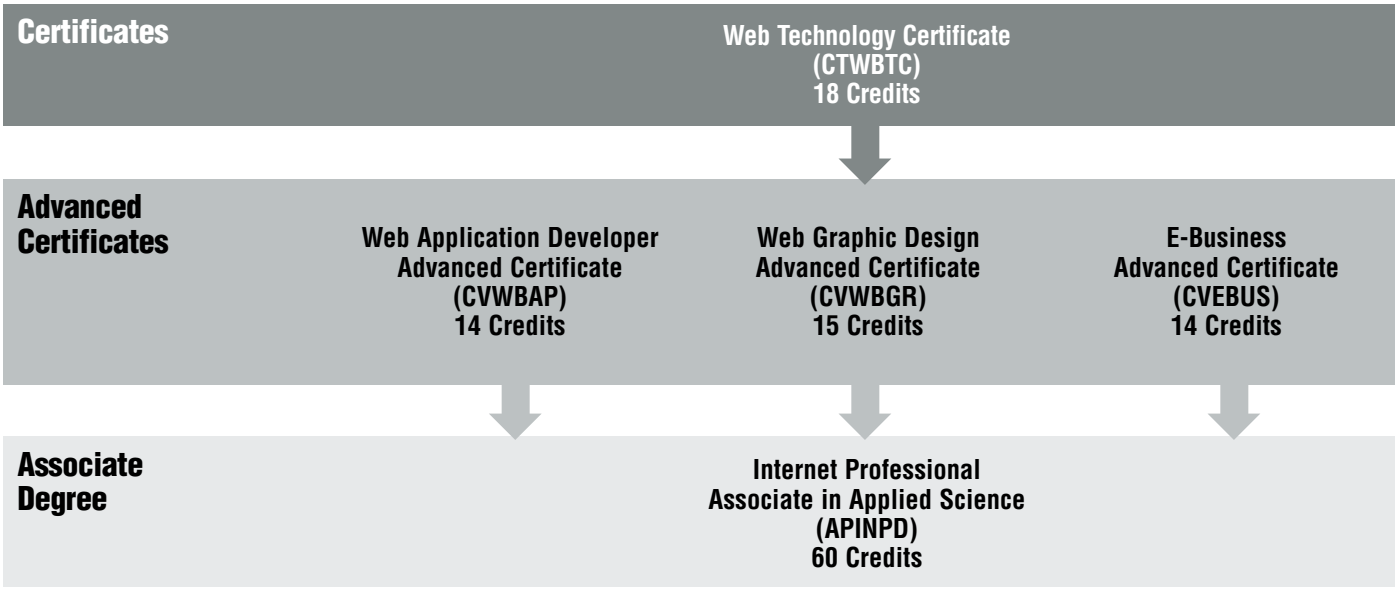
After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

INTERNET PROFESSIONAL

Join the web development industry through the completion of these certificates and degree.



Web Technology (CTWBTC) — Certificate

Major/Area Requirements		(18 credits)
INP 150	Web Coding I	3
INP 152	Web Graphics I	3
INP 153	Designing User Experience I	3
INP 170	Web Coding II	3
INP 182	Web Graphics II	3
INP 203	Designing User Experience II	3
Minimum Credits Required for the Program:		**18**

Web Technology (CTWBTC)

This program is designed for students interested in the Web development industry. Students will create standards-compliant, accessible, and usable Web interfaces that meet both user and client needs. Effective Web graphic design, user experience, and coding are stressed. Students will also learn the process of Web development, from conception to product delivery.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: A high school course or equivalent course in basic computer skills, including use of the Internet.

E-Business (CVEBUS) — Advanced Certificate

Major/Area Requirements		(14 credits)
BMG 155	Business on the Internet	3
BMG 215	Planning an E-Commerce Business	3
INP 190	Web Project Management	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2
Minimum Credits Required for the Program:		**14**

E-Business (CVEBUS)

This program is designed for students interested in e-business. Courses focus on business and technical aspects of e-commerce and Web applications, as well as the fundamentals of project management. Students will have the opportunity to work with a real client and will also develop their portfolio Web sites as part of this program. Successful completion of the Web Technology Certificate is a prerequisite for enrolling in the E-Business Advanced Certificate.

Program Admission Requirements: Students must complete the Web Technology Certificate or have significant industry experience prior to starting this certificate.

Web Application Developer (CVWBAP) — Advanced Certificate

Major/Area Requirements		(14 credits)
INP 271	Web Coding III	3
INP 275	Web Database	3
INP 281	Web Coding IV	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2
Minimum Credits Required for the Program:		**14**

Web Application Developer (CVWBAP)

This program is designed for students interested in Web application development and programming. Courses focus on the knowledge and skills necessary for creating database-enabled applications, dynamic content, and interactive Web sites. Students will have the opportunity to work with a real client and will also develop their portfolio Web sites as part of this program. Successful completion of the Web Technology Certificate is a prerequisite for enrolling in the Web Application Developer Advanced Certificate.

Program Admission Requirements: Students must complete the Web Technology Certificate or have significant industry experience prior to starting this certificate.

Web Graphic Design (CVWBGR) — Advanced Certificate

Major/Area Requirements		(15 credits)
GDT 270	Web Site Design	4
INP 176	Web Animation I	3
INP 212	Web Graphics III	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2
Minimum Credits Required for the Program:		**15**

Web Graphic Design (CVWBGR)

This program is designed for students interested in the creative aspects of Web development, including interface design and interactive media. Courses focus on the knowledge and skills necessary for employment as a Web graphic designer or production artist. Students will have the opportunity to work with a real client and will also develop their portfolio Web sites as part of this program. Successful completion of the Web Technology Certificate is a prerequisite for enrolling the Web Graphic Design Advanced Certificate.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must complete the Web Technology Certificate or have significant industry experience prior to starting this certificate.

Internet Professional (APINPD) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)*	3-4
Speech	Elective(s)**	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**If transferring, choose ENG 111.*
***If transferring, choose COM 101.*

Major/Area Requirements		(28 credits)
INP 150	Web Coding I	3
INP 152	Web Graphics I	3
INP 153	Designing User Experience I	3
INP 170	Web Coding II	3
INP 182	Web Graphics II	3
INP 203	Designing User Experience II	3
Elective	Restricted Electives: CIS 265, CPS 115, CPS 185, CPS 276, CPS 293, GDT 112, GDT 139, INP 190, INP 253, INP 276, INP 285***	10

****After completing course requirements and a program option, students will need to complete 6-10 additional credits from the restricted electives list to reach a minimum of 60 credits.*

Minimum Option Credits Required for the Program: 14

Complete one of the three Internet Professional Options listed below. Check course prerequisites and meet with an INP advisor to determine the best sequence for taking courses.

Internet Professional Options

E-Business (EBUS)		(14 credits)
BMG 155	Business on the Internet	3
BMG 215	Planning an E-Commerce Business	3
INP 190	Web Project Management	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2

Web Application Developer (WBAP)		(14 credits)
INP 271	Web Coding III	3
INP 275	Web Database	3
INP 281	Web Coding IV	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2

Web Graphic Design (WBGR)		(15 credits)
GDT 270	Web Site Design	4
INP 176	Web Animation I	3
INP 212	Web Graphics III	3
INP 290	Web Design Practicum	3
INP 295	Professional Practices	2

Minimum Credits Required for the Program: 60

Notes: Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Internet Professional (APINPD)

This is a comprehensive, rigorous program for students interested in a career in the Web development industry. Coursework prepares students for employment as Web developers, with options to specialize in Web application development, Web graphic design, and e-business. Students will have the opportunity to work with a real client and will also develop their portfolio Web sites as part of this program. Completion of the Web Technology Certificate and one of the related advanced certificates is required in order to complete the Internet Professional Associate in Applied Science Degree.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Continuing Eligibility Requirements: For successful continuation in the program, a minimum grade of "C-" is required for all INP courses.

NETWORKING

Develop and manage computer networks as a network administrator/engineer.

Certificates

Computer Systems Technology Certificate (CTCSTC) 17 Credits

Advanced Certificates

Computer Networking Academy I Advanced Certificate (CVCNA1) 16 Credits

OR

Computer Networking Operating Systems I Advanced Certificate (CVCNO) 14 Credits

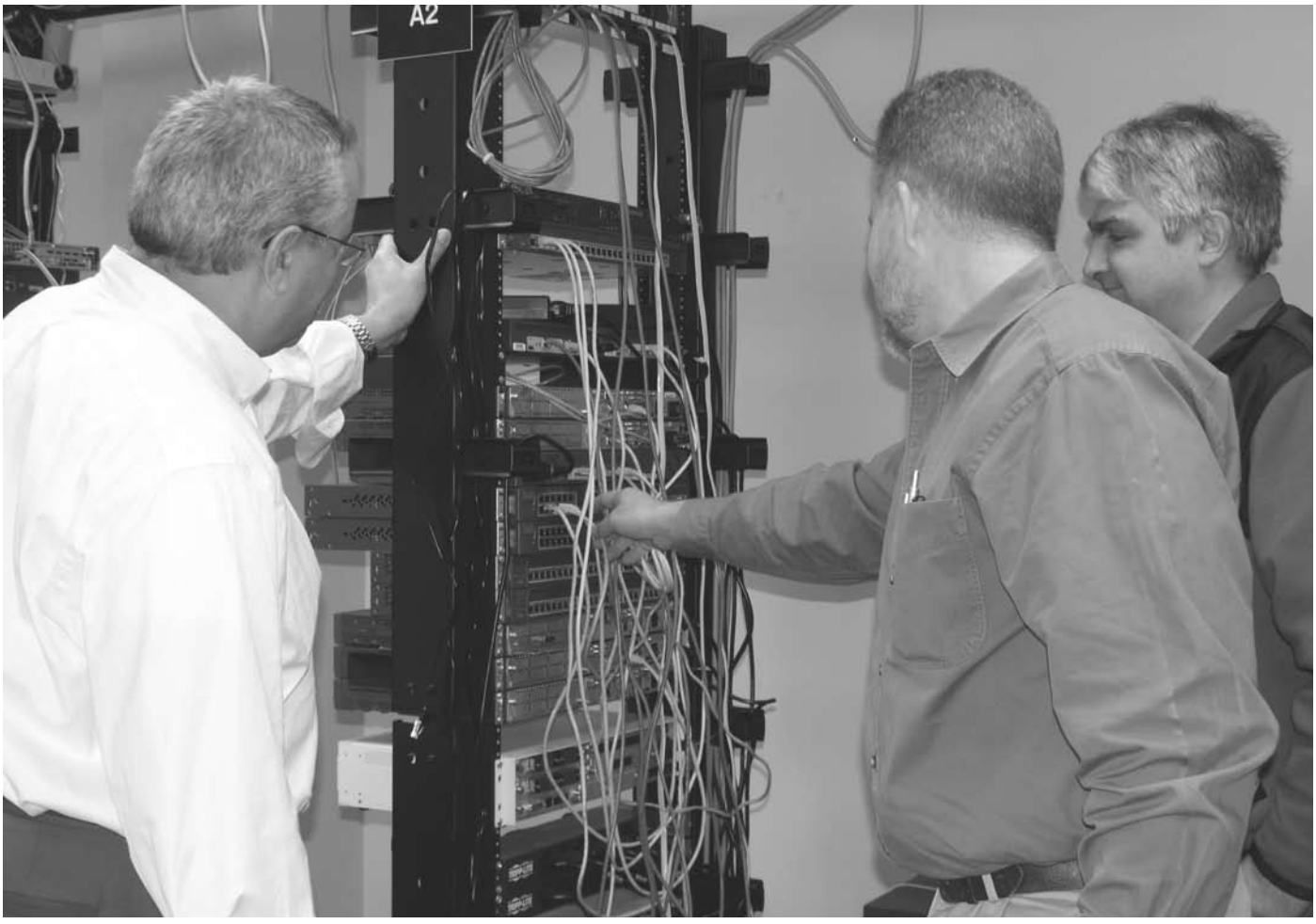
Associate Degree

Computer Networking Associate in Applied Science (APCNTM) 60 Credits

Post-Associate Certificate

Computer Networking Academy II Post-Associate Certificate (CPCNA2) 16 Credits

Other options: See School of Advanced Manufacturing Systems



Computer Networking Academy I (CVCNA1) — Advanced Certificate

Major/Area Requirements		(16 credits)
CNT 206	Internetworking I - Fundamentals	4
CNT 216	Internetworking II - Routers	4
CNT 226	Internetworking III - Switches	4
CNT 236	Internetworking IV - WANs	4
Minimum Credits Required for the Program:		**16**

Computer Networking Academy I (CVCNA1)

This Cisco Networking Academy program prepares students for a job as a network technician where they will install, configure, and troubleshoot Local Area Networks under the supervision of a network administrator. The focus is placed on cabling systems and internetworking hardware. It also gives students the knowledge they'll need to pass the Cisco Certified Network Associate Examination.

Program Admission Requirements: Students must complete the Computer Systems Technology (CTCSTC) Certificate with a GPA of 2.0 or better or have equivalent industry experience to be admitted into the program.

Computer Networking Operating Systems I (CVCNO) — Advanced Certificate

Major/Area Requirements		(14 credits)
CNT 201	Administering Microsoft Windows XP Professional	3
CNT 211	Administering and Managing Microsoft Windows Server	4
CNT 221	Implementing a Windows Server 2003 Network Infrastructure	3
CNT 224	Microsoft ISA Administration	4
Minimum Credits Required for the Program:		**14**

Notes:
This program is designed to be completed in a two semester time frame.

Computer Networking Operating Systems I (CVCNO)

This program lays a foundation in preparation for a profession as a Microsoft Certified Systems Administrator (MCSA) where students will install, configure, and troubleshoot Microsoft client-server networks. The program is designed to deploy and manage Windows 2003/XP components in real life situations. Installing, configuring, testing, managing, monitoring, and troubleshooting of the Windows 2003/XP systems are all emphasized. Most importantly, specific activities are tested out on workstations to insure they work just as in a real business environment. The program is for both those who are working towards Microsoft certifications i.e., MCSA, MCSE and those who may already have the certifications and want to learn how to implement these technologies. Individuals who have an interest in learning Windows 2003/XP technologies are also welcome.

Program Admission Requirements: Completion of the Computer Systems Technology Program (CTCSTC) or CST 150 and CST 225 with a minimum grade of "C", passing the COMPTIA certification, or equivalent industry experience.

Computer Networking (APCNTM) — Associate in Applied Science Degree

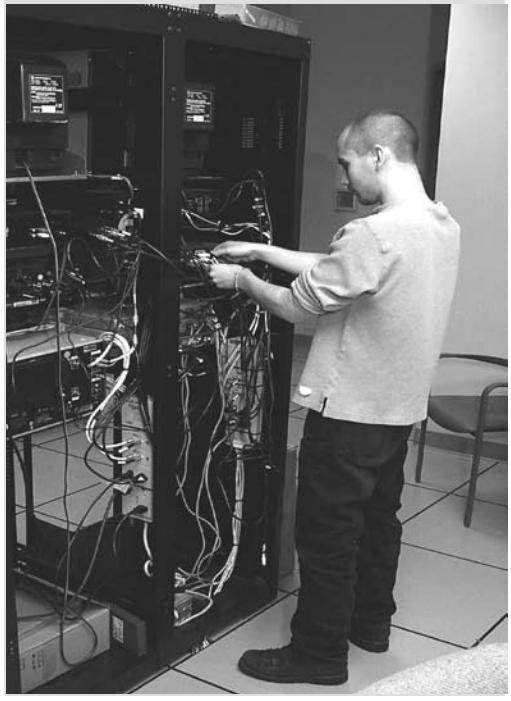
General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Major/Area Requirements		**(42 credits)**
	Complete the Computer Systems Technology Certificate (17 credits).	
CST 118	MS Command Line Fundamentals	2
CST 150	Computer Systems Technology I	5
CST 155	Computer Systems Technology II	5
CST 225	PC Networking	3
ELE 174 or	ELE Co-op Education I	
ELE 299	Customer Relations	2
Elective	Complete the Computer Networking Academy I Advanced Certificate (16 credits).CNT 206, CNT 216, CNT 226, and CNT 236	
	or	
Elective	Complete the Computer Networking Operating Systems I Advanced Certificate (14 credits).CNT 201, CNT 211, CNT 221, and CNT 224	14-16
CIS 121	Linux/UNIX I: Fundamentals	3
CPS 120	Introduction to Computer Science	3
Elective	Complete 1-5 additional credits to bring the total to 60 credits	5
Minimum Credits Required for the Program:		**60**

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Computer Networking (APCNTM)

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. Students can earn an Associate in Applied Science Degree in Computer Networking by completing the requirements listed.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.



Computer Networking Academy II (CPCNA2) — Post-Associate Certificate

Major/Area Requirements		(16 credits)
CNT 246	Advanced Routing Configuration	4
CNT 256	Remote Access Networks	4
CNT 266	Multi-Layer Switching	4
CNT 276	Network Troubleshooting	4
Minimum Credits Required for the Program:		**16**

Computer Networking Academy II (CPCNA2)

This Networking Academy program provides students with the advanced skills needed for a job as a network administrator/engineer, where they will design, install, configure, and troubleshoot Local and Wide Area Networks. The focus is placed on internetworking hardware. It also prepares students to pass the Cisco Certified Network Professional Examinations.

Program Admission Requirements: Students must complete the Computer Networking Associate degree program (APCNTM) with a GPA of 2.0 or better to be admitted into the program.

Learn the foundation of computer programming or specialize in a programming language through these programs.

Certificates

- Foundations of Computer Programming Certificate (CTFCP) 12 Credits

Advanced Certificates

- .Net Programming Advanced Certificate (CVNETP) 12 Credits
- Java Developer Advanced Certificate (CVJAVA) 11 Credits
- Object-Oriented Programming with C++ Advanced Certificate (CVOPC) 11 Credits

Associate Degree

- Computer Programming Associate in Applied Science (APCOMP) 61 Credits

Other options: Mathematics and Computer Science Associate in Science Degree – See Transfer and University Parallel Programs

Foundations of Computer Programming (CTFCP) — Certificate

Major/Area Requirements		(12 credits)
CIS 110	Introduction to Computer Information Systems	3
CPS 120	Introduction to Computer Science	3
CIS 117 or	Windows Operating System	
CIS 121	Linux/UNIX I: Fundamentals	2-3
CPS 161 or	An Introduction to Programming with Java	
CPS 171 or	Introduction to Programming with C++	
CPS 185	Introduction to Visual Basic .Net Programming	4
Minimum Credits Required for the Program:		**12**

Foundations of Computer Programming (CTFCP)

Foundations of Computer Programming provides skills for students who wish to develop the strong foundation required to become a computer programming professional. The student will be introduced to computer science programming logic, as well as developing algorithms to solve programming problems. In addition, students will acquire an understanding of the impact of information systems and information technology on the business, industrial, and other environments in which they will work as programmers. Successful completion of the courses in this program allows students to continue their study into the advanced certificate level: Object-Oriented Programming with C++ and Java Developer.

Program Admission Requirements: Students must have Academic Math Level 4.

.Net Programming (CVNETP) — Advanced Certificate

Major/Area Requirements **(12 credits)**

CPS 161 or	An Introduction to Programming with Java	
CPS 171 or	Introduction to Programming with C++	
CPS 185	Introduction to Visual Basic .Net Programming	4
CPS 293	C# .NET	4
CPS 295	Advanced C#.Net and ASP.Net	4

Minimum Credits Required for the Program: **12**

Notes:
The following sequence of courses is recommended. Please check course descriptions for pre- and co-requisites:

I	*II*	*III*
CPS 161 or CPS 171 or CPS 185	*CPS 293*	*CPS 295*

.Net Programming (CVNETP)

This program prepares students for a job as a developer of graphical user interface programs on a PC. It is intended for students who need to acquire skills in Windows application development in Visual Basic and for students who wish to acquire skills in programming dynamic Web pages. The program also gives students skills that can be applied to the related jobs of programmer/analyst, Windows programmer, PC programmer, and Web programmer.

Program Admission Requirements: Completion of the Foundations of Computer Programming Certificate with a GPA of 2.0 or better.

Java Developer (CVJAVA) — Advanced Certificate

Major/Area Requirements **(11 credits)**

CIS 278 or	Java Server Programming	
CIS 279	XML Programming	4
CIS 288	Systems Analysis and Design	3
CPS 261	Programming Data Structures in Java	4

Minimum Credits Required for the Program: **11**

Notes:
Suggested course sequence:

I	*II*
CIS 278 or CIS 279	*CPS 261 CIS 288*

Java Developer (CVJAVA)

This program gives students advanced skills in developing Java programs. These courses are intended for students who already have a background in programming and who need to acquire skills in Java application development. The program also gives students skills that can be applied to the related jobs of programmer/analyst or Web programmer. Prior course work or experience in using HTML to compose Web pages is helpful.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Completion of the Foundations in Computer Programming Certificate with a GPA of 2.0 or better. Completion of the following course with a grade of "C" or better: INP 150 Web Coding I or equivalent experience CPS 161 An Introduction to Programming with Java.

Object-Oriented Programming with C++ (CVOPC) — Advanced Certificate

Major/Area Requirements **(11 credits)**

CIS 288	Systems Analysis and Design	3
CPS 271	Object Features of C++*	4
CPS 272	Data Structures with C++	4

Minimum Credits Required for the Program: **11**

Notes:

The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	*I*
CIS 288 CPS 271	*CPS 272*

Object-Oriented Programming with C++ (CVOPC)

This program prepares students for jobs as a computer programmer where they will write code and develop applications utilizing object-oriented programming techniques. Students will also develop skills that can be applied to the related jobs of programmer/analyst and software architect.

Program Admission Requirements: Completion of the Foundations of Computer Programming Certificate with a GPA of 2.0 or better. Completion of CPS 171, Introduction to Programming with C++ with a minimum grade of "C" or better.

Computer Programming (APCOMP) — Associate in Applied Science Degree

General Education Requirements		(19 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
MTH 169 or	Intermediate Algebra	
MTH 176 or	College Algebra	
MTH 181	Mathematical Analysis I*	4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)**	3

Major/Area Requirements		(22 credits)
CIS 110	Introduction to Computer Information Systems	3
CIS 117	Windows Operating System	2
CIS 121	Linux/UNIX I: Fundamentals	3
CIS 221	Linux/UNIX Programming and Scripting I	3
CIS 282	Relational Database Concepts and Application	3
CIS 288	Systems Analysis and Design	3
ENG 245	Career Practices Seminar	2
Elective	Complete one course from: CIS 174, CIS 238, CIS 265, CIS 286, or INP 140	3-4

Required Support Courses		(9 credits)
BMG 200	Human Relations in Business	3
BMG 106 or	Legal Basics in Business	
BMG 155	Business on the Internet	3
Elective	Complete additional credits as free electives to bring the program total to a minimum of 60 credits.	3

Minimum Option Credits Required for the Program: 11

Continued on next page

Computer Programming (APCOMP)

This program prepares students for entry-level or trainee computer programmer positions, where they will work with a systems analyst in an applications environment to support information processing functions. The program also gives students the opportunity to focus their program in a particular discipline by choosing from a list of elective courses covering topics such as UNIX, Visual Basic programming, and object-oriented programming, among others.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, BBA degree and several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet. edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students need one semester of high school word processing and spreadsheets or CIS 100 or permission of program advisor to enroll in CIS 110.

Computer Programming (APCOMP) — Associate in Applied Science Degree

Continued from previous page

Complete the required courses in one of the following program options. Check course prerequisites to determine the sequence for taking courses.

Computer Programming Options

.Net Programming Option (NETP)		**(12 credits)**
CPS 161 or	An Introduction to Programming with Java	
CPS 171 or	Introduction to Programming with C++	
CPS 185	Introduction to Visual Basic .Net Programming	4
CPS 293	C# .NET	4
CPS 295	Advanced C#.Net and ASP.Net	4
Business Computer Programming Option (BCOM)		**(11 credits)**
ACC 111	Principles of Accounting I	3
CPS 171	Introduction to Programming with C++	4
CPS 276	Web Programming Using Apache, MySQL, and PHP	4
C++ Programming Option (CPLS)		**(12 credits)**
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
Java Programming Option (JAVP)		**(12 credits)**
CIS 278 or	Java Server Programming	
CIS 279	XML Programming	4
CPS 161	An Introduction to Programming with Java	4
CPS 261	Programming Data Structures in Java	4
Minimum Credits Required for the Program:		**61**

Notes:
**MTH 181 satifies the requirements of EMU's Technology Management program.*
***See the EMU Diverse World Requirement list. Students transferring to EMU should see an advisor for additional courses that meet the requirements of EMU's Technology Management program. See also the Computer Science Concentration of the Math and Science Program in the Transfer Section.*
Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Become part of the growing field of computer system security and forensics.

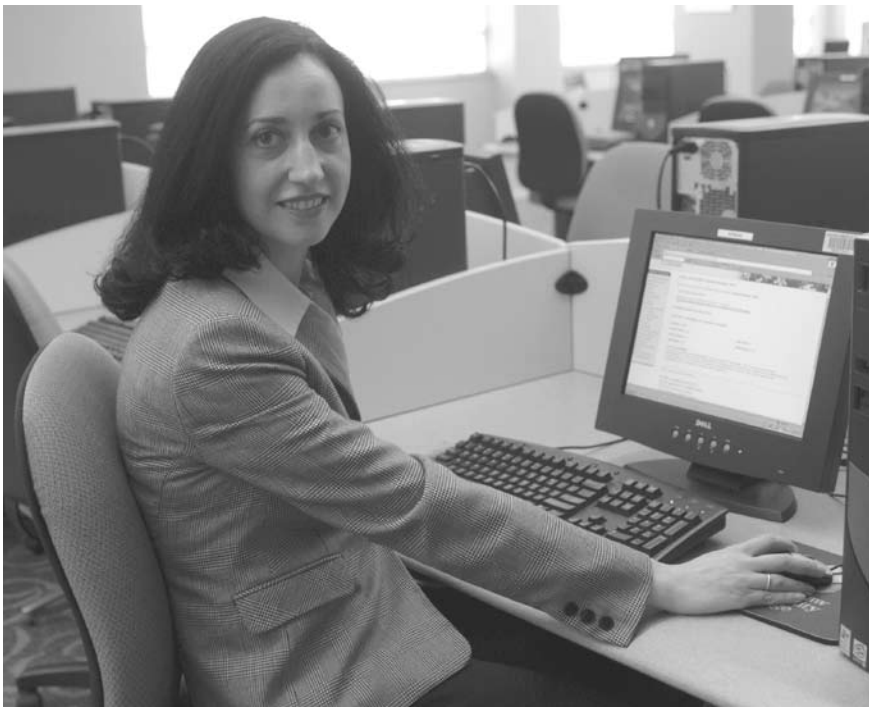
Certificates	**InformationAssurance Certificate (CTIA) 22 Credits**	
Advanced Certificates	**Network Security Advanced Certificate (CVNS) 19 Credits**	**Computer Forensics Advanced Certificate (CVCFC) 14 Credits**
Associate Degree	**Computer Systems Security Associate in Applied Science (APCSS) 67 Credits**	**Computer Forensics Associate in Applied Science (APCF) 60 Credits**

Information Assurance (CTIA) — Certificate

Major/Area Requirements **(22 credits)**

CIS 121	Linux/UNIX I: Fundamentals	3
CNT 211	Administering and Managing Microsoft Windows Server	4
CSS 180	Computer Security for PC's	4
CSS 200	Information Assurance I	4
CSS 205	Information Assurance II	4
CIS 286 or	UNIX Systems Administration	
CNT 221	Implementing a Windows Server 2003 Network Infrastructure	3

Minimum Credits Required for the Program: **22**



Information Assurance (CTIA)

The Information Assurance program provides comprehensive instruction for students who wish to develop a career as a computer security professional, a field within the IT industry and business community in which there is a critical shortage of qualified personnel. With this program, students will develop the required knowledge and skills about information, computer, and network security. The student will become well-versed concerning issues in IT security awareness, data confidentiality, basic network security planning, network security technology, network security organization, and the legal and ethical issues associated with computer systems security. Students receive hands-on training in the methods, techniques, and tools for preventing network attacks. This program is a prerequisite for the Network Security Advanced Certificate program.

Program Admission Requirements: Academic Math Level 3.

Computer Forensics (CVCFC) — Advanced Certificate

Major/Area Requirements		(14 credits)
CJT 208	Criminal Evidence and Procedure	3
CSS 240	High-Technology Crime	3
CSS 270	Computer Forensics I	4
CSS 275	Computer Forensics II	4
Minimum Credits Required for the Program:		**14**

Computer Forensics (CVCFC)

This certificate program is designed to meet the demand in business and industry for computer security professionals who are trained in computer forensics. Students will learn current techniques in data preservation, identification, and extraction from Linux, FAT, and NTFS file systems and will perform forensic analysis of systems using popular examination tool kits. Students will also learn common practices involved in forensic investigations and evidence handling, and will become informed in federal and state privacy, intellectual property, search and seizure, and cyber-crime laws.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Completion of the Information Assurance Certificate program or students must have equivalent knowledge.

Continuing Eligibility Requirements: Students must maintain a grade of "C" or better in the program requirements.

Network Security (CVNS) — Advanced Certificate

Major/Area Requirements		(19 credits)
CNT 251	Designing Windows Security	4
CSS 210	Managing Network Security I	4
CSS 215	Managing Network Security II	4
CSS 220	Network Security Design	4
INP 285	Web Server Security	3
Minimum Credits Required for the Program:		**19**

Network Security (CVNS)

This program provides comprehensive instruction for students who wish to enhance their skills in computer systems security technology and implementation. This program is designed to meet the emerging demand for highly-skilled computer systems security professionals within the information technology industry and business community. This advanced certificate program builds on the concepts introduced in Information Assurance, and provides an in-depth examination of computer security technology with an emphasis on executing a vulnerability analysis of an organization network and preparing a design or network security. The student will be trained to use various tools to manage and secure networks, Windows environments, and Web servers, as well as defense mechanisms for Virtual Private Networks (VPN), Host Intrusion Detection Systems (HIDS), and Network Intrusion Detection Systems (NIDS). In addition, the student will master the concepts, principles, types, and topologies of firewalls including packet filtering, proxy firewalls, application gateways, circuit gateways, and other computer security technology. Students must complete the Information Assurance Certificate program, or have equivalent knowledge, before enrolling in this program.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: CNT 206 Internetworking I - Fundamentals with a minimum grade of "C" or equivalent knowledge. CNT 216 Internetworking II - Routers with a minimum grade of "C" or equivalent knowledge. Completion of the Information Assurance Certificate with a minimum GPA of 2.0 or equivalent knowledge.

Computer Forensics (APCF) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)*	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)**	3

Major/Area Requirements		(32 credits)
CIS 121	Linux/UNIX I: Fundamentals	3
CJT 208	Criminal Evidence and Procedure	3
CNT 201	Administering Microsoft Windows XP Professional	3
CSS 180	Computer Security for PC's	4
CSS 200	Information Assurance I	4
CSS 205	Information Assurance II	4
CSS 240	High-Technology Crime	3
CSS 270	Computer Forensics I	4
CSS 275	Computer Forensics II	4

Minimum Option Credits Required for the Program: 10

Elect either of the following options:

Computer Forensics Options

Network Security (NSEC)		(12 credits)
CNT 206	Internetworking I - Fundamentals	4
CNT 216	Internetworking II - Routers	4
CSS 210	Managing Network Security I	4
	Completion of CSS 215 and CSS 220 is highly recommended for students selecting the Network Security Option.	

Win./Unix Operating System Security (WUNX)		(10 credits)
	Choose 3 courses: CIS 221, CIS 286 CNT 211, CNT 251 or INP 285	10-12

Minimum Credits Required for the Program: 60

Notes:
**Choose one of the following courses: MTH 169, MTH 176, MTH 178, or MTH 181. MTH 181 meets the requirements of EMU's Technology Management program.*
***See the EMU Diverse World Requirement list.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Computer Forensics (APCF)

This degree program is designed to meet the demand in business and industry for computer security professionals who are trained in computer forensics. Students will learn current techniques in data preservation, identification, and extraction from Linux, FAT, and NTFS file systems and will perform forensic analysis of systems using popular examination toolkits. Students will also learn common practices involved in forensic investigations and evidence handling, and will become informed in federal and state privacy, intellectual property, search and seizure, and cyber-crime laws.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Computer Systems Security (APCSS) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)	3-4
Speech	Elective(s)	3
Math	Elective(s)*	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)**	3

Major/Area Requirements		(49 credits)
CIS 121	Linux/UNIX I: Fundamentals	3
CNT 206	Internetworking I - Fundamentals	4
CNT 211	Administering and Managing Microsoft Windows Server	4
CNT 216	Internetworking II - Routers	4
CSS 180	Computer Security for PC's	4
CSS 200	Information Assurance I	4
CSS 205	Information Assurance II	4
CSS 210	Managing Network Security I	4
CSS 215	Managing Network Security II	4
CSS 220	Network Security Design	4
CSS 240	High-Technology Crime	3
INP 285	Web Server Security	3
CIS 286 or	UNIX Systems Administration	
CNT 251	Designing Windows Security	4

Minimum Credits Required for the Program: 67

Notes:
**Choose one of the following courses: MTH 169, MTH 176, MTH 178, or MTH 181. MTH 181 satisfies the requirements of EMU's Technology Management program.*
***See the EMU Diverse World Requirement list.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Computer Systems Security (APCSS)

This degree program is designed to prepare individuals to become highly skilled computer systems security professionals and to train individuals for entry level positions as Data Security Analysts, Systems Security Administrators, and Network Security Administrators. In this program, students will master the latest security technologies and will examine the issues of IT security awareness, data confidentiality, systems and network security planning, network security organization, and the legal and ethical issues associated with computer systems security. Students will also execute a vulnerability analysis of a network and will design security systems and implement a security strategy for a network.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Academic Math Level 3 is required to enroll in MTH 169.

Continuing Eligibility Requirements: Students must maintain a grade of "C" or better in the program requirements

Develop and manage computer systems using universal operating systems.

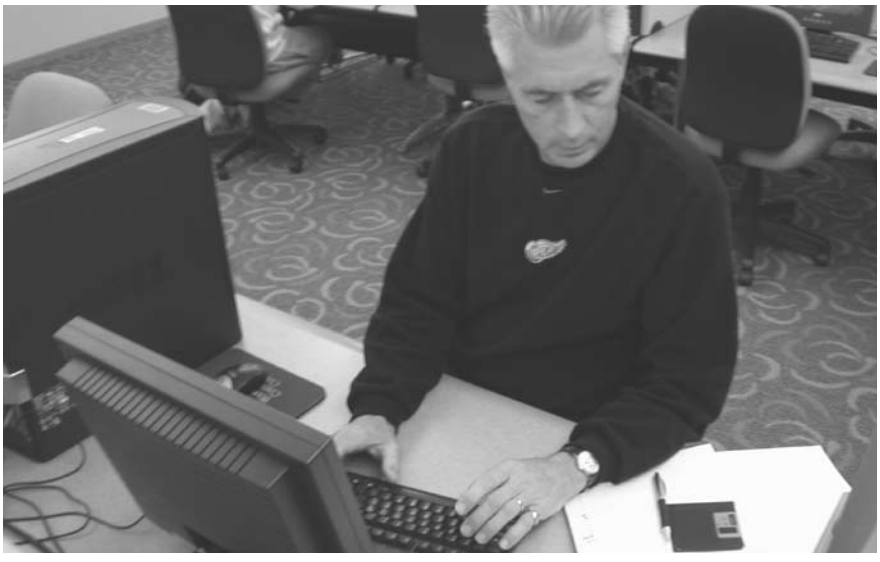
Certificates	**Linux/UNIX Systems I Certificate (CTLUX1) 12 Credits**	
Advanced Certificates	**Linux/Unix Systems II Advanced Certificate (CVLUX2) 9 Credits**	**Web Database Developer Advanced-Associate Certificate (CVWDDV) 14 Credits**
Associate Degree	**Microcomputer System Support Associate in Applied Science (APMSS) 64 Credits**	

Linux/UNIX Systems I (CTLUX1) — Certificate

Major/Area Requirements		(12 credits)
CIS 121	Linux/UNIX I: Fundamentals	3
CIS 206	Linux/UNIX II: Basic System Administration, Networking, and Security	3
CIS 208	Linux/UNIX III: Intermediate System Administration, Networking, and Security	3
CIS 221	Linux/UNIX Programming and Scripting I	3
Minimum Credits Required for the Program:		**12**

Notes:
The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	*II*
CIS 121	*CIS 206*
	CIS 208
	CIS 221



Linux/UNIX Systems I (CTLUX1)

This program introduces students to the Linux and UNIX operating systems and prepares them to safely run their own home servers.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Completion of a CIS (above CIS 100), CPS, or CSS course, or permission of instructor.

Linux/UNIX Systems II (CVLUX2) — Advanced Certificate

Major/Area Requirements **(9 credits)**

CIS 210	Linux/UNIX IV: Advanced System Administration, Networking, and Security	3
CIS 212	Linux/UNIX V: Advanced Topics	3
CIS 222	Linux/UNIX Programming and Scripting II	3

Minimum Credits Required for the Program: **9**

Notes:
The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	*II*
CIS 210	*CIS 212*
CIS 222	

Linux/UNIX Systems II (CVLUX2)

This program is designed to prepare students for jobs as Linux and UNIX System Administrators. It teaches students to install, configure, protect, and manage Linux and UNIX systems. As a universal operating system, Linux is used in varied production environments such as hosting commercial Web sites, and developing computer-generated feature films. Through the experiences provided by this program, students will acquire the knowledge and skills necessary for employment. They will have opportunities to develop specific skills including: configure mail, print, and network services; manage access of users and groups; write shell scripts; perform backups; and implement intrusion detection and system hardening techniques. These skills can be applied to jobs such as computer operator, system administrator, data recovery planner, Web server administrator, and computer security administrator.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Completion of the Linux/UNIX Systems I Certificate.

Web Database Developer (CVWDDV) — Advanced Certificate

Major/Area Requirements **(11 credits)**

CIS 278	Java Server Programming	4
CIS 282	Relational Database Concepts and Application	3
CPS 276	Web Programming Using Apache, MySQL, and PHP	4

Minimum Credits Required for the Program: **11**

Notes:
The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	*II*
CIS 282	*CIS 278*
	CPS 276

Web Database Developer (CVWDDV)

This program gives students advanced skills in developing Web databases and e-commerce applications. It is intended for students with a strong programming background and prior experience with SQL. The program also gives students skills that can be applied to the jobs of e-commerce software architect, e-business strategist, Java software developer, and Web application developer.

Program Admission Requirements: Completion of the Foundations of Computer Programming certificate with a GPA of 2.0 or better. Completion of one of the following courses with a grade of "C" or better:- CPS 161 An Introduction to Programming with Java- CPS 171 Introduction to Programming with C++ - CPS 185 Introduction to Visual Basic .Net Programming

Microcomputer System Support (APMSS) — Associate in Applied Science Degree

General Education Requirements		**(19 credits)**
Writing	Elective(s)	3-4
Speech	Elective(s)	3
MTH 169 or	Intermediate Algebra	
MTH 176 or	College Algebra	
MTH 181	Mathematical Analysis I*	4
Nat. Sci.	Elective(s)	3-4
PSY 100	Introductory Psychology	3
Arts/Human.	Elective(s)**	3
Major/Area Requirements		**(33 credits)**
CIS 100	Introduction to Computers and Software Applications***	3
CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX I: Fundamentals	3
CNT 201	Administering Microsoft Windows XP Professional	3
CST 118	MS Command Line Fundamentals	2
CST 150	Computer Systems Technology I	5
CST 155	Computer Systems Technology II	5
CST 225	PC Networking	3
ELE 299	Customer Relations	2
Elective	Complete one course from: CPS 120, CPS 161, CPS 171, or CPS 185	3-4
Elective	Complete one course from: CIS 174, CIS 221, CIS 265, CIS 286, or COM 102	1-4
Required Support Courses		**(8 credits)**
BMG 200	Human Relations in Business	3
ENG 245	Career Practices Seminar	2
Elective	Complete one course from: BMG 106, BMG 150, BMG 230, or BMG 240	3
Minimum Credits Required for the Program:		**60**

Notes:
**MTH 181 satisfies the requirements of EMU's Technology Management program.*
***See the EMU Diverse World Requirement list.*
****CIS 100 can be substituted with BOS 157, BOS 182, or BOS 183.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Microcomputer System Support (APMSS)

This program prepares students for jobs supporting the end-user in hardware and software matters, and analyzing the user's needs and implementing the application packages best suited for the situation. This program also emphasizes communication skills. Students interested in transferring into Eastern Michigan University's Technology Management program should choose from among the courses listed in the footnotes.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Academic Math Level 3 is required to enroll in MTH 169. One year of high school algebra is recommended. Students must complete a high school course in word processing and spreadsheets or CIS 100 with a grade of "C" or better, or receive permission of the instructor to enroll in CIS 110.

Washtenaw Community College | SCHOOL OF MUSIC AND PERFORMING ARTS

Students learn basic creative and performance skills in music, drama and dance and how they are applied in a professional setting. Whether you are exploring your own talents, coordinating the talents of others, or practicing the techniques you will need to make a living at your craft, the School of Music and Performing Arts provides the fundamentals you need.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates	Music Performance Certificate (CTMPER) 22Credits	Music Production/Engineering Certificate (CTMPRO) 17 Credits

MUSIC AND PERFORMING ARTS

Develop the skills for a career in music performance, engineering or production through these certificate programs.

Music Performance (CTMPER) — Certificate

Complete the required courses in the Guitar, Piano, or Voice concentrations below. Check course prerequisites to determine the sequence for taking courses.

Music Performance Concentrations

Guitar (GUIT)		**(25 credits)**
MUS 140	Music Theory I	3
MUS 237	Finger-Style Blues and Slide Guitar	3
MUS 239	Jazz Guitar I	3
MUS 240	Jazz Guitar II	3
MUS 271	Beginning Classical Guitar	3
MUS 272	Intermediate Classical Guitar	3
MUS 285	Self Management for Working Artists	3
Elective	Complete a minimum of 4 credits: MUS 103, MUS 104, MUS 105 or MUS 106	4
Piano (PIAN)		**(22 credits)**
MUS 140	Music Theory I	3
MUS 216	Blues and Jazz Piano I	3
MUS 217	Blues and Jazz Piano II	3
MUS 251	Classical Piano I	3
MUS 252	Classical Piano II	3
MUS 285	Self Management for Working Artists	3
Elective	Complete a minimum of 4 credits: MUS 103, MUS 104, MUS 105 or MUS 106	4
Voice (VOIC)		**(24 credits)**
DRA 152	Acting for the Theatre I	3
MUS 135	Chorus	1
MUS 140 or	Music Theory I	
MUS 142	Music Theory II	3
MUS 204	Voice I	3
MUS 205	Voice II	3
MUS 280	Voice III - Classical Voice	3
MUS 285	Self Management for Working Artists	3
Elective	Complete a minimum of 5 credits: DRA 208, MUS 104, MUS 105, MUS 106, MUS 136 or MUS 209	5
Minimum Credits Required for the Program:		**22**

Music Performance (CTMPER)

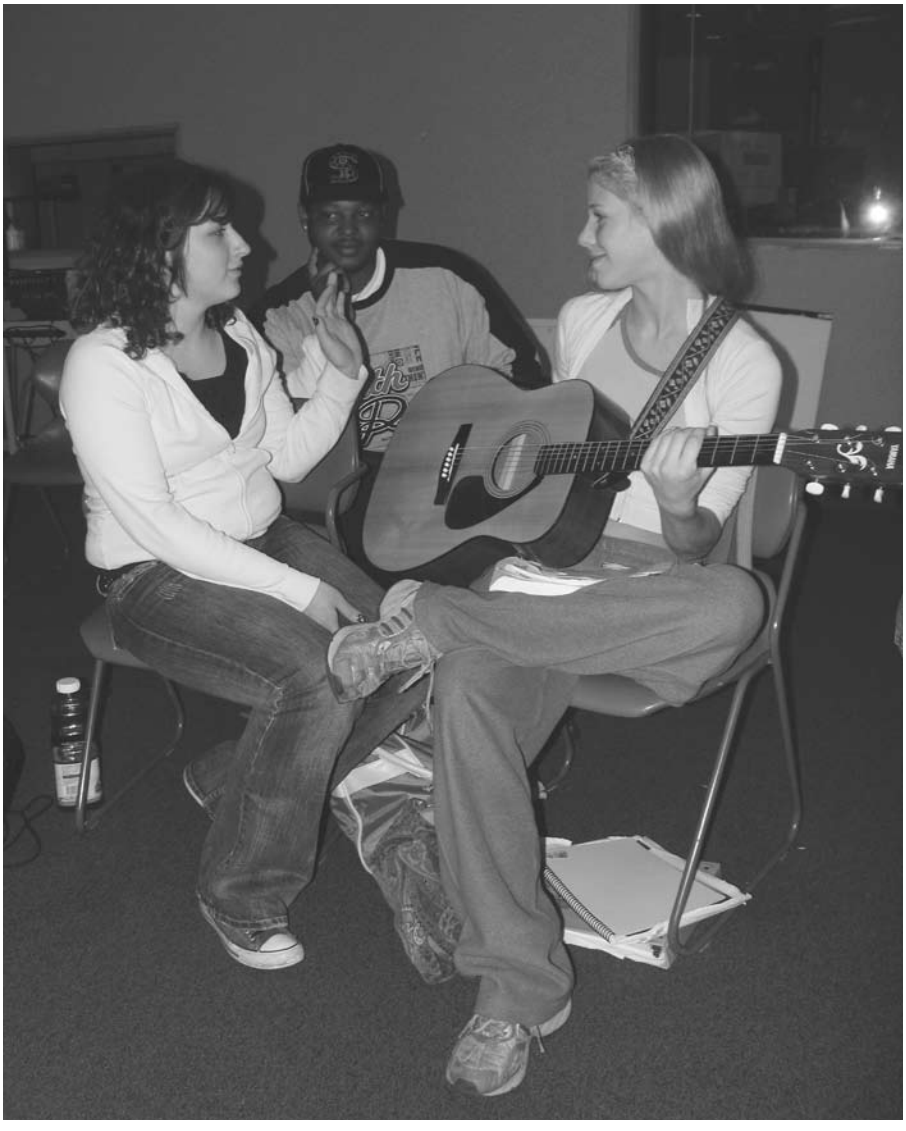
The Music Performance program offers serious music students an opportunity structured to prepare them to be working musicians specializing in guitar, piano, or voice. The programs are designed to develop students' competence in a variety of music performance, production, and promotion skills. The program provides knowledge and skills in such areas as instrument tuning and repair, scales and chords, and understanding the social context of music. Application of performance, delivery, and ensemble skills will be emphasized. An added feature of the program is the emphasis on developing the self-promotion skills that are critical to the success of a working musician. Program completers will be encouraged to be creative in fitting music into their lives, whether as working musicians or skilled amateurs.

Music Production/Engineering (CTMPRO) — Certificate

Major/Area Requirements		(20 credits)
MUS 162	Music Sequencing and Programming	3
MUS 170	Computer Applications in Music	3
MUS 175	Audio Recording Technology I	3
MUS 245	Music Producing and Arranging	2
MUS 248	Sound Reinforcement for Stage	3
MUS 275	Audio Recording Technology II	3
MUS 285	Self Management for Working Artists	3
Minimum Credits Required for the Program:		**20**

Music Production/Engineering (CTMPRO)

This program is designed for students who want to develop skills in music production and engineering that can be applied to jobs in TV, radio, and music studios. It provides the student with the knowledge and skills necessary for employment in jobs such as a music sequencer or sound engineer, operating mixing consoles for a variety of events including band production, concerts, music festivals, and running studios. Students will develop skills in audio recording, computer applications, sound reinforcement, and sequencing and programming. While in the program, students will be affiliated with the International Alliance of Theatrical Stage Employees, and will assist WCC Media Services in producing events for the College.



Washtenaw Community College | SCHOOL OF NURSING AND HEALTH SCIENCES

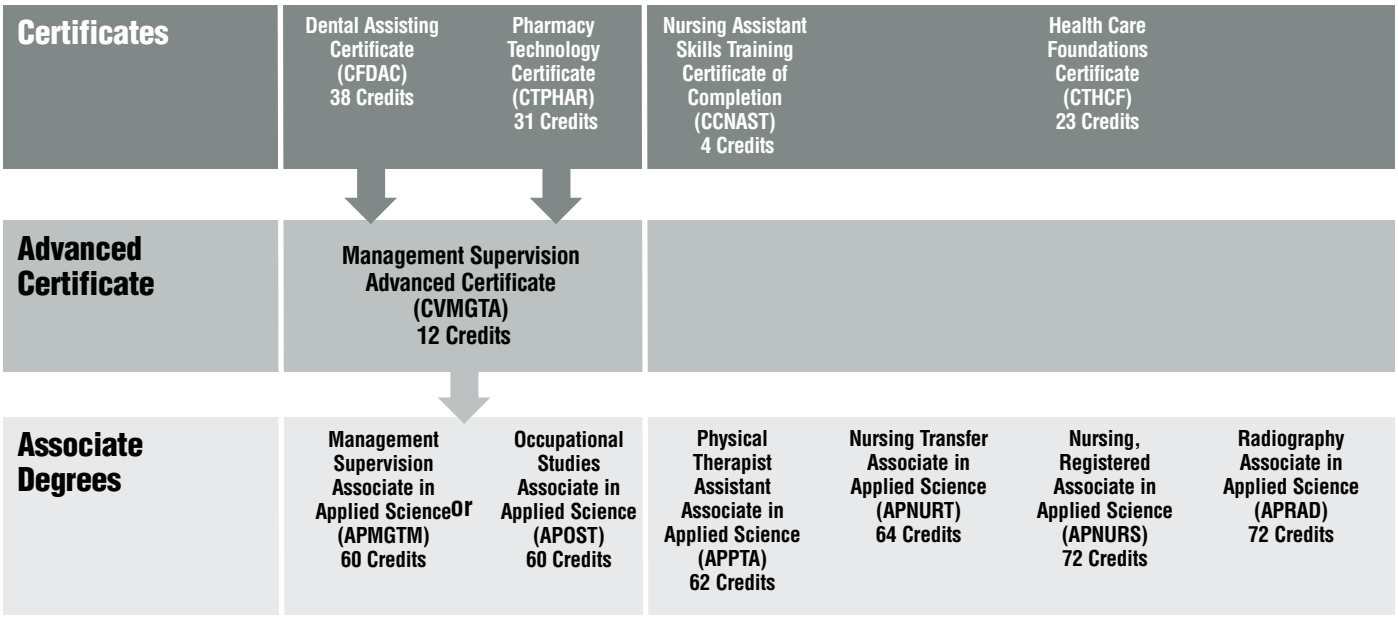
Find your place in the growing field of health care. Whether your interest lies in the traditional field of nursing or the new program in physical therapist assistant the School of Nursing and Health Sciences provides a variety of programs designed to prepare the student for entry-level positions in dental assisting, pharmacy technology, radiography, physical therapist assistant, nursing assistant or professional nursing. The health care foundations certificate provides a starting point for prospective nursing and health science students and provides the general education courses to move from completion of a certificate program into an associate degree program.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements



DENTAL ASSISTING

Prepare for a career as a certified dental assistant through the completion of this program.

Dental Assisting (CFDAC) — Certificate

Pathway I - Option A

First Semester		(14 credits)
DEN 102	Managing Safe Practice in Dentistry	1
DEN 106	Biomedical Science for Dental Assistants	2
DEN 107	Oral Anatomy	2
DEN 108	Dental Radiography	1
DEN 110	Basic Clinical Dental Assisting	4
DEN 112	Dental Materials	4
Second Semester		**(12 credits)**
DEN 118	Preventive Dentistry	2
DEN 120	Oral Diagnosis Theory	1
DEN 128	Dental Radiography Practicum	1
DEN 129	Oral Pathology and Dental Therapeutics	2
DEN 130	Clinical Practice	2
DEN 131	Principles of Dental Specialties	4
Third Semester		**(12 credits)**
DEN 202	Advanced Clinical Practice	2
DEN 204	Advanced Functions	4
DEN 212	Dental Practice Management	3
BMG 207 or	Business Communication	
ENG 111	Composition I*	3-4
Minimum Credits Required for the Program:		**38**

Pathway I - Option B

First Semester		(5 credits)
DEN 102	Managing Safe Practice in Dentistry	1
DEN 106	Biomedical Science for Dental Assistants	2
DEN 107	Oral Anatomy	2
Second Semester		**(4 credits)**
DEN 118	Preventive Dentistry	2
DEN 129	Oral Pathology and Dental Therapeutics	2
Third Semester		**(6 credits)**
DEN 212	Dental Practice Management	3
BMG 207 or	Business Communication	
ENG 111	Composition I*	3-4

Continued on next page

Dental Assisting (CFDAC)

The Dental Assisting Program prepares students for entry-level dental assisting positions in a variety of settings such as private dental offices, dental schools, the military, and dental insurance offices. The curriculum includes the required dental radiography courses that allow graduates to expose dental radiographs in the State of Michigan. The program also prepares students for the Dental Assistant National Board (DANB) examination, which leads to the nationally recognized status of a Certified Dental Assistant (CDA). As a CDA, graduates assist in the treatment of patients. Graduates of the program are also prepared to take the Michigan State Board of Dentistry examination, which gives recognition as a Registered Dental Assistant (RDA). As a RDA in the State of Michigan, graduates can perform specific intra-oral functions generally performed by a dentist.Students may enroll in this program in one of three pathways. Pathway I Option A is the format for the student who is not employed in a dental office. Pathway I Option B is the format for the student who is a new dental assistant employee with less than two years of experience in the dental office. Pathway II (ADAEP) is the advanced standing option for the dental assistant with two or more years of experience as a dental assistant who has passed all three portions of the Dental Assistant National Board (DANB) CDA examination. These pathways are described in detail at http://www.wccnet.edu/health/dental.php.

Program Admission Requirements: A formal application to the program is required. Application packets may be picked up from the WCC Student Connection located on the second floor of the Student Center Building, or downloaded from the WCC Web site www.wccnet.edu/health/dental.php. Admission to the Dental Assisting Program is on a first-come basis for qualified applicants who have met all the admission requirements. A limited number of students are admitted to the Dental Assisting Program. It is strongly advised that students complete the general education requirement of ENG 111 or BMG 207 before entering the Dental Assisting Program.

Requirements for application for Pathway I:

- All applicants are required to successfully complete ACS 1035 Introduction to Online Learning. ACS 1035 requires an incoming minimum cumulative 2.3 GPA
- As part of skill validation prior to clinical placement, all students must demonstrate a proficiency in the English language.
- Applicants must undergo a criminal background check.
- Applicants must possess a valid high school diploma or GED to start the program. Applications will be accepted prior to high school graduation or GED completion.

Continued on next page

Dental Assisting (CFDAC) — Certificate

Continued from previous page

Fourth Semester		**(9 credits)**
DEN 108	Dental Radiography	1
DEN 110	Basic Clinical Dental Assisting	4
DEN 112	Dental Materials	4
Fifth Semester		**(8 credits)**
DEN 120	Oral Diagnosis Theory	1
DEN 128	Dental Radiography Practicum	1
DEN 131	Principles of Dental Specialties	4
DEN 133	Clinical Practice	2
Sixth Semester		**(6 credits)**
DEN 202	Advanced Clinical Practice	2
DEN 204	Advanced Functions	4
Minimum Credits Required for the Program:		**38**

Pathway II (ADAEP) — (38 credits)

Students must successfully pass all three portions of the Dental Assisting National Board (DANB) Certified Dental Assistant (CDA) exam prior to entry. 22

First Semester	**(16 credits)**	
DEN 204	Advanced Functions	4
DEN 230	Alternative Dental Assisting Education Project	9
BMG 207 or	Business Communication	
ENG 111	Composition I*	3-4
Minimum Credits Required for the Program:		**38**

Notes:
**If you are planning to pursue an Associate's degree.*

Dental Assisting Certificate and Degree Completion
Students completing the Dental Assisting courses outlined above will obtain a Certificate in Dental Assisting. Students may also complete an associate degree by using the same core dental assisting courses in addition to completing the general education requirements and electives for an Associate in Applied Science Degree in Dental Assisting.

Continued from previous page

- Overall cumulative high school GPA or college GPA must be a minimum of 2.3.
- Admission to the Dental Assisting Program is contingent upon students declaring that they have specific physical and cognitive abilities. WCC reserves the right to request that applicants successfully demonstrate the specific cognitive and physical abilities related to the Dental Assisting Program.
- Completion of HSC 101 Healthcare Terminology (1 credit) with a grade of C+ (GPA 2.3) or better.
- Pathway I Option B applicants must be employed in a dental office. The dentist/mentor will need to validate skills in the office and sign an agreement form.

Requirements for application for Pathway II:

- All applicants are required to successfully complete ACS 1035 Introduction to Online Learning. ACS 1035 requires an incoming minimum 2.3 GPA
- As part of skill validation prior to clinical placement, all students must demonstrate a proficiency in the English language.
- Applicants must undergo a criminal background check.
- Overall cumulative high school GPA or college GPA must be a minimum of 2.3.
- Applicants must successfully pass all 3 portions of the Dental Assisting National Board (DANB) CDA examination
- Applicants must be employed in a dental office. The dentist/mentor will need to validate skills in the office and sign an agreement form.
- Contact the Dental Assisting Department at 734.973.3332 or dhammel@wccnet.edu.

Continuing Eligibility Requirements: - Program courses are sequential and complemented with appropriate support courses. All dental courses must be completed with a grade of "C" or better in order to graduate from this program.

- A current CPR card is required prior to enrolling in DEN 130 Clinical Practice.
- Completion of satisfactory physical examination must be documented on the WCC Report of Medical History form by the date specified during orientation. This form contains verification of childhood immunizations, negative TB test, and evidence of the Hepatitis B vaccination.
- Students must maintain personal health coverage throughout the program.
- All students must be 18 years of age prior to the start of Dental Radiography DEN 108.

Uncertain of your specific career path in the field of healthcare? This certificate program can provide the essential basic skills to prepare for a specialized program.

Health Care Foundations (CTHCF) — Certificate

Major/Area Requirements **(23 credits)**

BIO 101 or	Concepts of Biology	
BIO 102	Human Biology	4
COM 101 or	Fundamentals of Speaking	
COM 102	Interpersonal Communication	3
ENG 111	Composition I	4
HSC 101	Healthcare Terminology	1
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
MTH 160 or	Basic Statistics	
MTH 166 or	Math for Radiography	
MTH 167 or	Math Applications for Health Science	
MTH 169	Intermediate Algebra	4
PHL 244	Ethical and Legal Issues in Health Care	3
PSY 100	Introductory Psychology	3

Minimum Credits Required for the Program: **23**

Notes:
Computer and Information Literacy Requirement: In addition, students must demonstrate basic computer skills and knowledge. Courses taken at other institutions, work experience, or transfer credit will not satisfy this requirement. Students can fulfill this requirement through either of the following options:

1. *Pass the Computer and Information Literacy test with a score of 70% or higher. Students can take the test two times. If a passing score is not attained, CIS 099 must be taken and passed with a "C" or better.*

or

2. *Pass, with a "C" or higher, specified courses that incorporate the Computer and Information Literacy objectives. These courses might be taken as part of the degree requirements for a particular program.*

The courses include:

a. CIS 099 Computer Literacy;

b. CIS 100 Introduction to Computers and Software Applications;

c. CIS 110 Introduction to Computer Information Systems.

Students should take the Computer and Information Literacy test at their earliest opportunity, preferable upon admittance to the College. The test is administered in the Testing Center. The schedule for testing can be found in the Academic Class Schedule.

Chemistry:
CEM 090 Introductory Chemistry or high school chemistry is a required support course, with a grade of "C" or better.

Health Care Foundations (CTHCF)

This program helps students acquire basic knowledge and skills in math, foundational sciences, healthcare terminology, and general education courses. The certificate fulfills major pre-admission requirements for Dental Assisting, Nursing, Pharmacy Technology, Physical Therapist Assisant, Radiography, and general education requirements for Associate in Applied Science degree.

Note: This is not an occupational program.

NURSING

Uncertain of your specific career path in the field of healthcare? This certificate program can provide the essential basic skills to prepare for a specialized program.

Nursing Assistant Skills Training (CCNAST) — Certificate of Completion

Major/Area Requirements		**(4 credits)**
HSC 100	Basic Nursing Assistant Skills	4
Minimum Credits Required for the Program:		**4**

Nursing Assistant Skills Training (CCNAST)

This state certified three-week program prepares students for employment in a variety of health care settings from nursing homes to hospitals where they will work as a Certified Nurse Aide (CNA). CNA evaluation is mandated for employment in long-term care facilities. Upon completion of the program, individuals will be qualified for multiple job opportunities with good starting salaries. Positions frequently offer flexibility and variety, as well as a sense of self-satisfaction for "making a difference" in a person's health.

Program Admission Requirements: Training takes place in the classroom, lab, and clinical settings within the community. One-hundred percent (100%) attendance is mandatory. There are no make-up days. Students are expected to have their textbook on the first day of class. Program admission requires a minimum age of 17 and documentation of a negative TB status. A criminal background clearance check is required which will be done in the agency/clinical. (Entry assessment testing is required.)

Nursing Transfer (UM School of Nursing) (APNURT) — Associate in Applied Science Degree

First Semester		**(16 credits)**
BIO 111	Anatomy and Physiology - Normal Structure and Function	5
ENG 111	Composition I	4
NUR 122	Nursing as a Societal and Interpersonal Profession	4
PSY 100 or	Introductory Psychology*	
SOC 100	Principles of Sociology*	3
Second Semester		**(16 credits)**
BIO 237	Microbiology	4
MTH 160	Basic Statistics	4
NUR 130	Health Promotion and Risk Reduction	4
CEM 105 or	Fundamentals of Chemistry	
CEM 111	General Chemistry I	4
Third Semester		**(15 credits)**
BIO 212	Pathophysiology: Alterations in Structure and Function	4
COM 200	Family Communication	3
HSC 147	Growth and Development	3
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Theory/ Lab Practice/Clinical	3

Continued on next page

Nursing Transfer (UM School of Nursing) (APNURT)

This WCC honors program prepares students for a smooth transition into the third and fourth years of the University of Michigan (UM) School of Nursing's (SON) Bachelor of Science in Nursing program. Individuals will receive a solid science foundation and begin taking nursing courses during the first two years at WCC. Students will not be eligible for registered nurse (RN) licensure until completion of the UM-SON program. WCC students will graduate with an Associate in Applied Science Degree.

Articulation: University of Michigan, BSN degree. An application and acceptance to the program is required. The application deadline is February preceding each fall admission cycle. Since students are required to follow a pre-determined, full-time course sequence, it is essential that students meet with the Health Programs Counselor before starting any coursework. (Students who wish to transfer to nursing programs at other four-year colleges or universities should check with an advisor or counselor for a transfer guide to that institution.) Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Fifteen (15) students are admitted each fall semester to the Nursing Transfer Program. Students will follow a second-tier admissions process for the Nursing Transfer Program (APNURT). Therefore, students must complete a second application to the APNURT program after being admitted to Washtenaw Community College. Further, the student must meet all admission requirements of both WCC and University of Michigan School of Nursing:

1. Minimum high school GPA of 3.4

Continued on next page

Nursing Transfer (UM School of Nursing) (APNURT) — Associate in Applied Science Degree

Continued from previous page

Fourth Semester **(17 credits)**

CEM 140	Organic Biochemistry	4
NUR 115	Pharmacology	3
NUR 222	Health Assessment Throughout the Lifespan	4
PHL 244	Ethical and Legal Issues in Health Care	3
Elective	Complete an upper level second course in the same social science discipline (PSY or SOC) as the introductory course*	3

Minimum Credits Required for the Program: 64

Notes:
**Students must take two courses in the same discipline.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Continued from previous page

2. SAT scores above 1000 or an ACT composite score above 21
3. Minimum grade of at least a "B" in all high school science courses
4. Required high school work must include:
   - Three units of English
   - Three units of math
   - Two units of laboratory science, including chemistry and biology
   - Four units of foreign language and/or social science and/or laboratory science
   - Four units of other academic courses
5. Criminal background check clearance (refer to Information Release Authorization form in the admission packet)
6. Pass a pre-admission math test with 80 percent or better
7. Signed Abilities Statement on file

Continuing Eligibility Requirements:

1. This transfer program is designed for full-time students.
2. Students are required to submit all health records completed between May 1 and July 31, by July 31 before enrolling in NUR 122, and annually update TB, BLS, and HIPAA training.
3. Students must possess a current Certified Nurse Aide (CNA) certification by the second year (i.e. prior to the NUR 102/103 course sequence).
4. Students are required to have additional criminal background checks and/or fingerprinting prior to the start of a clinical sequence as requested by specific clinical facilities. Failure to receive an acceptable criminal background/fingerprinting check at any time will result in dismissal from the nursing program.
5. In at least two terms in the 12 months prior to transfer into the UM-SON program, the student must:
   - Demonstrate the ability to carry a full-time course load by maintaining a minimum full-time enrollment of 12 credit hours
   - Maintain a 3.0 GPA overall each semester
   - Include one (1) transferable science and one (1) nursing clinical course in each of the two semesters
6. To be admitted to UM-SON, the student must have:
   - A cumulative 3.0 GPA in all prior post-secondary academic experiences
   - A cumulative 3.0 GPA at WCC
   - A minimum grade of 3.0 in each transferable science and nursing clinical courses
   - Graduated from WCC with an Associate in Applied Science Degree

Nursing, Registered (APNURS) — Associate in Applied Science Degree

Major/Area Requirements **(6 credits)**

BIO 111	Anatomy and Physiology - Normal Structure and Function	5
HSC 101	Healthcare Terminology	1

Current C.N.A. certification

BIO 111 and HSC 101 are taken prior to admission to the program.

First Semester **(15 credits)**

ENG 111	Composition I*	4
COM 101 or	Fundamentals of Speaking*	
COM 102 or	Interpersonal Communication*	
COM 200	Family Communication*	3
MTH 167	Math Applications for Health Science*	3
BIO 147	Hospital Microbiology**	1
BIO 212	Pathophysiology: Alterations in Structure and Function*	4

Students who previously took HSC 220 will NOT need to retake the revised BIO 212 course.

Second Semester **(13 credits)**

HSC 147	Growth and Development*	3
NUR 100	Introduction to Nursing - Care of Healthy Older Adults	2
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Theory/Lab Practice/Clinical	3
NUR 115	Pharmacology	3

Third Semester **(12 credits)**

HSC 138	General and Therapeutic Nutrition*	2
NUR 123	Acute Care Nursing I	3
NUR 124	Acute Care Nursing I - Clinical Practice	2
NUR 131	Nursing of the Childbearing Family	3
NUR 132	Nursing of the Childbearing Family - Clinical Practice	2

Fourth Semester **(13 credits)**

NUR 223	Acute Care Nursing II	3
NUR 224	Acute Care Nursing II - Clinical Practice	2
NUR 255	Mental Health Nursing	3
NUR 256	Mental Health Nursing - Clinical Practice	2
PSY 100	Introductory Psychology*	3

Continued on next page

Nursing, Registered (APNURS)

There have been significant changes made to the admission requirements and process for the Nursing program. Please call 734-973-3543 to request a nursing admission packet.

This program prepares students for the National Council Licensure Examination for Registered Nurses (NCLEX-RN) and for challenging and exciting jobs in all settings of health care, from the hospital to home care. Students will gain proficiency in technical aspects of nursing care, such as medication administration, treatments and procedures, and use of medical technology, and they will receive personal satisfaction from their ability to make a difference in someone's life and health. Students will also earn credits that transfer to area RN-BSN completion programs. The Registered Nursing program has both a high number of interested and qualified applicants and a limited number of spaces. As such, this program moves students through a process of application, admission, waitlist, and finally program initiation.

Articulation: Davenport University, BSN degree, Eastern Michigan University, BSN degree and BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: A formal application to the program is required. Applications are available from the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building. Completed and signed applications must be delivered to the Health Admissions Technician. A letter to allow applicants to take the pre-admission math test will be given to the student at this time. An application to the Nursing program will not be accepted until all admission requirements are met. Requirements for application are:

- One year of high school algebra or Academic Math Level 3
- HSC 101 with a minimum grade of "B-" (2.7 on a 4.0 scale)
- BIO 111 with a minimum grade of "B-" (2.7 on a 4.0 scale)
- Current Certified Nurse Aide (CNA) state certification
- Minimum cumulative college GPA of 2.5. Only transcripts that provide an admission requirement course will be used in calculation of the cumulative GPA. If a transcript is submitted for an admission requirement course, the cumulative transcript GPA will be used in a weighted calculation of the cumulative GPA requirement.
- Student declaring that she/he has the specific physical and cognitive abilities detailed in the nursing admission packet. WCC reserves the right to request, before or during the program, that students successfully demonstrate the specific physical and cognitive abilities related to the Nursing program.
- Students receiving an acceptable criminal background check for purposes of identifying a student who could not continue in the program due to a felony conviction (within the last 15 years) or misdemeanor conviction against a vulnerable adult or child (within the last 10 years). Any cost, if indicated, for these checks or for subsequent fingerprinting, are the responsibility of the student.

Continued on next page

Nursing, Registered (APNURS)

Associate in Applied Science Degree

Continued from previous page

Fifth Semester **(13 credits)**

NUR 231	Nursing of Children	3
NUR 232	Nursing of Children - Clinical Practice	2
NUR 261	Advanced Medical-Surgical Nursing/ Transition to RN Nursing	2
NUR 262	Advanced Medical-Surgical Nursing/ Transition to RN Nursing - Clinical Practice	3
PHL 244	Ethical and Legal Issues in Health Care*	3

Minimum Credits Required for the Program: 72

Notes:
**Courses noted may be taken while on the Nursing program waitlist, but not later than the scheduled semester.*

***If you are planning to pursue a BSN degree, it is strongly recommended that you take BIO 237 Microbiology, in place of BIO 147. BIO 147 will not transfer to a four-year university.*

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test in the FIRST SEMESTER of the program.

Continued from previous page

- Demonstrate proficiency in the English language
- Declaration of residency status (note that Washtenaw County residents are given priority in program initiation).
- Pass the preadmission required math test with a minimum score of 80 percent.

Admission to the Program: Student applications are reviewed on a regular basis. Upon acceptance of the application, the student will be placed on the Nursing program waitlist. Students are encouraged to complete required general education courses and other non-nursing courses while on the waitlist until they are notified of their program start date. Minimally, students are required to complete semester one courses before proceeding into the formal nursing program, which begins with their second nursing course semester.

Program Initiation: Each year approximately 80 students move from the waitlist to the formal program initiation. Students are taken from the waitlist in the order in which they were admitted, with priority given to Washtenaw County residents. Following the completion of the fifteen credits of general education and required support courses, students will begin their formal nursing program. This will consist of four (4) semesters during each of which they will take a minimum of twelve (12) occupationally specific credit hours for a total of 47 occupationally specific credit hours. All students must demonstrate proficiency in the English language prior to placement in clinical courses. Please refer to admission packet for further details.

Continuing Eligibility Requirements:

- Program courses are sequential and complemented with appropriate support courses. All courses must be completed with a grade of "C-" or better if taken at WCC, or to receive transfer credit with a grade of 2.0 or higher, in order to graduate from this program.
- Students are required to adhere to rules of the Nursing Code of Ethics published in the Nursing Program Student Handbook.
- Students are required to have additional criminal background checks and/or fingerprinting prior to the start of a clinical sequence as requested by specific clinical facilities. Failure to receive an acceptable criminal background/fingerprinting check at any time, will result in dismissal from the nursing program.
- Students should be aware that the Michigan Board of Nursing may deny a license to an applicant who has been convicted of a crime or is addicted to drugs or alcohol.
- Students in the Nursing program will be required to purchase special uniforms and supplies throughout the duration of the program.
- Students are required to submit health records annually, while in the program.

PHARMACY TECHNOLOGY

Work with a professional pharmacist to meet the medication and customer service needs of individuals in a variety of settings.

Pharmacy Technology (CTPHAR) — Certificate

First Semester		(12 credits)
HSC 101	Healthcare Terminology*	1
PHT 100	Introduction to Pharmacy and Health Care Systems	4
PHT 103	Pharmaceutical Calculations	2
PHT 140	Pharmacy Prescription Processing	2
PHT 150	Pharmacy Operations and Compounding	3
Second Semester		**(8 credits)**
PHT 101	Pharmacology for Pharmacy Technicians	4
PHT 198	Pharmacy Experience	4
Major/Area Requirements		**(11 credits)**
BIO 101	Concepts of Biology	4
ENG 111	Composition I	4
MTH 167 or MTH 169	Math Applications for Health Science / Intermediate Algebra	3-4
Minimum Credits Required for the Program:		**31**

Notes:
**May be taken prior to admission to the Pharmacy Technology program*

Computer and Information Literacy Requirement:
In addition, students must demonstrate basic computer skills and knowledge. Courses taken at other institutions, work experience, or transfer credit will not satisfy this requirement. Students can fulfill this requirement through either of the following options:

1. Pass the Computer and Information Literacy test with a score of 70% or higher. Students can take the test two times. If a passing score is not attained, CIS 099 must be taken and passed with a "C" or better.

or

2. Pass, with a "C" or higher, specified courses that incorporate the Computer and Information Literacy objectives. These courses might be taken as part of the degree requirements for a particular program.

The courses include:

a. CIS 099 Computer Literacy;

b. CIS 100 Introduction to Computers and Software Applications;

c. CIS 110 Introduction to Computer Information Systems.

Students should take the Computer and Information Literacy test at their earliest opportunity, preferable upon admittance to the College. The test is administered in the Testing Center. The schedule for testing can be found in the Academic Class Schedule.

Pharmacy Technology (CTPHAR)

This certificate program prepares students for pharmacy technician entry-level positions in hospitals, retail stores, and other speciality areas of pharmacy practice, where they work under the supervision of a registered pharmacist. Students learn to blend a high attention to detail with patient care. This is a full time program and courses are required to be completed in sequence.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Applying for Admission to the Program: A limited number of students are admitted to the Pharmacy Technology program each year. Application packets may be picked up from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

- Completion and submission of an application for admission to the Pharmacy Technology program
- Completion of all prerequisite courses (Major Area Requirements)
- Date of application to the program
- Residency status (Washtenaw County residents are given priority)

Program Admission Requirements: Applicants must complete the following WCC courses or equivalent transfer college courses with a grade of "C" (minimum GPA of 2.0) or better:

- MTH 167 Math Applications for Health Science or MTH 169 Intermediate Algebra
- BIO 101 Concepts of Biology or higher level college biology course
- ENG 111 English Composition
- Overall cumulative high school GPA or college GPA (if the student has completed 12 college credits or more) must be a minimum of 2.0 or better.

Admission to the Pharmacy Technology program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Pharmacy Technology program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Pharmacy Technology program. A criminal background check will be done on each student prior to program admission. Students will be excluded from acceptance to the program for any felony conviction record and/or any controlled substance conviction.

Continued on next page

Pharmacy Technology (CTPHAR) — Certificate

Continued from previous page

Continuing Eligibility Requirements:

- Program courses are sequential and complemented with appropriate support courses.
- Students must complete all first-semester courses with a grade of "C" (minimum GPA of 2.0) or better to progress to the second semester.
- Students must complete all program courses with a grade of "C" (minimum GPA of 2.0) or better in order to graduate from this program.
- Students must possess a valid high school diploma or GED by the end of the program.
- Students must be at least 18 years of age to graduate from this program.
- Students who have a felony conviction record are not allowed to continue in the program or to take the National Pharmacy Technician Certification Exam administered by the Pharmacy Technician Certification Board. Additional requirements to be completed prior to the experience course PHT 198 include:
- Completion of a satisfactory physical examination, taken at their own expense, and documented on the WCC health form. This form contains verification of childhood immunizations, negative TB test, and evidence of Hepatitis B vaccination or a signed waiver.
- Students must maintain and provide proof of personal health insurance coverage.
- Demonstration of proficiency in the English language prior to placement in the experience course. Please refer to the application packet for further details.

PHYSICAL THERAPY

Work with a physical therapist to provide selected services to patients with a wide variety of conditions.

Physical Therapist Assistant (APPTA) — Associate in Applied Science Degree

General Education Requirements		(22 credits)
ENG 111	Composition I	4
COM 101 or	Fundamentals of Speaking	
COM 102	Interpersonal Communication	3
MTH 160	Basic Statistics	4
BIO 111	Anatomy and Physiology - Normal Structure and Function	5
PSY 100	Introductory Psychology	3
PHL 244	Ethical and Legal Issues in Health Care	3

Major/Area Requirements		(40 credits)
HSC 101	Healthcare Terminology	1
HSC 147	Growth and Development	3
PTA 100	Fundamentals of Physical Therapy	2
PTA 150	Therapeutic Procedures I	3
PTA 160	Therapeutic Procedures II	2
PTA 180	Clinical Kinesiology	4
PTA 195	Introduction to Disease	2
PTA 198	Soft Tissue Management	2
PTA 200	Therapeutic Modalities	4
PTA 220	Therapeutic Exercise I	4
PTA 225	Therapeutic Exercise II	4
PTA 230	Clinical Education I	1
PTA 240	Clinical Education II	2
PTA 250	Clinical Education III	5
PTA 280	Clinical Concepts	1

Minimum Credits Required for the Program: 62

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Physical Therapist Assistant (APPTA)

Physical Therapist Assistants (PTA's) are skilled health care providers who work under the supervision of physical therapists. PTA's will perform components of physical therapy procedures and related tasks selected by a supervising physical therapist. These PTA's assist physical therapists in providing services that help improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease. Duties of the PTA include assisting the physical therapist in implementing treatment programs, conducting treatments and reporting to the physical therapist regarding a patient's response to treatment or activity. Patients may include accident victims and individuals with disabling conditions such as low-back pain, arthritis, heart disease, fractures, head injuries and cerebral palsy.

The Physical Therapist Assistant Program has been granted Candidate for Accreditation Status by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association. Candidacy is not an accreditation status nor does it assure eventual accreditation. Candidate for Accreditation is a pre-accreditation status of affiliation with the Commission on Accreditation in Physical Therapy Education that indicates the program is progressing toward accreditation.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Requirements for application are:

- Academic Math Level 3
- HSC 101 with a minimum grade of "C"
- ENG 111 with a minimum grade of "C"
- BIO 111 with a minimum grade of "B-" (2.7 on a 4.0 scale)
- Completion and documentation of 20 hours of observation in a physical therapy setting. A minimum of 3 hours in 3 different practice settings is required.
- Minimum cumulative GPA of 2.8 for required admission courses listed above.
- Minimum cumulative college GPA of 2.8. Only transcripts that provide an admission requirement course will be used in calculation of the cumulative GPA. If a transcript is submitted for an admission requirement course, the cumulative transcript GPA will be used in a weighted calculation of the cumulative GPA requirement.

The following support courses may be completed prior to admission into the program: COM 101 or 102; HSC 147; MTH 160; PSY 100; and PHL 244.

Continuing Eligibility Requirements: Successful completion of all required courses with a grade of "C" or better.

Prepare for a career as a radiographer, operating various medical imaging equipment.

Radiography (APRAD) — Associate in Applied Science Degree

Major/Area Requirements		**(6 credits)**
BIO 109	Essentials of Human Anatomy and Physiology**	4
RAD 100	Introduction to Diagnostic Imaging**	2
First Semester		**(7 credits)**
MTH 166 or	Math for Radiography*	
MTH 169	Intermediate Algebra***	3-4
RAD 101	Methods in Patient Care	2
RAD 111	Fundamentals of Radiography	2
Second Semester		**(13 credits)**
ENG 111	Composition I*	4
HSC 101	Healthcare Terminology*	1
RAD 110	Clinical Education	2
RAD 112	Radiographic Positioning I	3
RAD 124	Principles of Radiographic Exposure	3
Third Semester		**(11 credits)**
RAD 120	Clinical Education	2
RAD 123	Radiographic Positioning II	3
RAD 125	Radiographic Procedures and Related Anatomy	3
SOC 100	Principles of Sociology*	3
Fourth Semester		**(7 credits)**
RAD 150	Clinical Education	4
RAD 218	Radiation Biology and Protection	3
Fifth Semester		**(14 credits)**
COM 101	Fundamentals of Speaking*	3
PHL 244	Ethical and Legal Issues in Health Care*	3
RAD 215	Radiography of the Skull	2
RAD 217	Clinical Education	3
RAD 235	Pathology for Radiographers	3
Sixth Semester		**(12 credits)**
RAD 190	Physical Foundations of Radiography	3
RAD 222	Pharmacology in Diagnostic Imaging	2
RAD 223	Sectional Anatomy	2
RAD 225	Clinical Education	3
RAD 226	Radiographic Quality Assurance	2
Seventh Semester		**(2 credits)**
RAD 240	Clinical Education	2
Minimum Credits Required for the Program:		**72**

Continued on next page

Radiography (APRAD)

This program prepares students for an entry-level position as a radiographer who operates medical imaging equipment and plays a vital role in healthcare delivery. This full-time, two-year program offers a diverse curriculum that includes comprehensive classroom instruction in conjunction with individualized laboratory work and extensive clinical experience in local hospitals. Upon completion of the program, the student will receive an Associate in Applied Science Degree in Radiography and is eligible to take the national registry examination administered by the American Registry of Radiologic Technologists (ARRT). Employment opportunities exist in hospitals, medical clinics, doctor's offices, and industries. The program is accredited by the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-2901, (312)704-5300.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, several BS degrees, University of Michigan-Flint, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Admission to the Radiography Program is on a first-come basis for all qualified applicants who have met all the admission requirements. A limited number of students are admitted to the Radiography Program each year. Application packets may be obtained from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

- Completion of an application for admission to the Radiography program
- Residency status
- Students who meet the WCC residency policy are admitted from Washtenaw County and surrounding counties in which the program has established clinical affiliates. Contact the Program Director for a current listing of the program clinical affiliates.
- Date of application to the Radiography Program

Note: It is the policy of Washtenaw Community College to screen its students applying to the radiography program for prior criminal convictions as a condition for admission. Individuals who have been convicted of a felony or have an abuse record may not be permitted to take the national registry examination administered by the American Registry of Radiologic Technologists (ARRT). Students with questions should contact the ARRT, (651)687-0048, to inquire about eligibility to take the ARRT examination prior to applying for the Radiography Program. Applicants must complete the following high school courses or equivalent WCC courses with a grade of "C" or better:

- One year of high school biology or BIO 101: Concepts of Biology
- One year of high school algebra or Academic Math Level 3
- Completion of BIO 109 or an equivalent college-level anatomy and physiology course

Continued on next page

Radiography (APRAD) — Associate in Applied Science Degree

Continued from previous page

Notes:
**These courses may be taken before admission to the Radiography program. (It is strongly advised that students complete the general education courses and HSC 101 before entering the Radiography program.) Students may transfer or substitute equivalent general education courses or a healthcare terminology course required for the Radiography program. Contact the program advisor for approval.*

***This course must be taken before being admitted to the program.*

****MTH 169 should be taken for students planning to transfer to a four-year university to complete a Bachelor degree program.*

Students must meet the Computer and Information Literacy Graduation Requirement.

See General Education Graduation Requirements in the WCC Bulletin.

Continued from previous page

- Completion of RAD 100, Introduction to Diagnostic Imaging
- Applicants must have a minimum cumulative 2.0 GPA for college courses
- Admission to the Radiography program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Radiography program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Radiography Program.

Post Admission Requirements: One class is admitted each year in the spring/summer semester. Upon official notification of admission to the Radiography program, students are required to:

- Attend a mandatory Radiography Orientation Session
- Submit evidence of medical insurance
- Submit a current certification in CPR for the Professional Rescuer
- Submit documentation of a physical examination by a licensed physician or nurse practitioner
- Submit immunization records
- Undergo a current criminal background check. Students whose background check reveals a criminal conviction or current criminal charge will be denied admission to the program unless the student has documentation from the AART of their eligibility to take the certification exam.
- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test must be taken before registering for the fall semester of the first year.

Students who fail to comply with the post admission requirements will not be permitted to register for classes and will forfeit their seat in the program.

Continuing Eligibility Requirements:

- Students must pass a physical examination, taken at their own expense, not more than three months before enrolling in the first clinical education course.
- Students must maintain personal health coverage.
- Students must be certified in CPR for the Professional Rescuer to be eligible to enroll in clinical education courses which begin in the fall semester. If they have not received certification through another agency, they can obtain it by completing HSC 131, CPR/AED for the Professional Rescuer and First Aid.
- Program courses are sequential and complemented with appropriate support courses. Students must complete all Radiography (RAD) courses with a grade of "C-" or above.
- Students must complete all general education and support courses with a grade of "C" or better.
- All students must demonstrate proficiency in the English language prior to placement in clinical courses. Please refer to the application packet for further details.

Washtenaw Community College | SCHOOL OF VISUAL ARTS

The eyes say it all in the School of Visual Arts. From the classics of photography and graphic design to the developing fields of digital video and 3-D animation, students can learn a variety of skills leading to multiple career options.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate, and General Education requirements.

Certificates	Photographic Imaging Certificate (CTPHOI) 20 Credits	Digital Video Film Production Certificate (CFVID) 30 Credits	Graphic Design Certificate (CFGDTC) 31 Credits	
Associate Degrees	Photographic Technology Associate in Applied Science (APPHOT) 60 Credits	Digital Video Production Associate in Arts Degree (AADVP) 62 Credits *See University Transfer Section*	Graphic Design Associate in Applied Science (APGRD) 65 Credits	3D Animation Associate in Applied Science (APANIM) 63 Credits

Other options: Interior Design – See School of Construction Technology.

3D ANIMATION

Learn the basics of three-dimensional animation used in videos, games and on the Web. This degree will prepare you for an entry-level position in digital modeling and animation.

3D Animation (APANIM) — Associate in Applied Science Degree

General Education Requirements		**(18 credits)**
ENG 107 or	Technical Writing I	
ENG 111	Composition I	3-4
COM 101	Fundamentals of Speaking	3
MTH 157	Practical Geometry and Trigonometry	3
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Major/Area Requirements		**(45 credits)**
ANI 145	Concept Development for Animation	2
ANI 150	3D Animation I: Modeling	4
ANI 155	Textures and Studio Lighting for Animation	4
ANI 230	Motion and Sound	2
ANI 250	3D Animation II	4
ANI 260	3D Animation III	4
ART 111	Basic Drawing I	4
ART 127	Life Drawing I	4
GDT 140	Photoshop Graphics	4
INP 176	Web Animation I	3
INP 276	Web Animation II	4
VID 276	Advanced Video Graphics I	3
VID 280	DVD Authoring	3
Minimum Credits Required for the Program:		**63**

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

3D Animation (APANIM)

The Digital Animation program prepares students for entry-level positions in digital 3D modeling and animation for use in video, CD-ROM and DVD presentations, broadcast graphics, video game design, kiosks, print (still views), and the Web. Emphasis is on visual perception of 3D form and shape, volume/weight, surface mapping and lighting, basic 3D animation and motion graphic composition for video and internet ready applications.

Program Admission Requirements: High school Macintosh-based course, or GDT 105 with a "C" or better, or instructor permission.

DIGITAL VIDEO

Complete these programs to learn how to create digitized video productions for the Web and other presentation forms.

Digital Video Film Production (CFVID) — Certificate

Major/Area Requirements		(30 credits)
ENG 115	Writing for Visual Media	3
GDT 140	Photoshop Graphics	4
GDT 150	Design for the Internet	4
VID 101	Video Production I	3
VID 102	Video Production II	3
VID 110	Digital Video Editing I	3
VID 112	Digital Video Editing II	4
	Complete two courses: VID 174, VID 276, or VID 280	6-8
Minimum Credits Required for the Program:		**30**

Digital Video Film Production (CFVID)

This program prepares students for entry-level media production positions in organizations where they will create digitized video productions for the Web and other presentation forms that may be used for informational, documentary, instructional, commercial, artistic, or other purposes. The program provides instruction in all facets of video production from program design to hands-on recording through the editing process. Students also gain skills in the use of computer software applications.

Program Admission Requirements: A high school Macintosh-based course, or GDT 105 with a "C-" or better, or instructor permission is required to enroll in GDT software courses.

Digital Video Production (AADVP) — Associate in Arts Degree

General Education Requirements		(28 credits)
ENG 111 and	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	6
HUM 150	International Cinema	3
HUM 160	American Film	3
Major/Area Requirements		**(34 credits)**
INP 140	Building a Web Site	3
VID 101	Video Production I	3
VID 102	Video Production II	3
VID 110	Digital Video Editing I	3
VID 112	Digital Video Editing II	4
VID 203	Web Video	3
VID 255	Video Studio/Green Screen Effects	3
VID 276	Advanced Video Graphics I	3
VID 280	DVD Authoring	3
VID 295	Professional Portfolio	3
VID 200 or	Lighting	
VID 270	Documentary and Reality Videos	3
Minimum Credits Required for the Program:		**62**

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Digital Video Film Production (CFVID)

The Associate in Arts Degree in Digital Video Production provides students with specialized training to develop proficiency in advanced and professional video production. Emphasis is placed on integrating content creation with Web skills.

GRAPHIC DESIGN

From the foundations of visual communication through production techniques, this field allows you to utilize your creative and artistic abilities.

Graphic Design (CFGDTC) — Certificate

Major/Area Requirements		(31 credits)
GDT 100	Typography I	4
GDT 112	Graphic Communication I	4
GDT 127	QuarkXPress for Print Publishing	4
GDT 139	Illustrator Graphics	4
GDT 140	Photoshop Graphics	4
GDT 220	Publication Design	4
GDT 239	Imaging and Illustration	4
INP 140	Building a Web Site	3
Minimum Credits Required for the Program:		**31**

Notes:
**Students must complete GDT 139 and either complete or concurrently enroll in GDT 127 before enrolling in GDT 100. GDT 139 or GDT 140 must be completed before enrolling in GDT 112. See a Graphic Design faculty advisor to assist in planning a program of study.*

Graphic Design (CFGDTC)

This program provides students with entry-level skills in graphic design and allows students to upgrade or expand their present skills. Students will focus on typography and the foundations of visual communication design for both print and on-screen media, and build skills in the most widely used graphic design software applications. This program provides credits towards the Associate in Applied Science Degree in Graphic Design.

Articulation: Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: A high school or college-level Macintosh based course, or GDT 105 with a "C-" or better is required to enroll in GDT software courses.

Graphic Design (APGRD) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
ENG 107 or	Technical Writing I	
ENG 111	Composition I	3-4
COM 101	Fundamentals of Speaking	3
MTH 125 or	Everyday College Math	
MTH 151	Technical Algebra	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
GDT 101	History of Graphic Design	3
Major/Area Requirements		**(47 credits)**
GDT 100	Typography I	4
GDT 112	Graphic Communication I	4
GDT 127 or	QuarkXPress for Print Publishing	
GDT 130	InDesign for Print Publishing	4
GDT 139	Illustrator Graphics	4
GDT 140	Photoshop Graphics	4
GDT 150	Design for the Internet	4
GDT 220	Publication Design	4
GDT 239	Imaging and Illustration	4
GDT 252	Advanced Digital Studio	4
GDT 259	Graphic Communication II	4
GDT 290	Professional Practices	4
INP 152	Web Graphics I	3
Minimum Credits Required for the Program:		**65**

Notes: Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Graphic Design (APGRD)

This program prepares students for a career as a graphic designer. Graphic designers work with writers, publishers, photographers, printers, and other specialists in the field of visual communication design to communicate, inform, instruct, or sell. Students may work on publications, advertising, or the Internet. The program focuses on developing skills in basic design theory, concept development, typography, the major graphic design software, and knowledge of production techniques for print and electronic media as exhibited in a portfolio. Creative and artistic ability is required for careers in graphic design, as well as originality and capacity for experimentation in visual problem solving. Students also need an aptitude for developing strong skills with desktop computers and graphics software programs.

Articulation: College for Creative Studies, BFA degree, Eastern Michigan University, several BS degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Basic proficiency with desktop computers is required to enroll in GDT computer-based courses. Students with no or minimal computer skills are encouraged to take GDT 105, Introduction to Mac Graphics. Note: Graphic Design computer-based courses are taught on Macintosh computers.

PHOTOGRAPHY

Develop skills in composition, processing and presentation needed for a satisfying career in professional photography or as a means of personal expression.

Photographic Imaging (CTPHOI) — Certificate

Major/Area Requirements		(20 credits)
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	4
PHO 127	Digital Photo Imaging I	4
PHO 228	Digital Photo Imaging II	4
PHO 122 or	Darkroom Techniques	
PHO 129	Black and White Digital Imaging	4
Minimum Credits Required for the Program:		**20**

Photographic Imaging (CTPHOI)

This program prepares students for entry-level positions in the photographic industry and is a steppingstone to the Associate Degree in Photographic Technology. Foundation areas of study include: basic camera operation and composition skills; film and digital exposure and processing methods; studio lighting; and printing and presentation techniques.

Photographic Technology (APPHOT) — Associate in Applied Science Degree

General Education Requirements		(18 credits)
Writing	Elective(s)*	3-4
Speech	Elective(s)**	3
Math	Elective(s)***	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)****	3

Major/Area Requirements		(42 credits)
PHO 103	History of Photography	3
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	4
PHO 127	Digital Photo Imaging I	4
PHO 228	Digital Photo Imaging II	4
PHO 230	Portfolio Projects	3
PHO 231	Portfolio Seminar	4
PHO 122 or	Darkroom Techniques	
PHO 129	Black and White Digital Imaging	4
PHO 211 or	Large Format Photography	
PHO 220	Advanced Studio Techniques	3
Elective	Complete an additional 9-12 credits of PHO electives (100 level and above)	9-12

Minimum Credits Required for the Program: 60

Notes:
**ENG 100 or ENG 111 is recommended*
***COM 101 or COM 102 is recommended*
****MTH 151, MTH 157, MTH 160, or MTH 169 is recommended*
*****fulfilled upon completion of major/area requirement PHO 103*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Photographic Imaging (CTPHOI)

This program provides a firm foundation in silver-based and digital photographic technologies. Through a combination of required basic courses and specialized elective courses, the student tailors the program to his or her particular interest in the photographic field. The program prepares the student to work behind the camera, in the darkroom, and on the computer. Students shoot with large, medium, and small format cameras in both color and black and white. Graduates of the program find job opportunities in commercial studios, amateur and professional photo labs, and photojournalism. Students also complete the program to use photography as a means of personal expression, and as preparation for transferring to four-year photography programs.

Articulation: Brooks Institute of Photograpy, BA degree, College for Creative Studies, BFA degree, Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Washtenaw Community College | TRANSFER AND UNIVERSITY PARALLEL PROGRAMS

If your goal is to continue your education toward a baccalaureate degree, then transfer and university parallel programs is the track for you. Complete the first two years of study in a supportive environment with small classes and personal attention.

Broadcast Arts Degree (AABCA)

Business (AABAS)

Criminal Justice (AACJ)

Digital Video Production (AADVP)

Education, Elementary (AAELEM)

Education, Secondary (AASECO)

Exercise Science (ASESCI)

Human Services (AAHUST)

Journalism (AAJOUR)

Liberal Arts Transfer (AALAT)

Math and Science (ASMSAS)

1. Pre-medicine Concentration (BMED)
2. Mathematics/Computer Science Concentration (COMS)
3. Physics/Pre-Engineering Concentration (PHYS)

Technical Writing

Associate in Arts (AATW)

Associate in Science (ASTWRT)

Before beginning any transfer program, a student should consult with an academic advisor or counselor to obtain a program articulation agreement, or a transfer guide. Early in the program, the student should contact an undergraduate advisor at the transfer college for specific admission and curriculum requirements and, if available, an unofficial transfer-credit evaluation.

Copies of articulation agreements and transfer guides are available in the Counseling Office on the second floor of the Student Center Building. Computers with access to the Internet Web sites of four-year colleges and universities also are available there.

MACRAO Agreement

Many of the programs in this section meet the requirements of the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement for transferring general education courses between participating Michigan colleges and universities. If a program meets MACRAO requirements, it will be noted in the program description.

To use the MACRAO agreement, students must have the Student Records Office certify their transcript for MACRAO completion before sending it to the colleges to which they are transferring. Not all four-year colleges and universities participate in MACRAO, and some that do participate have limitations or exceptions to the agreement. A detailed explanation of the MACRAO Agreement and a list of participating colleges can be found on page 70 of this Bulletin.

Articulation Agreements and Transfer Guides

Some transfer programs are based on articulation agreements with other colleges. If a program has an articulation agreement, it will be noted in the program description. Copies of articulation agreements, which provide additional information including admission requirements and the sequence for taking courses at both colleges, are available in the Counseling Office on the second floor of the Student Center Building.

Transfer guides list WCC courses that transfer to specific bachelor degree programs at colleges and universities in Michigan. These guides are provided by the four-year colleges and do not take into consideration the general education and other graduation requirements at WCC. Students who plan to earn associate degrees should work with a counselor or advisor to select courses from their transfer guides that match the requirements at WCC. The Counseling Office has copies of transfer guides for the major four-year institutions in Michigan.

BUSINESS

Designed for students who intent to transfer into a four-year school program in one of the areas of business.

Business (AABAS) — Associate in Arts Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 181 or	Mathematical Analysis I*	
MTH 197	Linear Algebra	4
Nat. Sci.	Elective(s)**	4-5
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Arts/Human.	Elective(s)***	6
Major/Area Requirements		**(24 credits)**
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
BMG 140	Introduction to Business	3
BMG 207	Business Communication	3
BMG 265	Business Statistics	3
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
BMG 106 or	Legal Basics in Business	
BMG 111	Business Law I	3
Required Support Courses		**(6 credits)**
CIS 110	Introduction to Computer Information Systems	3
Elective	Complete one course as a free elective to bring the program total to a minimum of 60 credits.****	3
Minimum Credits Required for the Program:		**60**

Notes:
**MTH 181 is required for EMU's BBA degree.*

***Students transferring to a 4-yr institution should choose a lab-based, MACRAO-approved science course.*

****See the EMU Diverse World Requirement list. A course in logic or ethics (PHL 205 or PHL 250) is strongly recommended.*

*****See an advisor to choose courses that transfer to and meet the requirements of the program and college to which you are transferring.University of Michigan School of Business does not accept business or accounting courses from community colleges. If you wish to transfer to a business major at UM, please see a counselor.*

Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Business (AABAS)

This program prepares students for transfer to a bachelor's of business administration degree program at a four-year college or university, where they will further improve their communication and interpersonal skills while developing a specialty in accounting, economics, finance, management, or some other aspect of business. The program was specifically designed to transfer to Eastern Michigan University. Check with an advisor for information on transferring to other colleges. See the footnotes for transferring to the University of Michigan.

Articulation: Cleary University, BS or BBA degree, Davenport University, Bachelor degree, Eastern Michigan University, BBA degree*, Ferris State University, BS degree, Madonna University, BS degree, Northwood University, BBA degree.

*A minimum cumulative GPA of 2.5 is required for admission to EMU's College of Business. All courses must be completed with a minimum grade of "C" (2.0) to transfer. Contact the College of Business Undergraduate Advising Office at EMU early to have transfer credits reviewed and unofficially evaluated. (734-487-2344 or email amelia.chan@emich.edu). This program meets MACRAO. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements:

- Students must have Academic Math Level 4 to enroll in MTH 181. Two years of high school algebra (Algebra I and Algebra II) are recommended.
- Students should have a working knowledge of applications software or enroll in CIS 100 prior to taking CIS 110.

COMMUNICATION

Prepare to transfer to a four-year school or begin a career in radio and/or other forms of broadcast arts.

Broadcast Arts (AABCA) — Associate in Arts Degree

General Education Requirements		(28 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6
Major/Area Requirements		**(33 credits)**
COM 102	Interpersonal Communication	3
COM 130	Introduction to Mass Communication	3
COM 142	Oral Interpretation of Literature	3
COM 150	Introduction to Radio Production	3
COM 155	Scriptwriting for Broadcast Arts	3
COM 160	Voice and Articulation for Broadcasting	3
COM 170	Advanced Radio Production	3
COM 183	Persuasion	3
COM 225	Intercultural Communication	3
COM 235	Broadcast Arts Practicum	3
COM 240	Broadcast Arts Internship	3
Minimum Credits Required for the Program:		**61**

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Broadcast Arts (AABCA)

The Broadcast Arts program provides training in radio and gives students basic knowledge of radio production, programming, and announcing. The program emphasizes communication skills needed for jobs in a variety of fields, including advertising, public relations, broadcast journalism and program production, and prepares students for transfer to a four-year institution.

EDUCATION

These programs offer the first two years of instruction required to become a certified teacher in the state of Michigan.

Elementary Education (AAELEM) — Associate in Arts Degree

First Semester		**(16 credits)**
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
GEO 101	World Regional Geography	3
PLS 112	Introduction to American Government	3
MUS 140 or	Music Theory I	
MUS 180	Music Appreciation*	3
Second Semester		**(16 credits)**
ENG 226	Composition II	3
GLG 202	Earth Science for Elementary Teachers	3
MTH 148	Functional Math for Elementary Teachers I	4
PSY 100	Introductory Psychology	3
Elective	Complete one course from the following: ENG 181, ENG 214, or ENG 242	3
Third Semester		**(15 credits)**
ENG 240	Children's Literature	3
PSY 251	Education of Exceptional Children	3
CIS 100 or	Introduction to Computers and Software Applications	
CIS 110	Introduction to Computer Information Systems	3
Elective	Complete a minimum of 6 credits in your major or minor area (e.g. language arts, math, science, social studies, etc.)**	6
Fourth Semester		**(15 credits)**
HST 201	United States History to 1877	3
MTH 149	Functional Math for Elementary Teachers II	4
PHY 100	Physics for Elementary Teachers	4
PSY 220	Human Development and Learning	4

Students may dual enroll in FETE 201 at EMU concurrently with enrollment in PSY 220 at WCC.

Minimum Credits Required for the Program: 62

Notes:
**For CMU select MUS 180.*
***See an advisor to select a course that will meet the requirements of the college to which you are transferring.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Elementary Education (AAELEM)

This program prepares students to transfer into an elementary education program at a four-year college or university. The first two years of instruction in a bachelor's degree program in elementary education is covered. The program includes the general education courses used for most elementary education programs in Michigan, that prepare students for the state-mandated basic skills tests. Requirements may vary among colleges so students should obtain the current curriculum from the college to which they are transferring and talk to an undergraduate advisor early in their studies. Curriculum and admission requirements are available on most colleges' Web sites.

Articulation: Ferris State University, BS degree, Eastern Michigan University, BS degree. This program meets MACRAO. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must have Academic Math Level 3 to enroll in MTH 148. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements: Admission requirements for bachelor's degree teacher education programs may vary among colleges. Most require a minimum grade point average of 2.0 for courses to transfer as well as a minimum of 56 to 60 college credits completed and successful completion of the state-mandated basic skills test before applying for admission to the program.

Secondary Education (AASECO) — Associate in Arts Degree

First Semester		**(16 credits)**
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
PLS 112	Introduction to American Government	3
ENG 181 or	African-American Literature	
ENG 214 or	Literature of the Non - Western World	
ENG 242	Multicultural Literature for Youth	3
Elective	Complete one course from: CIS 100, CIS 110, or CPS 120	3
Second Semester		**(16 credits)**
ENG 226	Composition II	3
PSY 100	Introductory Psychology	3
Elective	Complete one course from: ENG 160, ENG 170, ENG 211, ENG 212, ENG 213, ENG 222, ENG 223, ENG 224, SPN 111, SPN 122, FRN 111, FRN 122, GRM 111, or GRM 122	3-5
Elective	Complete one course from: MTH 160, MTH 181, MTH 182, MTH 191, or MTH 197	4-5
Elective	Complete a minimum of 3 credits in a major or minor area.*	3
Third Semester		**(17 credits)**
PSY 251	Education of Exceptional Children	3
Elective	Complete one course from: BIO 101, BIO 102, CEM 105, CEM 111, GLG 100, GLG 114, PHY 105, or PHY 111	4
Elective	Complete one course from: HST 121, HST 122, HST 123, HST 201, or HST 202	3
Elective	Complete a minimum of 7 credits in a major or minor area.*	7
Fourth Semester		**(11 credits)**
PSY 220	Human Development and Learning	4
Elective	Complete a minimum of 7 credits in a major or minor area.*	7

Students may dual enroll in FETE 201 at EMU concurrently with enrollment in PSY 220 at WCC.

Minimum Credits Required for the Program: 60

Notes:
**See an advisor to select courses that will meet the requirements of the college to which you are transferring.*
Students must meet the Computer and Information Literacy Graduation Requirement. See General Education Graduation Requirements in the WCC Bulletin.

Secondary Education (AASECO)

This program prepares students for transfer into a bachelor's degree program in secondary education at a four-year college or university. The program covers the first two years of instruction including the general education courses, used by most secondary education programs in Michigan, which prepare students for the state-mandated basic skills tests. Requirements may vary among colleges. Students should obtain the current curriculum from the college to which they are transferring and talk to an undergraduate advisor early in their studies. Curriculum and admission requirements are available on most colleges' Web sites.

Articulation: Eastern Michigan University, BS degree. This program meets MACRAO. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must have Academic Math Level 3 to enroll in MTH 160. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements: Admission requirements for bachelor's degree teacher education programs may vary among colleges. Most require a minimum grade point average of 2.0 for courses to transfer as well as a minimum of 56 to 60 college credits completed and successful completion of the state-mandated basic skills test before applying for admission to the program.

LAW AND LAW ENFORCEMENT

Considering a career in police work, probation or juvenile criminal justice? This program prepares you for further study in these specialized fields.

Criminal Justice (AACJ) — Associate in Arts Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 102	Interpersonal Communication	3
MTH 160	Basic Statistics	4
Nat. Sci.	Elective(s)*	4-5
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Arts/Human.	Elective(s)*	6

Major/Area Requirements		(30 credits)
CJT 100	Introduction to Criminal Justice	3
CJT 111	Police/Community Relations	3
CJT 120	Criminal Justice Ethics	3
CJT 160	Criminal Justice Constitutional Law	3
CJT 208	Criminal Evidence and Procedure	3
CJT 209	Criminal Law	3
CJT 223	Juvenile Justice	3
CJT 224	Criminal Investigation	3
CJT 225	Seminar in Criminal Justice	3
SOC 100	Principles of Sociology	3

Minimum Credits Required for the Program: 60

Notes:
**See the MACRAO list to make course selections. Transfer students should a select lab-based Natural Science course.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Criminal Justice (AACJ)

This program prepares students for jobs in police work, probation and parole, and juvenile criminal justice. It also gives students the required academic background to enter the Washtenaw Police Academy, the Law Enforcement Certification program run by Washtenaw Community College, as well as credits that transfer into Eastern Michigan University's Criminology and Criminal Justice programs.

Articulation: Davenport University, Bachelor degree, Eastern Michigan University, BA degree and several BS degrees*

*For those interested in pursuing a degree in Criminology and Criminal Justice from EMU, students may take 30 additional credit hours at WCC and transfer a total of 94 credits to EMU towards a Bachelor's Degree (124 hours). The following additional classes are recommended: ANT 201, SOC 207, SOC 250, and PSY 257. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements: Students must have Academic Math Level 3 to enroll in MTH 160. One year of HS algebra is recommended.

LIBERAL ARTS TRANSFER

This program of study can be individualized to meet your needs or the requirements of the transfer college or university.

Liberal Arts Transfer (AALAT) — Associate in Arts Degree

General Education Requirements		(29 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 160 or	Basic Statistics	
MTH 169 or	Intermediate Algebra	
MTH 181	Mathematical Analysis I	4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6
Major/Area Requirements		**(31 credits)**
Elective	Complete 15 credits from the following disciplines: ANT, ART, COM, DAN, ECO, ENG, FRN, GEO, GRM, HST, HUM, MUS, PLS, PSY, SOC, and SPN	15
Elective	Complete a minimum of 16 credits to bring the total credits to 60.	16
Minimum Credits Required for the Program:		**60**

Notes:
**Transfer students should select a lab-based, MACRAO-approved science course.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Liberal Arts Transfer (AALAT)

This program allows students to design a program of study to meet individual needs, and is a good option for students who are undecided about a major, or simply want to explore various areas in the arts and social sciences. This program allows for customization of coursework to meet the requirements of the transfer college or university. A counselor will assist in developing a program of study that meets all of the College's graduation requirements. A counselor can also help students determine interests, career and educational goals, as well as provide transfer and career information.

Articulation: Savannah College of Art & Design, BFA degree, Siena Heights, several BA and BFA degrees. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

EXERCISE SCIENCE

This program prepares the student for further study in the area of exercise science.

Exercise Science (ASESCI) — Associate in Science Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)	3
MTH 160	Basic Statistics	4
BIO 101	Concepts of Biology	4
Soc. Sci.	Elective(s)*	6
Arts/Human.	Elective(s)	6

Major/Area Requirements		(38 credits)
BIO 103	General Biology II	4
BIO 110	Introduction to Exercise Science	3
BIO 111	Anatomy and Physiology - Normal Structure and Function	5
BIO 201	Physiology of Exercise	4
BIO 215	Cell and Molecular Biology	4
BIO 225	Tests and Measurements in Exercise Science	3
CEM 111	General Chemistry I	4
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
MTH 178	General Trigonometry	3
PHY 111	General Physics I	4
PSY 100	Introductory Psychology	3

Minimum Credits Required for the Program: 68

Notes:
**Transfer students should select two (2) MACRAO approved Social Science courses.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Exercise Science (ASESCI)

The Exercise Science program is designed to prepare students for employment at the entry level in health and fitness-related occupations and/or for higher education by training in the sciences that relate to physical activity, health, fitness, nutrition, wellness, and weight control. Completion of the two-year degree will prepare students for the ACSM certification exams for personal trainer and/or health/fitness instructor. The AS degree in Exercise Science from WCC is designed to prepare students for transfer to a four-year institution that offers degrees in sports medicine-exercise science, kinesiology, movement science, and physical education. Individuals that transfer to four-year institutions in these fields (and in some cases go beyond the four-year degree) can be expected to find employment in a wide variety of occupations, including (but not limited to) physician, physician's assistant, physical therapist, physical therapist assistant, research scientist, fitness manager, worksite wellness coordinator, exercise specialist, clinical exercise physiologist, coach, physical education teacher, and other exercise-related positions.

MATH AND COMPUTER SCIENCE

Learn more about Math or Computer Science through this Associate degree program.

Math and Science (ASMSAS) — Associate in Science Degree

General Education Requirements		(31 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 191	Calculus I	5
BIO 101 or	Concepts of Biology*	
PHY 111	General Physics I	4
PSY 100	Introductory Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6

**The COMS concentration requires PHY 111 & PHY 122. The MATH concentration may choose either the BIO or PHY sequence.*

Core Courses		(12 credits)
CPS 171	Introduction to Programming with C++	4
MTH 192	Calculus II	4
BIO 103 or	General Biology II	
PHY 122	General Physics II	4

Minimum Concentration Credits Required for the Program: 22

Complete the requirements for one of the following concentrations. The same course may not be used to meet both a concentration requirement and other program requirements above. Please consult an advisor to select appropriate electives.

Math and Science Concentrations

Computer Science (COMS)		(22 credits)
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
Elective	Take an additional six credits	6

Mathematics (MATH)		(25 credits)
MTH 160	Basic Statistics	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295	Differential Equations	4
Elective	Take an additional nine credits	9

Minimum Credits Required for the Program: 65

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Math and Science (ASMSAS)

This program prepares students to transfer to a four-year college or university to complete a bachelor's degree in biology, chemistry, computer science, math, or physics. The program will give students a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.

Articulation: This program will fulfill MACRAO requirements if, in addition to the courses completed to meet General Education requirements, students complete one additional course in Social and Behavioral Science. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

- Students must have Academic Math Level 7 to begin the math sequence. Two years of high school algebra and one year of high school pre-calculus are recommended to prepare for this program.
- The chemistry, physics, and computer science concentrations require one semester of high school physics or PHY 105 or PHY 111 with a "C" or better to enroll in PHY 211
- A high school computer course or CIS 100 is required to enroll in CIS 110.

PRE-ENGINEERING/PHYSICS

Students utilize this program in preparation for a degree in engineering or physics.

Math and Science (ASMSAS) — Associate in Science Degree

General Education Requirements		(31 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 191	Calculus I	5
BIO 101 or	Concepts of Biology*	
PHY 111	General Physics I	4
PSY 100	Introductory Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6

**The PENG concentration requires PHY 111 & PHY 122.*

Core Courses		(12 credits)
CPS 171	Introduction to Programming with C++	4
MTH 192	Calculus II	4
BIO 103 or	General Biology II	
PHY 122	General Physics II	4

Minimum Concentration Credits Required for the Program: 26

Complete the requirement for the following concentration. The same course may not be used to meet both a concentration requirement and other program requirements above. Please consult an advisor to select appropriate electives.

Math and Science Concentration

Physics/Pre-Engineering (PENG)		(26 credits)
CEM 111	General Chemistry I	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295	Differential Equations	4
PHY 211	Analytical Physics I	5
PHY 222	Analytical Physics II	5

Minimum Credits Required for the Program: 69

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Math and Science (ASMSAS)

This program prepares students to transfer to a four-year college or university to complete a bachelor's degree in biology, chemistry, computer science, math, or physics. The program will give students a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.

Articulation: This program will fulfill MACRAO requirements if, in addition to the courses completed to meet General Education requirements, students complete one additional course in Social and Behavioral Science. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

- Students must have Academic Math Level 7 to begin the math sequence. Two years of high school algebra and one year of high school pre-calculus are recommended to prepare for this program.
- The chemistry, physics, and computer science concentrations require one semester of high school physics or PHY 105 or PHY 111 with a "C" or better to enroll in PHY 211
- A high school computer course or CIS 100 is required to enroll in CIS 110.
- The biology, chemistry, and physics concentrations require one year of high school chemistry or CEM 090 to enroll in CEM 111.

PRE-MEDICINE

If your goal is the field of medicine or medical research, this program will prepare you to transfer into a baccalaureate degree program.

Math and Science (ASMSAS) — Associate in Science Degree

General Education Requirements		(31 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 191	Calculus I	5
BIO 101 or	Concepts of Biology*	
PHY 111	General Physics I	4
PSY 100	Introductory Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6

**The BMED concentration requires BIO 101 & BIO 103. The CMED concentration requires PHY 111 & PHY 122.*

Core Courses		(12 credits)
CPS 171	Introduction to Programming with C++	4
MTH 192	Calculus II	4
BIO 103 or	General Biology II	
PHY 122	General Physics II	4

Minimum Concentration Credits Required for the Program: 24

Complete the requirements for one of the following concentrations. The same course may not be used to meet both a concentration requirement and other program requirements above. Please consult an advisor to select appropriate electives.

Math and Science Concentrations

Biology/Pre-Medicine (BMED)		(24 credits)
CEM 111	General Chemistry I	4
CEM 122	General Chemistry II	4
CEM 211	Organic Chemistry I	4
CEM 222	Organic Chemistry II	4
BIO 227 or	Biology of Animals	
BIO 228	Biology of Plants	4
Elective	BIO 102, BIO 111, BIO 208, BIO 215, BIO 227, BIO 228, or BIO 237	4-5

Chemistry/Pre-Medicine (CMED)		(24 credits)
CEM 111	General Chemistry I	4
CEM 122	General Chemistry II	4
CEM 211	Organic Chemistry I	4
CEM 222	Organic Chemistry II	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4

Minimum Credits Required for the Program: 67

Notes:
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Math and Science (ASMSAS)

This program prepares students to transfer to a four-year college or university to complete a bachelor's degree in biology, chemistry, computer science, math, or physics. The program will give students a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.

Articulation: This program will fulfill MACRAO requirements if, in addition to the courses completed to meet General Education requirements, students complete one additional course in Social and Behavioral Science. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

- Students must have Academic Math Level 7 to begin the math sequence. Two years of high school algebra and one year of high school precalculus are recommended to prepare for this program.
- The chemistry, physics, and computer science concentrations require one semester of high school physics or PHY 105 or PHY 111 with a "C" or better to enroll in PHY 211
- A high school computer course or CIS 100 is required to enroll in CIS 110.
- The biology, chemistry, and physics concentrations require one year of high school chemistry or CEM 090 to enroll in CEM 111.

PROFESSIONAL WRITING

Whether your goal is journalism or technical writing, these programs provide a foundation for beginning writing or to undertake advanced studies at a four-year institution.

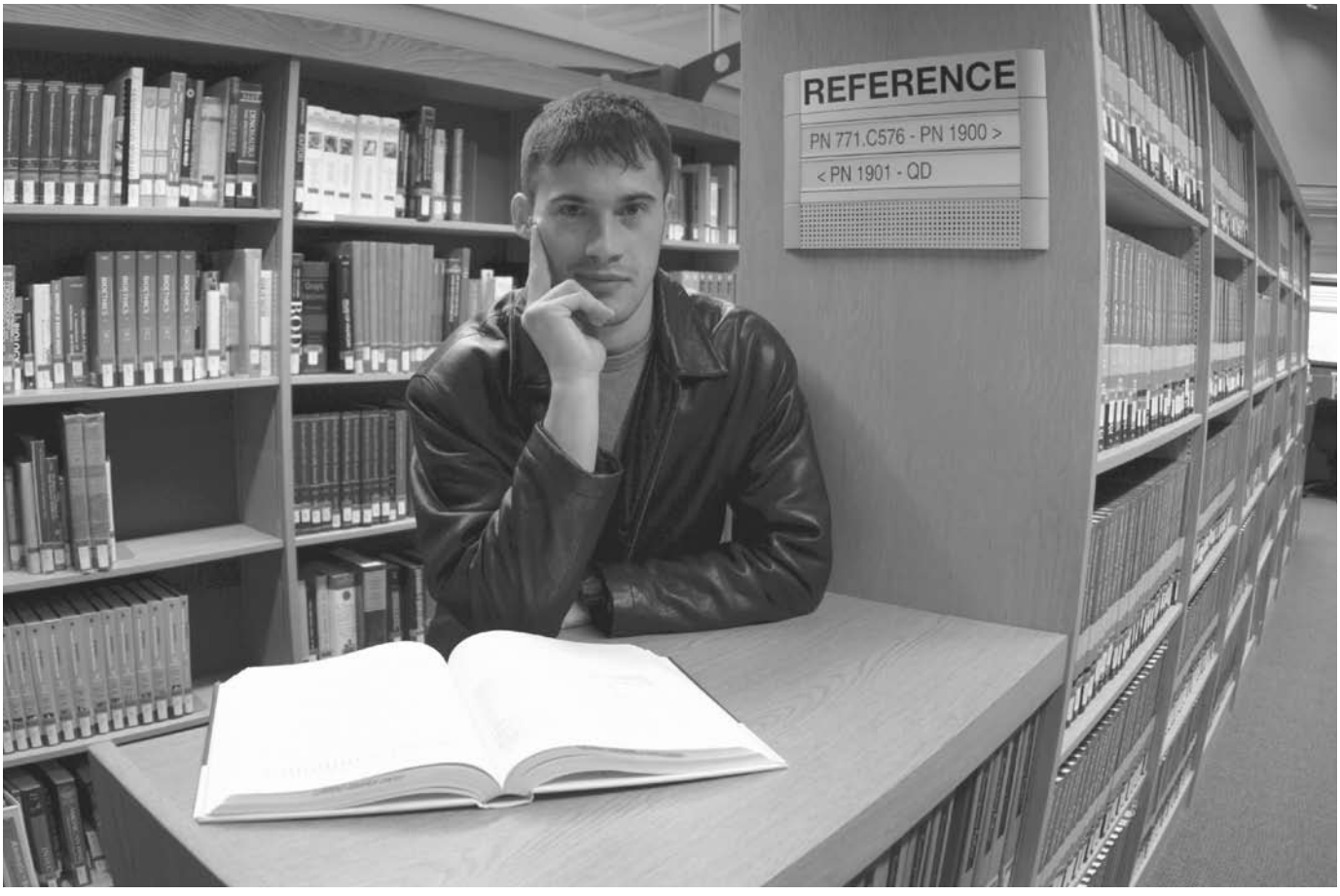
Technical Writing (CTTWR) — Certificate

Major/Area Requirements		(20 credits)
BOS 257	Word Processing and Document Formatting II	3
ENG 208	Technical Writing II	3
ENG 209	Technical Writing III	3
ENG 218	Technical Writing IV	3
ENG 245	Career Practices Seminar	2
GDT 105	Introduction to Mac Graphics	3
INP 150	Web Coding I	3
Minimum Credits Required for the Program:		**20**

Technical Writing (CTTWR)

This certificate program provides comprehensive instructions for students who wish to sharpen their skills in technical communication. As a fast-track program for career changers or a foundational program for first-time professionals, this program provides the knowledge and skills necessary for writing end-user documentation such as printed manuals and online help systems. The student will develop skill in audience analysis, tutorial, procedure, and reference guide writing; project management, document design, technical editing, usability testing, and publishing. Designed to provide the student with practical and theoretical principles of technical writing, the program prepares students for employment in a wide variety of opportunities in technical communication. To this end, students will also learn how to conduct a formal job search and create professional portfolios to better compete for jobs in the field of technical writing. Those without previous college experience can use this certificate to seek work as interns and in co-op positions in technical writing while pursuing the Associate in Arts or Science Degrees in Technical Writing.

Program Admission Requirements: ENG 107 or equivalent course coursework/experience, basic computer literacy, a general understanding of Windows OS and Office 2000, and experience using the Internet.



Journalism (AAJOUR) — Associate in Arts Degree

General Education Requirements		(28 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6
Major/Area Requirements		**(32 credits)**
COM 130	Introduction to Mass Communication	3
ENG 101	Introduction to Print Journalism	3
ENG 216	News Writing and Reporting	3
ENG 217	Feature Writing	3
Elective	Select from either the GDT or PHO choices. GDT 105 Introduction to MacGraphics and GDT 127 QuarkXPress for Print Publishing or PHO 111 Photography I and PHO 227 Photojournalism	7
PLS 112 or PLS 150 or PLS 220	Introduction to American Government State and Local Government and Politics Politics and the Media	3
Elective	Elect courses in Social Science and Arts & Humanities to bring the total credits to a minimum of 60.	10
Minimum Credits Required for the Program:		**60**

Notes:
**Transfer students should select a lab-based, MACRAO-approved science course.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Journalism (AAJOUR)

This program prepares students to transfer to a four-year institution and major in journalism. Three specialty courses provide a solid background in journalism-related content. Students in the program will gain invaluable experience in areas of a career in journalism.

Articulation: Eastern Michigan University, BS degree. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Technical Writing (AATW) — Associate in Arts Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 160 or	Basic Statistics	
MTH 169	Intermediate Algebra	4
Nat. Sci.	Elective(s)*	4
Soc. Sci.	Elective(s)*	6
Arts/Human.	Elective(s)*	6

Major/Area Requirements		(31 credits)
BOS 257	Word Processing and Document Formatting II	3
ENG 107	Technical Writing I	3
ENG 208	Technical Writing II	3
ENG 209	Technical Writing III	3
ENG 218	Technical Writing IV	3
ENG 245	Career Practices Seminar	2
GDT 105	Introduction to Mac Graphics	3
INP 150	Web Coding I	3
Elective	Restricted Electives**	8-9

Minimum Credits Required for the Program: 61

Notes:
**If your course(s) exceeds the recommended credit hours, you will need to reduce the number of credits in the restricted electives. Students who plan to transfer to a 4-year university are encouraged to meet with the Technical Writing program advisor to select appropriate general education courses.*
***Students must meet with the Technical Writing program advisor to select appropriate elective courses.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Technical Writing (AATW)

This program prepares students for entry-level staff positions and freelance writing opportunities in the field of technical writing. Students sharpen their writing skills, explore the technical writing process in detail, write manuals and online help systems, and obtain hands-on experience using the leading tools of the technical writing trade.

Program Admission Requirements: Students must have basic computer knowledge, a general understanding of Windows OS and Office 2000, and experience using the Internet or complete CIS 100 before entering the program.

Students must have Academic Math Level 3 to enroll in MTH 160 or MTH 169. One year of high school algebra with a "C" or better is recommended.

Technical Writing (ASTWRT) — Associate in Science Degree

General Education Requirements		(29 credits)
ENG 111	Composition I	4
ENG 208	Technical Writing II	3
COM 101	Fundamentals of Speaking	3
MTH 160 or	Basic Statistics	
MTH 169	Intermediate Algebra	4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	6
Arts/Human.	Elective(s)	6

Major/Area Requirements		(31 credits)
BOS 257	Word Processing and Document Formatting II	3
ENG 107	Technical Writing I*	3
ENG 209	Technical Writing III	3
ENG 218	Technical Writing IV	3
ENG 245	Career Practices Seminar	2
GDT 105	Introduction to Mac Graphics	3
INP 150	Web Coding I	3
Elective	Restricted Electives**	11-12

Minimum Credits Required for the Program: 60

Notes:
**This course must be taken before ENG 208.*
***Students must meet with the Technical Writing program advisor to select appropriate elective courses.*
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Technical Writing (ASTWRT)

This program prepares students for entry-level staff positions and freelance writing opportunities in the field of technical writing, particularly in the area of medical and scientific writing. Students sharpen their writing skills, explore the technical writing process in detail, write manuals and online help systems, and obtain hands-on experience using the leading tools of the technical writing trade.

Program Admission Requirements: Students must have basic computer knowledge, a general understanding of Windows OS and Office 2000, and experience using the Internet or complete CIS 100 before entering the program.

Students must have Academic Math Level 3 to enroll in MTH 160 or MTH 169. One year of high school algebra with a "C" or better is recommended.

This program prepares you to transfer to a bachelor's degree program in social work.

Human Services (AAHUST) — Associate in Arts Degree

General Education Requirements		(30 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101 or	Fundamentals of Speaking	
COM 102	Interpersonal Communication	3
MTH 160	Basic Statistics	4
BIO 101 or	Concepts of Biology	
BIO 102	Human Biology	4
PSY 100	Introductory Psychology	3
SOC 100	Principles of Sociology	3
Arts/Human.	Restricted Elective(s)*	3
Arts/Human.	Elective(s)**	3
Major/Area Requirements		**(31 credits)**
HSW 100	Introduction to Human Services	3
HSW 200	Interviewing and Assessment	3
HSW 230	Field Internship and Seminar I	3
PSY 206	Life Span Developmental Psychology	4
PSY 210	Behavior Modification	3
PSY 257	Abnormal Psychology	3
SOC 205	Race and Ethnic Relations	3
SOC 220	Group Dynamics and Counseling	3
SOC 225	Family Social Work	3
Elective	Complete an additional course as a free elective.	3
Minimum Credits Required for the Program:		**61**

Notes:
**Select one of the following courses: ART 143, ART 150, DAN 180, ENG 213, ENG 214, ENG 224, or ENG 242.*
***Select another course from the Humanities section of the MACRAO list. Do not choose any Communication (COM) courses. Do not choose any courses in bold, they don't meet WCC General Education requirements.*
If transferring to Madonna University, follow the curricular guide for that university. See a program advisor for details.
Students must meet the Computer and Information Literacy Graduation Requirement.
See General Education Graduation Requirements in the WCC Bulletin.

Human Services (AAHUST)

This program prepares students for a job as a substance abuse, hospice, case, psychiatric, or social services aide in settings such as schools, rehabilitation centers, and mental health clinics or as a staff member in a community/neighborhood center. The program provides skills students will need to work on a one-to-one basis or in groups to help people cope with problems. The program also prepares students to transfer to a bachelor's degree program where they will continue developing skills for a career in the field of social work. The program transfers to Eastern Michigan University and Madonna University. Specific course requirements for EMU and Madonna are listed in the footnotes. For more details, copies of the articulation agreements may be obtained from the counseling office or a program advisor.

Articulation: Madonna University, BSW degree, Eastern Michigan University, BSW degree.*

*Students should meet with an EMU Department of Social Work advisor before applying for admission to EMU's program. This program meets MACRAO. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office. Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Applying for Admission to the Program: The faculty and administration reserve the right to admit and retain only those students who, in their judgment, possess academic and personal suitability for the Human Services Program. Suitability criteria are listed below and also can be found in the Human Services Student Handbook. Applications to the program must be made during the semester that students are enrolled in HSW 100 (Introduction to Human Services). Interested students who are enrolled in the course will be invited to submit a written request for an admission interview.

Program Admission Requirements: Applicants must have the following:

- Academic Math Level 3
- Academic Reading and Writing Levels of 6
- Applicants must enroll in HSW 100 and complete the course with a grade of "C" or better
- Applicants must meet the following suitability criteria:

Continued on next page

Human Services (AAHUST) — Associate in Arts Degree

Continued from previous page

- Has a cumulative GPA of 2.0 in all WCC courses
- Demonstrates honesty in dealings with other students and faculty
- Demonstrates behavior conforming to the National Organization for Human Service Education's "Ethical Standards of Human Service Professionals" (printed in the program handbook)
- Presents in an appropriate and professional manner in the interview
- Demonstrates evidence of being able to relate to clients in a helpful manner
- Applicants must submit a letter of recommendation from a non-family member who knows them well such as a minister, employer, or teacher.

Continuing Eligibility Requirements:

Faculty will review students' eligibility for the program on an ongoing basis.

1. Students must maintain satisfactory academic class performance, as evidenced by a minimum cumulative GPA of 2.0.
2. Students must earn a "C" or better in all HSW courses.
3. To enroll in the Human Services field internships, students must have completed HSW 100, HSW 150, and HSW 200 with a "C" or better.
4. Students must maintain at least an 80% rate of attendance in class and in an internship placement.
5. Students must honor any agreement entered into with an agency serving as an internship site.
6. Students must maintain ethical behavior as defined in the National Organization for Human Service Education's "Ethical Standards of Human Services Professionals."
7. Students should be aware that internship sites might conduct background checks on applicants to determine if they have been convicted of a crime or are addicted to drugs or alcohol.

Curriculum Organization Chart

Business and Computer Technologies Division

Business Department

Disciplines:

Accounting (ACC)
Business Management (BMG)
Real Estate (RES)
Tax (TAX)

Business Office Systems Department

Disciplines:

Business Office Systems (BOS)

Computer Instruction Department

Disciplines:

Computer Information Systems (CIS)
Computer Networking (CNT)
Computer Science (CPS)
Computer Systems Security (CSS)

Drafting Department

Disciplines:

Architectural Drafting (ARC)
Computer Aided Drafting (CAD)
Interior Design (IDN)

Electricity/Electronics Department

Disciplines::

Electricity/Electronics (ELE)
Computer Networking (CNT)
Computer Systems Technology (CST)

Internet Professional Department

Disciplines:

Internet Professional (INP)

Visual Arts Technology Department

Disciplines:

Animation (ANI)
Graphic Design Technology (GDT)
Photography (PHO)
Video (VID)

Health and Applied Technologies Division

Allied Health Department

Disciplines:

Dental Assisting (DEN)
Pharmacy Technology (PHT)
Physical Therapist Assistant (PTA)
Radiography (RAD)

Culinary/Hospitality Management Department

Disciplines:

Culinary Arts (CUL)

Industrial Technology Department

Disciplines:

Advanced Manufacturing Systems (AMS)
Fluid Power (FLP)
Machine Tool Technology (MTT)
Numerical Control (NCT)
Robotics (ROB)

Nursing & Health Science Department

Disciplines:

Health Science (HSC)
Nursing (NUR)

Office of the Vice President for Instruction

United Association

Disciplines:

Apprenticeship Plumbers (APP)
United Association Pipefitters (UAF)
United Association Plumbers (UAP)
United Association Service Technicians (UAE)
United Association Sprinkler Fitters (UAR)
United Association Supervision (UAS)
United Association Training (UAT)

Continuing Education/ Community Services Division

Disciplines:

Apprenticeship

Humanities and Social Science Division

Academic Skills Department

Disciplines:

Academic Skills (ACS)

Educational Development

Disciplines:

Reading (REA)

English/Writing Department

Disciplines:

English/Writing (ENG)

Foreign Language Department

Disciplines:

Arabic (ARB)
French (FRN)
German (GRM)
Spanish (SPN)

GED Program

Humanities Department

Disciplines:

Art (ART)
Communication (COM)
Humanities (HUM)
Philosophy (PHL)

Performing Arts Department

Disciplines:

Dance (DAN)
Drama (DRA)
Music (MUS)
Yoga (YOG)

Social Science Department

Disciplines:

Anthropology (ANT)
Economics (ECO)
Geography (GEO)
History (HST)
Political Science (PLS)

Math, Natural, and Behavioral Sciences Division

Behavioral Sciences Department

Disciplines:

Child Care Professional (CCP)
Human Services Worker (HSW)
Psychology (PSY)
Sociology (SOC)

Life Science Department

Disciplines:

Biology (BIO)
Physical Education Activities (PEA)

Mathematics Department

Disciplines:

Mathematics (MTH)

Physical Sciences Department

Disciplines:

Astronomy (AST)
Chemistry (CEM)
Geology (GLG
Physics (PHY)
Science (SCI)

Public Service Careers Department

Disciplines:

Criminal Justice (CJT)

Vocational Technologies Division

Automotive Body Department

Disciplines:

Automotive Body Repair (ABR)
Collision Repair Technician (CRT)
Custom Cars and Concepts (CCC)

Automotive Services Department

Disciplines:

Auto Services (ASV)

Motorcycle Technology Department

Disciplines:

Motorcycle Service Technology (MST)

Construction Institute Department

Disciplines:

Construction Management (CMG)
Residential Construction Technology (CON)

Welding and Fabrication Department

Disciplines:

Heating, Ventilation, Air Conditioning and Refrigeration (HVA)
Welding and Fabrication (WAF)

Course Descriptions

In this section

Explanation of Terms 200

Academic Levels 200

Prerequisites 200

Consent Required 200

Co-requisites 200

Concurrent Courses 200

Level II Prerequisites 200

Co-op, On-the-Job Training, and Individualized Study Courses 200

Academic Levels 201

Course Description Table of Contents 202

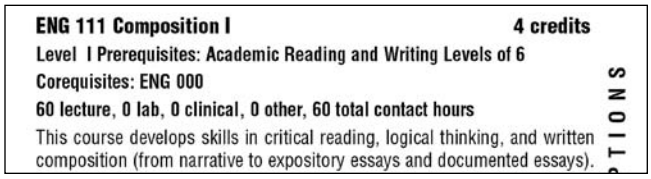
Course Descriptions 204

Curriculum Changes 297

Explanation of Terms

This section of the Bulletin lists all credit courses offered at the time this publication went to press. Courses are arranged alphabetically by the name of the discipline, starting with Academic Skills and ending with Yoga.

The abbreviation for the discipline, the course number, and the course title are listed in the first line of each course entry, along with the number of credit hours awarded for the course.


ENG 111 Composition I **4 credits**
Level I Prerequisites: Academic Reading and Writing Levels of 6
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
This course develops skills in critical reading, logical thinking, and written composition (from narrative to expository essays and documented essays).

The next lines contain information about any prerequisites or co-requisites associated with the course, as well as the number and type of contact hours (time spent in lecture, lab, or clinical settings) required for the course.

After this information, the content of the course is summarized in a few sentences. Explanations of specific terms used in course entries are provided below.

Academic Levels

Applicants are assigned Academic Levels in Reading, Writing, and Math that are based on their assessment test, or if exempt from assessment testing, their previous college record.

Most courses require a specific Academic Level in Reading and Writing, and some also require an Academic Level in Math. These prerequisites are listed in the course descriptions and in the academic class schedule. If the phrase "No Basic Skills" is listed, all Academic Levels are acceptable for the course.

Academic Levels can be found in the student's personal data by logging into MyWCC, clicking Student Records, and choosing View Test Scores and Academic Level.

Students who wish to take a particular course should make sure that their Academic Levels match or are above the Academic Levels in Reading, Writing, and Math listed for that course.

Students who do not meet the Academic Levels listed for a particular course may work to meet that Academic Level by taking specific classes. WCC counselors and advisors help students consider their class options. See the Academic Level chart that lists the scores and classes necessary to meet a specific academic level.

If the College has more than one assessment for the student in its records, such as the ACT, the SAT, COMPASS, and particular classes, the College uses the highest scores or class(es) to assign the Academic Level to the student.

Prerequisites

Prerequisites are requirements that students need to meet before they may register for a course. Most 100 and 200 level courses require Academic Level 6 in Reading and Academic Level 6 in Writing. If all Academic Levels are acceptable for a course, the phrase "No Basic Skills" will be listed.

In addition, there may be other courses that students must complete satisfactorily or another qualification to meet before registration is permitted for a particular course.

Any prerequisite courses must be taken before the selected course, and passed with the minimum grade listed, or a "D-" if no minimum is listed.

Consent Required

If this phrase appears in a course entry, the student must have the instructor's authorization to register for the course, in addition to any prerequisites that are listed. Instructor consent is a requirement for all co-op, field experience, internship, practicum, on-the-job training, and individualized study courses.

Co-requisites

Co-requisite courses must be taken during the same semester as the listed course, and students must register for both courses simultaneously.

Concurrent Courses

When "may enroll concurrently" appears next to prerequisite, students will be allowed to register for the course if they register for the prerequisite at the same time. However, it is always preferable to complete prerequisite courses first.

Level II Prerequisites

Some classes have Level II prerequisites, which are courses, placement tests, or conditions which are required before registering in a course. These prerequisites will be checked by the instructor on the first day of class. If students cannot demonstrate to the instructor that they have met the Level II prerequisites, they may be asked to drop the course. Level II prerequisites which require completion of specific courses should be passed with the minimum grade listed, or a "D-" if no minimum is listed.

Co-op, On-the-Job Training, and Individualized Study Courses

Some programs offer Co-op Education I and II (with course numbers of 174 and 274). Registration for a cooperative education course requires attendance at a co-op orientation and students must obtain faculty permission.

Other individualized courses are Study Problems (with a course number of 189) and On-the-Job Training (with a course number of 199). These courses offer specialized instruction and/or training. Special registration requirements exist for these courses; please see an advisor or counselor before registering.

Academic Levels

Reading	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*					
	Successful Completion**	COMPASS Reading	ACT Reading	SAT Reading	ASSET Reading	Exempt***
Academic Reading Level 1		<37	Na	Na	<30	
Academic Reading Level 2		37	Na	Na	30	
Academic Reading Level 3		53	12	320	34	
Academic Reading Level 4	REA 071	68	15	390	37	
Academic Reading Level 5	ACS 107	78	18	450	41	
Academic Reading Level 6	ACS 108	82	19	460	43	X

Writing	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*					
	Successful Completion**	COMPASS Writing	ACT Writing	SAT Writing	ASSET Writing	Exempt***
Academic Writing Level 2		<40	<14	<380	<38	
Academic Writing Level 3	ENG 051	40	14	380	38	
Academic Writing Level 6	ENG 091	81	20	480	46	X

Math	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*					
	Successful Completion**	COMPASS MDEV / Pre-Alg (CMPP)	ACT Math	SAT Math	ASSET Math	Exempt***
Academic Math Level 1		<75 / <37	<16	<390	<39	
Academic Math Level 2	MTH 067 + BASM ≥ 75****	75 / 37	16	390	39	X
		COMPASS Algebra (CMPA)				
Academic Math Level 3	MTH 097 + LEEM ≥ 75****	32	18	440	N/A	
Academic Math Level 4	MTH 169	66	23	540	N/A	
		COMPASS College Algebra (CMPC)				
Academic Math Level 5	MTH 176 Or 181	46	24	560	N/A	
		COMPASS Trigonometry (CMPT)				
Academic Math Level 6	MTH 178	32	25	580		
Academic Math Level 7	MTH (176 & 178) or 180	56	26	600	N/A	

**If the college has more than one assessment for the student in its records, such as the ACT, the SAT, COMPASS, and particular classes, the College uses the highest scores or class(es) to assign the Academic Level to the student.*

***Successful completion requires minimum grade of 'S' or 'C'.*

****Students with the following exemption test codes (EXAP (apprentice), EXCC (company contract), EXPC (prior college), EXPG (guest student), and EXPT (old exemption code)) are assumed to have level 6 reading and level 6 writing. The exemption codes will allow students to enroll in Math courses through those requiring Math level 2. Students who have an exempt score and wish to take a Math class which requires an Academic Level 3 or above must demonstrate the required academic level by taking COMPASS or a Math placement test, or by completing a prerequisite course. See a WCC counselor. We do not accept Accuplacer scores for placement.*

*****For MTH 067 or Math 097, students must complete the course with at least a "C" and also get at least 75% on the exam listed (Basic Skills Math Test (BASM) for 067 and Linear Essential Exam (LEE or LEEM) for 097 before they may take the Math class listed in the same row.*

Course Description Table of Contents

By Discipline Name

Discipline	Abbr.	Page
Academic Skills	ACS	204
Accounting	ACC	205
Advanced Manufacturing Systems	AMS	205
Animation	ANI	206
Anthropology	ANT	206
Arabic	ARB	207
Architectonics	ARC	207
Art	ART	209
Astronomy	AST	210
Auto Body Repair	ABR	210
Automotive Services	ASV	211
Biology	BIO	213
Business Management	BMG	215
Business Office Systems	BOS	217
Chemistry	CEM	219
Child Care Professional	CCP	220
Collision Repair Technician	CRT	222
Communication	COM	223
Computer-Aided Drafting	CAD	224
Computer Information Systems	CIS	225
Computer Networking Technology	CNT	228
Computer Science	CPS	229
Computer Systems Security	CSS	231
Computer Systems Technology	CST	232
Construction Management	CMG	232
Construction Technology	CON	232
Criminal Justice	CJT	234
Culinary Arts	CUL	235
Custom Cars & Concepts	CCC	237
Dance	DAN	238
Dental Assisting	DEN	239
Drama	DRA	241
Economics	ECO	241
Electricity/Electronics	ELE	242
English	ENG	243
Fluid Power	FLP	248
French	FRN	248
Geography	GEO	249
Geology	GLG	249
German	GRM	250
Graphic Design Technology	GDT	250
Health Science	HSC	252
Heating Ventilation and Air Conditioning	HVA	253
History	HST	254
Human Services Worker	HSW	255
Humanities	HUM	256
Interior Design	IDN	257
Internet Professional	INP	258
Machine Tool Technology	MTT	260
Mathematics	MTH	261
Motorcycle Service Technology	MST	263
Music	MUS	263
Numerical Control	NCT	266
Nursing	NUR	267
Pharmacy Technology	PHT	269
Philosophy	PHL	270
Photography	PHO	271
Physical Education Activity	PEA	273
Physical Therapist Assistant	PTA	273
Physics	PHY	275
Political Science	PLS	275
Psychology	PSY	276
Radiography	RAD	277
Reading	REA	279
Real Estate	RES	279
Robotics	ROB	280
Science	SCI	281
Sociology	SOC	281
Spanish	SPN	282
Tax	TAX	282
United Association		
Pipefitters	UAF	283
Plumbers	UAP	284
Service Technicians	UAE	284
Sprinkler Fitters	UAR	282
Supervision	UAS	285
Training	UAT	286
Video Production	VID	294
Welding and Fabrication	WAF	295
Yoga	YOG	296

By Discipline Abbreviation

Abbr.	Discipline	Page
ABR	Auto Body Repair	210
ACC	Accounting	205
ACS	Academic Skills	204
AMS	Advanced Manufacturing Systems	205
ANI	Animation	206
ANT	Anthropology	206
ARB	Arabic	207
ARC	Architectonics	207
ART	Art	209
AST	Astronomy	210
ASV	Automotive Services	211
BIO	Biology	213
BMG	Business Management	215
BOS	Business Office Systems	217
CAD	Computer-Aided Drafting	224
CCC	Custom Cars & Concepts	237
CCP	Child Care Professional	220
CEM	Chemistry	219
CIS	Computer Information Systems	225
CJT	Criminal Justice	234
CMG	Construction Management	232
CNT	Computer Networking Technology	228
COM	Communication	223
CON	Construction Technology	232
CPS	Computer Science	229
CSS	Computer Systems Security	231
CST	Computer Systems Technology	232
CUL	Culinary Arts	235
DAN	Dance	238
DEN	Dental Assisting	239
DRA	Drama	241
ECO	Economics	241
ELE	Electricity/Electronics	242
ENG	English	243
FLP	Fluid Power	248
FRN	French	248
GDT	Graphic Design Technology	250
GEO	Geography	249
GLG	Geology	249
GRM	German	250
HSC	Health Science	252
HST	History	254
HSW	Human Services Worker	255
HUM	Humanities	256
HVA	Heating Ventilation and Air Conditioning	253
IDN	Interior Design	257
INP	Internet Professional	258
MTT	Machine Tool Technology	260
MTH	Mathematics	261
MST	Motorcycle Service Technology	263
MUS	Music	263
NCT	Numerical Control	266
NUR	Nursing	267
PEA	Physical Education Activity	273
PHL	Philosophy	270
PHO	Photography	271
PHT	Pharmacy Technology	269
PHY	Physics	275
PLS	Political Science	275
PSY	Psychology	276
PTA	Physical Therapist Assistant	273
RAD	Radiography	277
REA	Reading	279
RES	Real Estate	279
ROB	Robotics	280
SCI	Science	281
SOC	Sociology	281
SPN	Spanish	282
TAX	Tax	282
United Association		
UAE	Service Technicians	284
UAF	Pipefitters	283
UAP	Plumbers	284
UAR	Sprinkler Fitters	282
UAS	Supervision	285
UAT	Training	286
VID	Video Production	294
WAF	Welding and Fabrication	295
YOG	Yoga	296

Academic Skills ACS

ACS 055 Success Skills Workshop 3 credits

Level I Prerequisites: Academic Reading Levels 1, 2 or 3; no minimum writing level

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course explores skills and habits that lead to academic and personal success. Through class activities, application examples and journal writing, students will increase self-esteem, motivation, and emotional intelligence. Other topics include an introduction to active learning and learning styles, time management, and effective communication. Personal and academic goal-setting will be explored.

ACS 095 Student Success Seminar 3 credits

Level I Prerequisites: Academic Reading Levels 4 or 5; no minimum writing level

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course enables students to develop skills and habits that lead to academic, professional, and personal success. Through readings, activities and journal writing, students will increase self-esteem, motivation, and emotional intelligence. Other topics include an introduction to learning styles, reading and writing strategies, note-taking, studying tips, time management, effective communication, and money management. Personal, academic and career goal setting will be explored.

ACS 105 Advanced Vocabulary 3 credits

Level I Prerequisites: Academic Reading Level 4; no minimum writing level; ACS 107 or ACS 108, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to expand vocabulary and improve word recognition skills for the college-bound student. Major areas of emphasis include the study of derivations; context clues; dictionary skills; other vocabulary acquisition strategies; pronunciation skills, and American idioms. A current news magazine, on-line resources, and TV news programs are used to demonstrate the prevalence of academic vocabulary in the common media. For other reading courses, look under Reading (REA).

ACS 107 College Study Skills and Speed Reading 4 credits

Level I Prerequisites: Academic Reading Level 4; no minimum writing level

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

College Study Skills and Speed Reading is designed to help students improve their study skills and to develop rapid reading techniques. Instructional units include all the essentials for academic success: learning styles, time management, vocabulary development, textbook reading, note-taking skills, computer literacy, speed reading and test-taking skills. Students who have not successfully completed ACS 107 may repeat it once.

ACS 108 Problem Analysis and Critical Thinking 3 credits

Level I Prerequisites: Academic Reading Level 5; no minimum writing level

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for learners who wish to improve their performance in all academically demanding courses (including math, science, and technology). Analytical problem-solving and critical thinking skills are enhanced through a variety of instructional units (analogies, serial order, spatial descriptions, etc.), and 13-16 grade level textbook selections are systematically analyzed to improve comprehension. For other reading courses, look under Reading (REA).

ACS 110 Speed Reading 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Designed to improve reading rates, this course may double students' reading speeds (at a minimum) with no loss in comprehension. Students also learn a variety of techniques that enable them to vary their reading speed according to the material and their specific purpose. This course was previously ACS 106.

ACS 111 First Year Experience Seminar 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course enables students to identify and develop the beliefs, attitudes, behaviors and skills that lead to academic, career and personal success. Through self-assessment, readings, projects, classroom activities, and journal writing, students will learn to take charge of their lives, improve self-management, increase self-esteem and self-confidence, while learning to maximize their learning. Other topics include money management, effective use of college resources, critical thinking and decision making and effective writing and communication. Academic and career goal setting will also be explored.

ACS 121 Career Planning Seminar 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 3

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is designed for persons undecided about a career goal or program of study, or interested in making a career change. Students complete a self-assessment of interests, work values, skills and abilities through exercises and vocational inventories. Students will also learn how to research careers, become more knowledgeable of careers, career alternatives, and employment trends through the use of course materials, classroom activities, and in-class guest speakers. Other topics include: decision making skills, self-esteem, and work attitude.

ACS 122 Career Decision Making 1 credit

Level I Prerequisites: Academic Reading Level 4; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This short course is designed for students who are undecided about career and life goals. Two day-long class sessions are held, usually on consecutive weekends, followed by outside assignments that students complete at their own pace. Through exercises, activities, and career tests, students clarify their goals, interests, values, and learn decision making skills. Students also research occupations.

ACS 123 Information Literacy 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 3

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course provides an introduction to techniques of information retrieval and information evaluation. Students completing this course will have the skills needed to locate and evaluate information, to think critically about research strategies, and to apply these concepts to undergraduate research using library resources and the Internet.

Accounting ACC

ACC 100 Fundamentals of Accounting I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the theory and practice of modern double-entry accounting systems and procedures. Emphasis is placed on journalizing and posting, adjusting and closing books and the preparation of financial statements for both service and merchandising businesses. The class is designed for the non-accounting major. This course is not designed for transfer to four-year colleges. This course was previously ACC 091.

ACC 101 Fundamentals of Accounting II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

A continuation of ACC 100, which includes notes, inventories, depreciation, accruals, and end of the year procedures with financial statements. The course addresses partnerships, corporations, statement analysis and interpretation, and is designed for non-accounting majors. This course is not designed for transfer to four-year colleges. This course was previously ACC 092.

ACC 111 Principles of Accounting I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 125, MTH 169, or MTH 181 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory course in accounting principles and theory with emphasis on the accounting cycle, recording and valuation of assets and current liabilities, financial reporting and an introduction to accounting systems and controls. Students will also perform financial analysis which will include assessing a company's ability to pay off its current liabilities.

ACC 122 Principles of Accounting II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 111

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of Principles of Accounting I covering partnerships, corporations, financial analysis, and an introduction to managerial accounting. Students learn how to identify financial accounting information pertaining to business entities and to evaluate a company's performance and forecast future performance.

ACC 131 Accounting Information Systems **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 100 or ACC 111, may enroll concurrently

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

Accounting Information Systems prepares students to design and maintain accounting information systems using the personal computer. The course is presented and mastered on the personal computer in such a manner that no prior knowledge of personal computers is required. The title of this course was previously Computer Applications in Accounting.

ACC 174 ACC Co-op Education I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Two courses in ACC discipline; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, business-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two co-op courses.

ACC 213 Intermediate Accounting **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 122

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of the study of generally accepted accounting principles as they pertain to the valuation and classification of current assets, plant assets, intangible assets, and current liabilities. Students with experience equivalent to ACC 122 may contact the instructor for permission to waive the prerequisite.

ACC 225 Managerial Cost Accounting **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 122

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Principles and procedures for planning, reporting, and controlling cost. Topics will include: managerial cost accounting fundamentals, tools for planning and control, process costing and capital investment decisions.

ACC 274 ACC Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

This is the second of two co-op courses in which students gain skills from a new experience in an approved, compensated, business-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

Advanced Manufacturing Systems AMS

AMS 103 Materials and Processes **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course includes an introduction to basic terms, mechanical and physical properties, and characteristics and structures of materials. Heat treatment of ferrous and non ferrous metals and the effect on tensile, torsion, and impact will be investigated. The study of common consumer products will identify material type and processes used in manufacturing. In a capstone project we will associate two different materials to a product identifying the advantages and disadvantages for both. Mechanical and physical properties, characteristics, ease of manufacturing, cost, environmental impact, and life cycle will be compared. This course was previously MTT 103.

AMS 104 Rapid Prototyping and Methods **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course will investigate different methods for accelerating the development of products, from initial design through mass production. Different methods used by master modelers including 3D CAD CAM, clay modeling, cardboard modeling, Rapid Prototyping systems, CNC machine tools, and sheet metal fabrication, will be explored. Types, acronyms, definitions, advantages and disadvantages associated with rapid prototyping equipment will be investigated.

AMS 105 Lean Manufacturing Methods **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

Students will be introduced to problem solving and lean manufacturing tools used in manufacturing facilities. Students will be exposed to topics such as lean manufacturing, innovations in lean, seven deadly wastes, Kaizen, 5S, Six Sigma, Poka Yoke, FMEA, Ishikawa, Kepner Trego, and mind mapping tools. The principles of innovations in lean will be used to identify methods for reducing waste on a product identified by students in groups.

AMS 204 Innovations Application **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; AMS 103; BMG 241 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This is part one of a two part project. In part one, students will use brainstorming techniques to identify problems/products needing exploration. Once students have identified a problem/product worthy of exploration, they will apply the innovation process learned in the innovations class.

AMS 205 Build Concept Prototype **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; AMS 204 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This is part two of a two part project. Using materials developed in part one the students will develop working models/parts. These prototypes will be unveiled to the student body at Washtenaw Community College. Students will expand on the portfolio of work from part one to include part two.

Animation ANI

ANI 145 Concept Development for Animation **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 150 may enroll concurrently

20 lecture, 0 lab, 0 clinical, 10 other, 30 total contact hours

This course is an introduction to the conceptualization process that precedes the creation of an animation. Students will participate in all phases of developing an idea for animation: research, plan, ideation, storyboarding, and logic.

ANI 150 3D Animation I: Modeling **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 145 may enroll concurrently

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This course introduces students to creating digital 3D forms for animation. Various techniques (wire frame, compound primitives and NURBS) are used to construct 3D forms. Using industry-standard software, students develop 3D modeling/animation skills while learning the technical vocabulary needed for the 3D modeling/animation industry. Students create and apply textures and lighting to digital 3D forms, investigate camera positioning/point of view, and perform simple rotational animation.

ANI 155 Textures and Studio Lighting for Animation **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 60 other, 90 total contact hours

Using traditional studio techniques and Adobe Photoshop, students will learn to enhance form through use of lighting effects, cast shadows, highlights, and reflections.

ANI 230 Motion and Sound **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 145 and ANI 150 minimum grade "C+"

Corequisites: ANI 250

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course focuses on the knowledge and skills needed to produce motion and sound for animations. Characteristics of space and movement, as well as concepts and techniques related to the generation and use of sound, will be studied. This course is an integral part of assembling animations, as well as bringing them to life with editing, and foley arts. Some of the software covered will be Photoshop, Final Cut Pro, and Soundtrack Pro.

ANI 250 3D Animation II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 145, ANI 150, and GDT 140 minimum grade "C" all courses

Corequisites: ANI 230

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This course builds on the 3D skills of ANI 150. The course will work on proficiency and efficiency in model construction, texture building, and furthering concepts in modeling for animation. The class will explore photorealistic rendering, key-framing, inverse and forward kinematics, and more complex animations. The class will pinnacle in a finished output to video for presentation.

ANI 260 3D Animation III **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 250 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This course builds skills from previous 3D animation courses at a more advanced level. Students will develop proficiency and efficiency in model construction, texture building, and furthering concepts in modeling for animation. The class will explore animation and rigging, photorealistic rendering, special effects, and scene construction.

Anthropology ANT

ANT 201 Introduction to Cultural Anthropology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will employ anthropological theory and method to survey the human experience from a holistic perspective. Relationships between human biology, psychology and culture will be examined utilizing the essential concepts and methods that typify cultural anthropology so that the student may better understand and appreciate the diversity of culture and the flexibility of human adaptations.

ANT 202 Introduction to Physical Anthropology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will examine the human species from a biological and bio-cultural perspective. Major areas of coverage include the process of evolution, human genetics, human variation, biological systematics, primate studies, human fossil remains and Paleolithic archaeological findings.

ANT 205 Introduction to Archaeology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of anthropological archaeology. Topics covered include the following: basic goals of archaeology, archaeological methods and techniques used to research the material record of human behavior, and core anthropological theories used to explain human evolution and socio-cultural change. Archaeological site reports will be used throughout the course to illustrate research practices.

Arabic ARB

ARB 111 First Year Arabic I — 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This course is an introduction to Modern Standard Arabic in which students develop skills in listening, speaking, reading, and writing. Students explore the language through multimedia (CD and DVD), dictation, instructor-prepared materials, and small group participation. Cultural aspects of the Arabic-speaking world are also discussed. Arabic and English will be the medium of instruction during the first six weeks of the course, after which the teacher and students communicate primarily in Arabic.

Architectonics ARC

ARC 000 Architectural Studio — 0 credit

0 lecture, 30 lab, 0 clinical, 0 other, 30 total contact hours

This is a studio-based course that supports Architectural Drawing I, II, III, and IV. Students will receive individualized direction and critique of their projects. Students will work at their own pace and have access to computers, technical references, and equipment that are essential to achieving the outcomes to the listed drawing courses. Students enrolled in ARC 111, 122, 213, or 224 must enroll in ARC 000 concurrently.

ARC 101 Graphic Communication for the Construction Industry — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for anyone entering the architectural and construction field. The student will learn how to read a set of residential and light framed building prints. Starting with the floor plan, the student will work their way through the various levels of a building by reading the foundation, roofing, elevations, and section details that are created to accurately describe the design and construction of the building. Graphic communication by sketching is featured.

ARC 102 Architectural CAD — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ARC 117

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This is a course in which the student learns the basic techniques to use CAD for design and communication in the architectural design and construction planning disciplines. The student produces construction documents and architectural designs, including 3-D digital modeling. Featured in this course are AutoCAD and Architectural Desktop.

ARC 109 Surveying Layout I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 101 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This lecture and field course addresses the introductory knowledge and skills pertaining to land survey procedure. Practical skills in acquiring, procuring data and interpreting drawings with related documentation are covered. These skills are the basic foundation skills that are required to work as a crew member on a surveying team.

ARC 111 Architectural Drawing I — 3 credits

Level I Prerequisites: Academic Reading and Math Levels of 2; Academic Writing Level 3

Corequisites: ARC 000

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to residential planning and design. It emphasizes the accurate and detailed methods of creating complete construction drawings and documents. Students will be exposed to light frame construction methods and materials. Students are expected to research current construction code requirements and materials, as it pertains to their assignments, using the Internet and traditional research methods.

ARC 117 Construction Materials — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

A survey is provided of typical types of materials used in building construction. Emphasis is placed on the properties, selection and building techniques appropriate for a wide range of materials. Included are woods, metals, plastics, clay, gypsum, glass and aggregate materials.

ARC 118 History and Theory of Architecture I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, various architectural structures are presented and analyzed for the period of antiquity to 1870, the Gothic era. Emphasis is placed on fundamental themes underlying modern architectural form. Written essays and oral presentations are used to assess learner acquisition of knowledge of architectural history.

ARC 120 Mechanical and Electrical Systems for Buildings — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ARC 111

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

The drafting of mechanical and electrical systems in buildings from prepared design data is emphasized. This is a laboratory course with lectures related to the laboratory. Students must have drafting instruments.

ARC 122 Architectural Drawing II — 3 credits

Level I Prerequisites: Academic Reading and Math Levels of 2; Academic Writing Level 3

Level II Prerequisites: ARC 111 minimum grade "C"

Corequisites: ARC 000

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a continuation of residential planning and design. The specific focus of this course is the design and development of construction drawings and documents for a custom/luxury home with two stories. Students will be exposed to various light frame construction methods and materials. Students are expected to research current construction code requirements and materials, as it pertains to their assignments, using the Internet and traditional research methods.

ARC 143 Surveying Layout II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 109 minimum grade "C", may enroll concurrently

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This lecture and field based course addresses basic mathematical computation skills required to verify data consistent with the appropriate level of technical applied geometry as used in the field of surveying. Students will be able to compare land data, as generated by electronic surveying equipment, to other related surveying documents to assess accuracy of surveying measurements. Sketching of site plans will also be addressed in this course.

ARC 150 Presentation Drawings and Models — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

The emphasis in this course includes manual skills to make perspective drawings for pictorial presentation, scale models showing site conditions with topography, simple methods for rendering drawings, shades and shadows on architectural drawings, and photographs of models for simulated comparison of proposed building to proposed building site.

ARC 170 Cabinetry and Millwork Design — 3 credits

Level I Prerequisites: Academic Reading and Math Levels of 2; Academic Writing Level 3; CON 170 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is an introductory course in design elements and processes for cabinetry and millwork systems. It will include CAD-based software that will assist in developing the skills and knowledge for completers of the certificate program. Students will create computer-based renderings of interior elevations which require cabinetry, built-ins, stairs and casework, and interior trim.

ARC 174 ARC Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 111 and ARC 117; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, the student sets up work assignments and learning objectives to connect classroom learning with career-related work experience. Instructor consent is required to register for this course.

ARC 209 Surveying Layout III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 143 minimum grade "C", may enroll concurrently

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This lecture and field based course address intermediate knowledge and skills pertaining to land surveying and is a continuation of the practical applications of surveying. Specifically addressed in this course are differential leveling, spirit leveling, base line staking, repetition angles, grid method leveling, and contour interpolations. A variety of sites will be utilized for the surveys.

ARC 210 Structure in Architecture — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 122 and PHY 105 or PHY 111

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This class provides an introduction to the use of structural systems (steel, timber, and reinforced concrete, etc.). Design fundamentals of simple structural components are emphasized.

ARC 213 Architectural Drawing III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 122 minimum grade "C"

Corequisites: ARC 000

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the preparation of architectural presentation drawings from diagrammatic sketches, pictures, surveys, and conference notes for a light industrial construction project. The finished structure will be of masonry construction. A finished portfolio is required and students are expected to utilize CAD to aid in the production of their presentation and construction drawings.

ARC 218 3D Presentation/CAD — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; high school CAD, ARC 102, or work experience

Level II Prerequisites: ARC 122

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

In this course students develop computer skills to produce perspective drawings for pictorial presentation, 3D solid modeling, and raster image insertion for site conditions and topography. Simple computer methods for rendering views, shades and shadows on architectural drawings are covered. Visual Reality/Renderize Live, 3D Studio, or equivalent software is used.

ARC 219 Architectural Engineering and Construction CAD — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Lectures, demonstrations, research and primarily guided lab practice introduce the latest techniques that CAD systems employ to assist in the preparation of presentation, construction and detail drawings. Software featured includes base packages and 3R party applications as available. Features microstation, AutoCAD or DataCAD or any combination.

ARC 224 Architectural Drawing IV — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 213 minimum grade "C"

Corequisites: ARC 000

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the preparation of architectural presentation drawings from sketches, pictures, surveys, and conference notes for a mercantile office project. This commercial building will be a masonry, glass and steel columned structure four stories in height. Students are expected to utilize CAD and the Internet to aid in the production of their work. All design will comply with current Michigan Building Code and the ADA.

ARC 228 Construction Estimating and Specifications — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 101 minimum grade "C"

Level II Prerequisites: ARC 102 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is an introduction to building construction and estimating. Students will learn how to read and prepare specification for construction contracts. Students will learn to perform complete and accurate construction cost estimates that include both commercial and residential construction projects. The student will also learn how to make quantity take-off, factor in overhead, equipment and labor cost. Emphasis will be placed on detailed accuracy of estimates and organization of prepared specifications. Basic word processing and spreadsheet software will be utilized to complete assigned projects.

ARC 243 Surveying Layout IV **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 209 minimum grade "C", may enroll concurrently

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course utilizes hands-on approach, combining GIS level data analysis and utilization as well as the latest computerized software approaches to site planning, measurement gathering, and preparation techniques. Learning objectives include introduction to advanced equipment, synthesis of skills developed and problem solving for everyday construction problems. Team based projects and vignettes form the basis for problem solving. Work will be presented and critiqued by professionals. AutoDesk software is featured.

ARC 274 ARC Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARC 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and the employer, students determine work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

Art ART

ART 101 Introduction to Studio Art **3 credits**

Level I Prerequisites: No Basic Skills

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course will introduce students to a number of media and practices in studio art. Problems in drawing, design, and a color medium will be given. The student will become acquainted with some basic concepts and materials.

ART 102 Color **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This studio course will use colored papers to investigate the interaction of colors, with the aim of developing awareness of how color operates in everyday experience. The objective is to increase students' sensitivity to color so that it can be used more effectively.

ART 108 Three-Dimensional Design **4 credits**

Level I Prerequisites: No Basic Skills

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This studio class will use a variety of three-dimensional materials and methods to explore the qualities inherent in good design. Stressing practice before theory, the student will create designs that explore ways of articulating form.

ART 111 Basic Drawing I **4 credits**

Level I Prerequisites: No Basic Skills

15 lecture, 75 lab, 0 clinical, 0 other, 90 total contact hours

This course is an introduction to the central problems and issues of freehand drawing. Accurate representational drawing is emphasized through a series of projects concentrating on simple objects. The course is recommended for students who plan to continue in art at WCC or to transfer to another college or university.

ART 112 Basic Design I **4 credits**

Level I Prerequisites: No Basic Skills

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This studio course uses a broad range of exercises and materials to involve the student in two- and three-dimensional design experiences. Its objective is to develop careful seeing and analytical thinking that can be applied to all areas of the visual arts. This course is recommended for students who are planning to continue in art at WCC or to transfer to another college or university.

ART 114 Painting I **4 credits**

Level I Prerequisites: No Basic Skills; ART 111 minimum grade "C", may enroll concurrently

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

An analytical approach to the fundamental problems and issues of painting, with emphasis on composition and the articulation of volumetric forms in space.

ART 120 Portrait Painting and Life Drawing **4 credits**

Level I Prerequisites: No Basic Skills

0 lecture, 90 lab, 0 clinical, 0 other, 90 total contact hours

Working from live models, students study anatomy, techniques in drawing, pastel painting and visual expression, multi-media, philosophy, and envisioning. It is preferred, although not required, that students have some art background. Interest is critical.

ART 121 Ceramics I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This studio class will guide the student through a series of projects in clay. The student will develop a comprehension of the different aspects of the ceramic process. The student will also develop a specific set of skills for manipulating and firing clay. The pieces created will demonstrate the different processes and stages by which a piece of clay becomes a piece of ceramic art.

ART 122 Basic Drawing II **4 credits**

Level I Prerequisites: No Basic Skills; ART 111 minimum grade "C"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

Complex problems of drawing are explored with greater emphasis placed on individual solutions. Several new media are introduced.

ART 125 Painting II **4 credits**

Level I Prerequisites: No Basic Skills; ART 114

90 lecture, 0 lab, 0 clinical, 0 other, 90 total contact hours

Further exploration of the fundamental problems and issues of painting, with greater emphasis on individual development.

ART 127 Life Drawing I **4 credits**

Level I Prerequisites: No Basic Skills

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course will provide instruction in basic approaches to drawing the nude. Quick gesture drawings will develop the movement and drama of the figure. Longer developed drawings will explore the structure of the figure. Emphasis is on analyzing the figure in terms of its simple, solid, underlying forms. This course was previously ART 140.

ART 128 Ceramics II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ART 121 minimum grade "C"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course will further explore the fundamental problems and processes of ceramics. The student will integrate the skills learned into a series of ceramic works demonstrating a variety of processes and firing temperatures. Students will take an active role in all aspects of studio management.

ART 129 Life Drawing II — 4 credits

Level I Prerequisites: No Basic Skills; ART 127 minimum grade "C"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course will continue instruction in basic approaches to drawing the nude. Increased proficiency in the skill and concepts introduced in Life Drawing I will be emphasized. New materials will be introduced.

ART 130 Art Appreciation — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Basic Computer Literacy is required Blackboard, e-mail, Internet research, typing

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an inquiry into various media and periods of the visual arts focusing on the Arts of the Western World. Instruction will cover at least two-thirds of the periods and media. Periods covered may include: Prehistoric, Egypt, Mesopotamia, Greece, Rome, Medieval, Renaissance, Baroque, 18th, 19th, and 20th Centuries. Media covered may include: photography, graphic arts, painting, sculpture, and architecture.

ART 143 Art and Culture of Afro - America — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course prepares students to participate in and appreciate the arts (visual, dance, music, film, poetry, literature) of African and Afro-American people. Perspectives and definitions that differ from Western values and standards are presented. The anthropological approach is used to recognize the importance of history in understanding the present. Multi-media methods, skill development and aesthetic competence are emphasized.

ART 150 Monuments and Cultures — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Basic Computer Literacy is required Blackboard, e-mail, Internet research, typing

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an inquiry into architectural monuments from around the world, focusing on the significance of the monument for a particular civilization, religion, or culture. Emphasis is on exploring diverse religious, cultural, and individual ideas and concepts with our own sets of values. Secular as well as sacred monuments will be analyzed, including palaces, homes, structures, cities, tombs, temples, and pilgrimage sites. Religion and cultures from Europe, South-East Asia, Japan, China, Middle Eastern, Africa, and America are discussed.

Astronomy — AST

AST 100 Backyard Astronomy — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

An introduction to objects seen in the sky, with some opportunity for direct observation when weather permits. Astronomy is presented as a hobby as well as a basic science. No prior knowledge of astronomy is required.

AST 111 General Astronomy — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

Astronomy 111 is an in depth survey of the solar system and the universe. Topics covered will include: the sun, moon, and planets; Ptolemaic and Copernican systems; seasonal changes in the sky and modern ideas stemming from early beliefs in astrology. Cosmology and the structure of the universe will also be discussed. It is designed for both transfer and vocational students, no previous science is required, however some general mathematics is needed.

Auto Body Repair — ABR

ABR 111 Introduction to Auto Body Repair — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This entry level, self-paced course will focus on preparing students for a career in the automotive collision repair industry. Through the use of training modules, students will learn industry standard repair procedures, damage assessment, and proper tool selection to aid in the repair of collision damaged automobiles. Additionally, students will be provided with hands-on training for body panel repair and alignment, plastic welding, MIG welding and be introduced to the automotive finishing process.

ABR 112 Introduction to Automotive Refinishing — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This entry level, self-paced course establishes the foundation on which the beginning painter builds his or her knowledge for a career in the automotive refinishing industry. Students will be exposed to today's industry standard methods to include learning how to apply base and clear systems, single stage coatings, primers, and sealers. This is a "hands on" course where students will learn panel preparation, proper mixing of sprayable materials, proper spray gun techniques and adherence to industry safety procedures.

ABR 113 Estimating and Shop Operations — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2; ABR 111

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course provides students with the opportunity to develop skills in repair estimation associated with collision damaged vehicles. Skills acquired will include hand written estimation along with the use of software specifically developed for the auto body repair industry. Damage assessment, parts compilation, calculating of repair cost, and refinishing information are some of the subjects to be covered. Additionally, students will examine the nature of the body shop management team and the factors that contribute to the success and profitability of an effective, efficient operation. The title of this course was previously Applied Body Welding and Estimation.

ABR 114 Applied Auto Body Welding — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ABR 111 minimum grade "C"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

Through the use of specifically formulated modules, students will develop and apply basic welding and cutting skills associated with crash damaged panel replacement as related to the collision repair industry. Areas of study will include proper equipment selection and set up, fitment of panels to be welded, and plasma along with oxy-acetylene cutting procedures. Emphasis will be placed on producing I-CAR acceptable MIG welding of butt, lap, and plug welds completed in various welding positions.

ABR 116 The Evolution of the Automobile — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This introductory course provides students with basic knowledge and skills relating to automotive design, evolution, and repair. The course combines lecture, student-conducted research, and hands-on shop training. Topics include: evolution of auto design, automotive systems, and research techniques. Students participate in lab experiences to develop skills in parts fabrication.

ABR 119 The Art of Metal Shaping — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This course will introduce the student to "the working of sheet metals by hand." In addition to skillful handling of tools, it is necessary for the students to possess a thorough knowledge of the properties and behavior of materials in order to insure that they move in the desired direction when worked. Areas of study will include: Sheet metal shaping with hand tools over handcrafted wood forms, over anvils, and over sand/shot bags and fabricating hand-made parts using a range of sheet metal materials with varied thickness and hardness.

ABR 123 Technical Auto Body Repair — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ABR 111 minimum grade "C"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

Students continue to build on skills learned. Students will be exposed to aspects of body panel modification including fender sectioning, shaving door handles, door skinning and continuation of basic bumping techniques using specialty items such as hydraulic rams. Emphasis is placed on quality, craftsmanship and excellent work habits.

ABR 124 Technical Automotive Refinishing — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ABR 112 minimum grade "C"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course provides students the opportunity to advance fundamental skills. Lab assignments will include the proper surface preparation of a vehicle's front clip. Operations such as proper spraying techniques for the application of metallic colors, spot repairs, color blending, single stage, base-coat clear-coat systems, tri-coat finishes, and specialty products will be covered. Basic custom paint, detailing, and advanced color mixing and matching will also be covered.

ABR 130 Custom Painting — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ABR 112

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course provides students with an understanding of the art of custom painting. Students work with the tools and techniques used in the field. The course covers the use of special effect colors such as pearls and candies. Students use air brushes, pinstripe brushes, and lettering brushes. Murals, graphics, and etching are also covered. Lab assignments on vehicles will provide an opportunity to improve skills.

ABR 135 Collision-Related Mechanical and Electrical Repairs — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course will introduce the student to the fundamental principles of the mechanical and electrical repair issues required to restore vehicle collision damage to pre-accident condition. Areas of study will include: suspension and steering, electrical, brakes, heat and air, cooling, fuel intake and exhaust systems, drive train, and restraint systems.

ABR 174 ABR Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ABR 112 and ABR 113; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated position in the field of auto body repair. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences. Students with equivalent experience may contact the instructor for permission to waive the prerequisite.

Automotive Services — ASV

ASV 112 Classic Engines — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course is for the automobile restoration enthusiast and prospective professional who wants to learn how to rebuild a vintage engine. The focus is on engines pre-dating emission control and electronic engine management technology. Engine tear-down, cleaning, inspection, measuring, sourcing, specifying, and obtaining quality machining services, inspection of replacement parts, and reassembly is emphasized. A variety of engine designs and materials are compared and contrasted. This course was previously ARF 112.

ASV 141 Automotive Mechanics I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

In this course, students will cover basic shop safety, shop practices, under hood and under car preventative maintenance theory and repair. Students will also cover basic automotive brake system theory and service. Included in this course is the theory and service of basic gasoline engines - disassembly, measurements, assembly, and project organizations.

ASV 142 Automotive Mechanics II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

Students perform suspension and steering system service, drive shaft service, basic and advanced electrical system testing and repair, and basic fuel system testing and repair. Instruction stresses hands-on work and lays a foundation for advanced ASV courses.

ASV 143 Automotive Mechanics III — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 141

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course covers the theory, history, fundamentals of testing and repair of fuel injection, emission controls, and OBDII. This course also covers basic on-car engine repairs and diagnostic testing and cylinder head gasket repair.

ASV 144 Automotive Mechanics IV — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 141

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

Students perform drivetrain system service including clutches, manual transmissions, axles and differentials, 4-/all-wheel drives, and automatic transmissions. Students with experience equivalent to ASV 141 may contact the instructor for permission to waive the prerequisite.

ASV 174 ASV Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course students gain skills from a new experience in an approved, compensated position in the field of automotive service technology. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences.

ASV 241 Engine Repair — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 142 or field experience

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students develop skills and knowledge for understanding and repairing automobile engines. Using texts, tools, manuals, and automobiles in a laboratory setting, students perform service and repair on modern automobile engines. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 242 Automatic Transmissions — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 144

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

An application of hydraulic fundamentals to automatic transmissions operation is provided in this course. Diagnosis of transmission, hydraulic, and electrical systems is featured. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 243 Manual Drive Trains and Axles — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 144

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is a course in operating principles and repair procedures of manual driveline systems. Units of study include such areas as final drive systems, clutches, transmissions, and transaxles. Both front and rear-wheel drive systems as well as four-wheel drive units are studied. Diagnosis and repair procedures on actual vehicles are stressed. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 244 Suspension and Steering — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 142 or field experience

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students learn the theory of wheel alignment and develop skills needed to diagnose and align all foreign and domestic cars. Using state-of-the-art balancers, students understand and perform wheel balance equal to the level accepted by the industry. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 245 Brakes — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 143 or field experience

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

In this course students develop skills in diagnosing and repairing brake systems on a variety of working vehicles. Concentration is on factory techniques and accepted field practice. Instruction includes machining of drums and rotors, hydraulic system service, mechanical system inspection and service, and diagnosis and repair of anti-lock brake systems. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 246 Electrical Circuits — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 141 and ASV 142; or field experience

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This class involves the theory and application of automotive electronic circuits and accessories. It includes the construction and servicing of lighting systems, gauges, warning devices, windshield wipers, and solid state devices. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 247 Heating and Air Conditioning — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Climate control systems are explained in depth including theory of refrigeration, servicing procedures, and diagnosis techniques. Compressor service and distribution systems are studied. Laboratory experience is given in testing and servicing a variety of systems and problems. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 248 Engine Performance — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 142 and ASV 143; or field experience

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to provide the student with skills in troubleshooting and repairing drivability problems with automobile computerized engine management systems (fuel, ignition, and emissions). Actual vehicles are used to demonstrate the use of computerized and digital diagnostic equipment. The course provides the knowledge to prepare for the State of Michigan's mechanic certification and the ASE (Automotive Service Excellence) Exams.

ASV 249 Diagnosis and Repair — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 245, ASV 246, ASV 247, and ASV 248, minimum grade "C"; all courses may enroll concurrently

15 lecture, 105 lab, 0 clinical, 0 other, 120 total contact hours

This course is designed to provide the student with the skills necessary to diagnose and repair late model automobiles and light trucks.

ASV 274 ASV Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

Biology BIO

BIO 101 Concepts of Biology **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Basic principles and concepts of biology are surveyed in lecture and laboratory. Emphasis is placed on biological processes as well as practical applications including (but not limited to) major units on chemistry, cells, genetics, cellular energy, kingdoms, reproduction, ecology, evolution, and laboratory skills. If followed by BIO 103, this course provides a comprehensive year long sequence for biology majors. Taken alone, it serves as an introduction to biology for non-science students.

BIO 102 Human Biology **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course familiarizes the student with the structures and functions of the human body, recent advances in human genetics, human health and disease, elements of a healthy lifestyle, human reproductive technology, and human evolution. Students apply this information as they gain an understanding of human biology, and how they can contribute to their own health. The laboratory portion focuses on human structure and function using models, dissections, demonstrations, and medical equipment.

BIO 103 General Biology II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; one year high school chemistry or CEM 090 and BIO 101; minimum grade "C" all BIO, CEM, and high school requirements

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

The emphasis in this course is on analyzing the processes and mechanisms in biological systems including genetics, ecology, evolution, animal behavior, and cell energetics. This course, with BIO 101, provides a comprehensive survey of biological concepts and shows the interrelationship of topics covered from the molecular to the biome level. This course is required for the Biology/Pre-Medicine program. Students who have taken high school chemistry with a grade of C or better may have the chemistry prerequisite waived.

BIO 104 Biology of Exercise **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

The purpose of this course is to introduce the basic principles of exercise biology, including the physiological responses to acute and chronic exercise, the impact of heat, altitude and other environmental stressors on exercise performance and safety, and the metabolic basis for measurements of oxygen uptake during exercise. The role of each body system in strength and endurance exercise performance will be considered.

BIO 107 Introduction to Field Biology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to the biology of the outdoors for the beginning student. Subjects such as trees and shrubs, wild flowers, insects, various animals, pond and stream life, and different Michigan terrestrial and aquatic communities will be covered. An outdoor journal and other similar activities will be stressed.

BIO 109 Essentials of Human Anatomy and Physiology **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; high school biology or BIO 101 or BIO 102, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is designed to provide an introduction to the essential elements of human anatomy and physiology. It is intended for students entering programs in allied health, including radiography, medical coding and orthotics and prosthetics. This course is not appropriate for pre-nursing students.

BIO 110 Introduction to Exercise Science **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will be introduced to the field of exercise science. The areas of exercise physiology, motor control, and biomechanics will be presented. Careers open to exercise science students will be explored.

BIO 111 Anatomy and Physiology - Normal Structure and Function **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; high school chemistry or CEM 090 and high school biology or BIO 101 or BIO 102; minimum grade "C" all BIO, CEM, and high school requirements

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course provides students with an intensive, in-depth introduction to the structure and function of all human body systems. The emphasis on basic physiological principles also provides students with a good base for more advanced courses. The laboratory provides dissections and experiments.

BIO 147 Hospital Microbiology **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is a brief introduction to topics in microbiology involving human health and disease. Biological characteristics of bacteria and viruses are described and selected pathogens are discussed. The innate and adaptive defenses of the human body against microbial pathogens are described. The course also discusses appropriate use of antimicrobics. Public health efforts to control pathogens are also discussed, including vaccination and infection control.

BIO 174 Biology Co-op I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Co-op courses provide students with worksite skills and experiences in an approved, compensated position related to their chosen field of study. Together, with an instructor, an employer, and the Workplace Learning Center, the student determines work assignments and learning objectives to connect learning with career-related work experience. Co-op experiences are coordinated by the Workplace Learning Center in conjunction with WCC faculty and cooperating employers. Registration for cooperative education requires attendance at a co-op orientation and the instructor's prior approval.

BIO 200 Current Topics in Biology — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Many issues in contemporary life are related directly or indirectly to biological science. This course is an introduction to scientific inquiry into some of these issues, which may include medical advances, global warming, environmental issues, agriculture, evolution, and space biology. Some topics are pre-selected by the instructor, but others may be chosen based on student interest.

BIO 201 Physiology of Exercise — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 109, BIO 110, or BIO 111

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

The purpose of this course is to introduce the basic principles of exercise physiology, including the physiological responses to acute and chronic exercise, the impact of heat, altitude and other environmental stressors on exercise performance and safety, and the metabolic basis for measurements of oxygen uptake during exercise. The role of each body system in strength and endurance exercise performance will be considered as well as the effects of regular exercise on health and aging.

BIO 208 Genetics — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 or BIO 102 and CEM 105 or CEM 111; minimum grade "C-" all BIO and CEM requirements

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Introduction to the basic principles of genetics and their application to viruses, bacteria, plants and animals, including humans. Classical and molecular genetics are covered, with emphasis on experimental and statistical evidence from which genetic mechanisms are deduced. Laboratory experiments demonstrate genetic principles. Students who have taken one year of high school chemistry with a grade of C or better may have the prerequisite waived.

BIO 212 Pathophysiology: Alterations in Structure and Function — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 111 minimum grade "B-" and BIO 147 or BIO 237, minimum grade "C-"; BIO 147 or BIO 237, may enroll concurrently

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

The focus of this course is the application of the concepts of normal anatomy and physiology to the study of the disease processes in humans. The course includes identification of the etiology and pathogenesis of disease, alterations in normal body function, and the reaction and adaptation of the body to disease. This course was previously HSC 220.

BIO 215 Cell and Molecular Biology — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 or BIO 102 and CEM 105 or CEM 111; minimum grade "C" all BIO and CEM requirements

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course explores the smallest unit of living things, the cell, at the molecular and genetic level. A comparative cellular examination of the three domains provides an understanding of similarities of cells, while further study investigates differentiation and variation which leads to the diversity of life. Molecular pathways are dissected in both prokaryotic and eukaryotic cells focusing on their regulation and control. DNA technology, including genetic analysis of genomes, genetic engineering, gene therapy and cloning are also investigated. Laboratory topics focus on cell types and differentiation, enzymatic specificity and control, cellular respiration and DNA/molecular techniques.

BIO 220 Human Genetics — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 minimum grade "C-"; consent required

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers basic principles of heredity and their relationship to humans. Included are the genetic basis of sexual dimorphism, classical pedigree studies, medical genetics, modern molecular genetics, genetic engineering, and human population dynamics.

BIO 225 Tests and Measurements in Exercise Science — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 110 and BIO 111 and BIO 201 and MTH 160, minimum grade "C"; BIO 111 may enroll concurrently

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

The purpose of this course is to integrate and apply the principles learned in the prerequisite courses. It trains students to evaluate the strengths and weaknesses of scientific research in the field of exercise science, gives students practical experience and expertise with widely used measuring instruments of physical performance and body composition, and prepares students for external certification examinations for personal trainer and health/fitness instructor.

BIO 227 Biology of Animals — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is an intensive study of the diversity, evolutionary and environmental relationships, structures and functions of the major animal groups. Animals are studied with an emphasis on comparative anatomy and physiology, behavior, and ecology. Lectures will incorporate interactive discussions and activities that address our current understanding of animal biology. Laboratory topics will focus on taxonomy and anatomy using models, live specimens, behavioral experiments and dissection. The title of this course was previously Zoology.

BIO 228 Biology of Plants — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

In this class, field and laboratory investigations provide detailed study of plant structure and function. It is for students with a general interest in plants or to provide a basis for further work in botany or other programs. Students with experience equivalent to BIO 101 may contact the instructor for permission to waive the prerequisite. The title of this course was previously Botany.

BIO 237 Microbiology — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

The structure of microbes that have a significant impact on humans is described and their genetics introduced. We discuss the epidemiology and prevention of infectious disease as well as events involved in immunity and pathogenesis within the body. Finally, we survey infectious diseases of major body systems. The lab introduces basic microbiological skills.

BIO 258 Field Study of Trees and Shrubs — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours

Trees, shrubs, and vines are studied and identified in this course. The natural history of these plants is also introduced, including reproduction strategies, environmental interactions, and relevance to humans.

BIO 259 Field Study of Common Plants **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

Non-woody higher plants are studied with emphasis on identification.

BIO 267 Winter Field Study **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours

This course is a study of life out-of-doors in winter. Topics such as plant and animal identification, observation, adaptations, and interrelationships are discussed. This class is especially for students with no previous background in biology and/or students who enjoy being outdoors and are curious about nature.

Business Management BMG

BMG 100 Investments **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is designed to acquaint students with the basics of financial investments. Topics include: stocks, bonds, mutual funds, investment banking, financial statement analysis, the stock market, and other phases of financial investments and services.

BMG 101 The Business of Your Career **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students examine the nature of business and the types of skills and attitudes needed for success. Students will acquire basic business skills and develop a plan for self-improvement. Students will also develop a plan for pursuing a career that recognizes the need to continually manage their life's work as a business. This course is intended for those students who have little practical business experience and would like to enhance their understanding of basic business concepts.

BMG 102 The Student Enterprise Zone **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 101 minimum grade "B" or equivalent experience

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students obtain hands-on experience in planning and running a small business by participating in the strategic planning and management of the Student Enterprise Zone's Web-based directory listing and showcase event. The Zone's directory listing is open to all WCC students with a product or service to sell who meet eligibility requirements. This course was previously BMG 209.

BMG 106 Legal Basics in Business **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for those students wishing to learn about legal issues that arise in business. In one course, students learn to apply fundamental legal principles and rules in order to "red flag" situations of potential legal liability and make suggestions for reducing legal risks, particularly as they apply to legal issues concerning the student's chosen trade or profession. Students learn to use legal resources readily available in the community and explore the nature of the relationship between business ethics and law. Students are expected to make use of computer technologies to learn in both an individual and collaborative environment. This course is appropriate for those students pursuing a trade or occupational career as well as those seeking to transfer.

BMG 109 Entrepreneurship I - The Essentials **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 099 with grade "P" and BMG 101 or equivalent work experience

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students examine the nature of a small business and the factors that contribute to the success of a business. Students are expected to work independently as well as in groups. Students should possess basic skills in computer literacy that would include the ability to use a word processing program, as well as to use the Internet, to send and receive e-mail and locate information on the Web. Students who lack significant previous work experience should take BMG 101: The Business of Your Career, before taking this course.

BMG 110 Credit Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory course in consumer and commercial credit practices, techniques, and regulations for most manufacturing and service industries. Students are shown how to develop credit policies and analyze pertinent credit data, collections, controls, and effects of bankruptcy.

BMG 111 Business Law I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course involves text and case study of the general laws applicable to business, covering the nature of law, courts and court procedures, contracts, real and personal property, wills, trusts, and negotiable instruments. This course is the first of two courses in business law and is appropriate for students intending to transfer. This course, when taken with BMG 122, Business Law II, provides an in-depth study of legal issues affecting business. Students are expected to make use of computer technologies to learn in both individual and collaborative environments using the Internet.

BMG 122 Business Law II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 111

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course involves text and case studies of agency relationships (including employment), formation and operation of partnerships, formation and operation of corporations, security laws, sales agreements, consumer rights, secured transactions, bankruptcy, computer law and international law. This course, when taken with BMG 111, Business Law I, provides an in-depth study of legal issues affecting business. Students are expected to make use of computer technologies to learn in both an individual and collaborative environment using the Internet.

BMG 130 Investment Strategies **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course designed to help existing or potential investors keep abreast of investment opportunities in today's changing financial world. This course presents current information on stock and bond markets, commodities, and real estate. Students are taught the mechanics of investing and how to analyze risk and return, financial statements, annual reports, financial services reports, mutual funds, and relate to the current tax structure. Students learn to read The Wall Street Journal and utilize the information to evaluate investments.

BMG 140 Introduction to Business — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers functions, objectives, problems, organization, and management of modern business. Also covered are the free-enterprise system of business-economic activity and the impact of the consumer and governmental forces upon the system. Students develop insight into the vital role of the administrative function in our economy as a whole and in the operation of a single business unit. A practical orientation is offered in the career opportunities available in business and industry.

BMG 150 Labor-Management Relations — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course acquaints students with factors affecting the labor-management relationships, develops insights into the growth, objectives and methods of organized labor and the significant managerial problems involved in dealing with labor. Analysis is done of the legal and institutional framework for collective bargaining; the nature, content and problem areas of the collective bargaining process and other labor relations problems.

BMG 155 Business on the Internet — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students examine how e-business is being conducted and managed, its major opportunities, limitations, issues, risks, and the special role that customer data plays in the development of e-business models. The course includes hands-on experience with online technologies similar to those used in e-business. This course is of interest to those seeking entry-level positions in the field of Web development as well as business managers and professionals.

BMG 160 Principles of Sales — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Basic selling techniques are taught and practiced through textbook learning, video demonstrations and practical role-play activities. Emphasis is placed on "how to sell" in the business work environment. Skills learned are appropriate for a variety of sales positions and can be utilized in any industry. Students learn to be effective and sell by building telephone prospecting skills, preparing customer presentation calls, handling customer objectives, and closing a sale. Business etiquette and understanding the basics in commercial contracts are also addressed.

BMG 174 BMG Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course students gain skills from a new experience in an approved, compensated, business-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two co-op courses.

BMG 200 Human Relations in Business — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course acquaints students with administrative principles and practices emphasizing the human relations aspect of management responsibility as it affects employee attitudes, morale, and productivity. Major emphasis is on relationships among individuals and/or small groups, with problem-oriented sessions used to realistically relate the course materials to the human relations aspect of modern business-industrial enterprise.

BMG 201 Entrepreneurship II - Market Planning — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 109 minimum grade "C-", may enroll concurrently or equivalent business experience

Level II Prerequisites: CIS 099 with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students learn how to identify a target market that provides a continuous competitive advantage to the small business owner by performing market research. Students will complete a plan of marketing which includes an evaluation of profit potential. This course was previously BMG 292.

BMG 207 Business Communication — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

By studying the principles, processes and strategies underlying effective business communication, students will develop career-enhancing oral, written, and nonverbal skills. Emphasis is placed on planning, creating and transmitting business information within a variety of business situations found in the global marketplace. Students will prepare routine correspondence, reports, resumes, and formal business presentations.

BMG 210 Money, Banking and Financial Institutions — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course in the functions of finance. The course offers a definition of money including its characteristics and component parts. It identifies how the money supply expands and contracts based upon the inter-workings of the financial system. Also discussed is the effect of national and international financial practices on the consumer and business. Other topics include a comparison of the different types and purposes of various financial institutions, the Federal Reserve system, National Fiscal Policy, and how various monetary controls influence the supply of money; credit availability; forecasting interest rates; how to calculate investment yields and security prices; and stock market reactions based upon inflation and changes in the money supply. Banking and lending practices for business and consumers are emphasized and correlated to credit policies and examples of documentation forms. This course is recommended for business students.

BMG 215 Planning an E-Commerce Business — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 155 and INP 290, minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students prepare an E-commerce business plan suitable for presentation to decision makers. This includes an examination of the strategies used by management to develop and implement an E-commerce site, the process involved in planning and maintaining the Web site, attracting and maintaining customers, and measuring success. Students who have equivalent work experience may contact the instructor to waive the prerequisites.

BMG 220 Principles of Finance — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ACC 101, ACC 111, or ACC 122

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course surveys the basic concepts of finance that provide the foundation for successful real world financial management practices. Emphasis is on financial tools required to operate a business. Included is the role of the economy and its effect on interest rates, commercial banking practices, commercial credit, cash management, lending practices, financial statement analysis, time value of money, forecasting, budgeting, capital budgeting, sources of financing, lease vs. purchase, leverage, inventory controls, valuation of rates of return, investment banking, international finance, and bankruptcy. The course is intended to prepare students for advance studies in finance and practical application of financial principles.

BMG 230 Management Skills **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers management concepts and principles that supervisors and managers use in daily activities. Students will acquire the skills needed to plan, organize, staff, and control an operation. Structured and creative approaches to problem solving will be explored. This course contains material previously taught in BMG 208 and BMG 230.

BMG 240 Human Resources Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers essential human resources activities that must be managed in any organization: employee retention, staffing, compensation, job evaluation, performance management, collective bargaining, safety, employee rights, benefits, pensions, and employment laws.

BMG 241 Innovation: Process and Application **1 credit**

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

Students will use a process to develop knowledge and skills needed for an innovative mindset. Innovation, as a process, is useful to inventors, artists, entrepreneurs, employees, and managers. Concepts and exercises focus on key, practical, and usable processes and applications. Topics include: identifying and addressing unmet needs of a user group and generating ideas that become an innovation of value.

BMG 250 Principles of Marketing **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a study of our market-directed system with emphasis on the managerial level. Primary emphasis is on marketing strategy, planning in relationship to product, place, promotion and price. The concepts of economic fundamentals, marketing arithmetic, service and international marketing are incorporated.

BMG 265 Business Statistics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 5; CIS 110 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces the concepts of statistics and their applications to business decisions. Topics include elements of probability, random samples, descriptive statistics, sampling distributions, point and interval estimation, hypothesis testing, and regression and correlation analysis. Emphasis is on collection and analysis of data needed to evaluate reported results of statistical studies and making sound business decisions.

BMG 272 Problem Solving **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course examines problem solving techniques and methods used in today's work place. Students gain experience in using both critical and creative thinking approaches to problem solving in both individual and team settings.

BMG 273 Managing Operations **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the fundamental processes of managing and controlling a variety of operations. It includes concepts in operations management that are recognized as important factors in business such as work processes, project management, scheduling and inventory management, quality tools, managing human resources on projects and in teams, and customer management. It is recommended that students have basic supervision knowledge obtained from previous coursework or work experience.

BMG 274 BMG Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, business-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

BMG 279 Performance Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to provide the student with the human performance skills needed to develop people in an environment that recognizes that they are an organization's most valuable resource. Through the use of skill building exercises and case analysis, the learner will develop knowledge and skills to plan, monitor, measure, motivate, improve and reward performance.

BMG 291 Project Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the final course in the Management Supervision program. Topics include financial analysis, forecasting, aggregate planning, and the process of project planning and implementation. Using project management software students are able to plan and track projects that meet an organization's operational, human resource, and costs needs. In addition, students learn to communicate and collaborate with team members on projects across an organization.

Business Office Systems BOS

BOS 101A Introduction to Keyboarding **1 credit**

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is the first in a series of three keyboarding courses. This course teaches students to keyboard by touch and develop speed, accuracy, and proper techniques on the alphabetic keys. This course is offered only in a self-paced format.

BOS 101B Intermediate Keyboarding **1 credit**

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is the second in a series of three keyboarding courses. It is designed for students who have completed BOS 101A or who can key a minimum of 24 wpm. Students increase their speed and accuracy, improve their technique, and learn to touch key the number and symbol keys. Students are evaluated early and may be placed in BOS 101A or BOS 101C based on the results of the evaluation. This course is offered only in a self-paced format.

BOS 101C Advanced Keyboarding 1 credit

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is the third in a series of three keyboarding courses. It is designed for students who have completed BOS 101B or who can key a minimum of 33 wpm. Students increase their speed and accuracy, improve their technique, and learn to touch key the number and symbol keys. Students are evaluated early in the course and may be placed in BOS 101A or BOS 101B based on the results of the evaluation. This course is offered only in a self-paced format.

BOS 107 Office Administration I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: BOS 101C minimum grade "C" or 3 minute typing test minimum score 33 GWAM

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is useful to students entering the world of business for the first time, as well as those workers currently employed in business-related occupations. In this course, students learn a variety of general job functions which will assist, inform, and train them for office careers. These include processing of office mail, handling telephone and faxing services, records management, and proofreading and editing skills. Students learn job-hunting procedures and prepare for employment in the clerical field through an understanding of the changing business world. To be successful in this class students should be familiar with Windows and keyboard at least 30 gross words a minute.

BOS 130 Office Financial Applications 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The ten-key computer pad as well as computer spreadsheet software and electronic business calculators are used to solve a variety of business problems, which include payroll, with serious attention given to efficient operation, and verifying techniques. Emphasis on the use of business mathematics makes this course useful for both business and personal applications.

BOS 157 Word Processing and Document Formatting I 3 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course teaches word processing and document formatting using Microsoft Word. Skills include formatting and editing documents; using grammar and thesaurus functions; applying character, paragraph, and section formatting; preparing headers and footers; using file management procedures; preparing labels and envelopes; and formatting columns. The application of word processing concepts and functions to current business environments is stressed. Students should be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 174 BOS Co-op Education I 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Eight credits in BOS discipline, minimum 2.0 GPA; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, business-related position. Together with the instructor, the employer, and the co-op placement office, students determine work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two-co-op courses.

BOS 182 Database Software Applications 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course teaches database concepts and applications using Microsoft Access. Skills and concepts include creating databases; creating and customizing tables and forms; creating, formatting, and enhancing reports; querying and maintaining databases; publishing reports to the Web; enhancing forms; and filtering data. Applying database concepts and functions to business environments is stressed. Students should be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 183 Spreadsheet Software Applications 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course teaches spreadsheet concepts and applications using Microsoft Excel. Skills and concepts include creating, formatting and editing a worksheet; entering formulas and using Excel functions; preparing charts; creating templates, workbooks, and Web pages; creating and using macros; sorting and filtering worksheet databases; and creating data maps and pivot tables. Applying spreadsheet concepts and functions to business environments is stressed. Students should be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 206 Scheduling and Internet Office Applications 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides an introduction to the operational and technical aspects of microcomputer communications using Microsoft Outlook and Netscape Communicator. Topics covered include sending and receiving e-mail; electronic scheduling, organizing appointments, meetings, and events; maintaining an address book; and using the Internet for common business tasks. Students should be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 207 Presentation Software Applications 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course teaches presentation software concepts and applications using Microsoft PowerPoint in a Windows operating system. Skills and concepts include creating, editing, formatting, and enhancing presentations; using outline view and clip art to create a slide show; using embedded visuals to enhance a slide show; enhancing a presentation with interactive OLE files; and creating Web pages. Applying presentation software concepts and functions to business environments is stressed. Students should be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 208 Desktop Publishing for the Office 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a hands-on approach to developing skills in the use of Microsoft Publisher desktop publishing software to create office flyers, newsletters, brochures, bulletins, and related materials. Students use templates and styles and import material created from other software programs. Creating Web documents and posting them to a Web site is covered. Students import images from a scanner and a digital camera and are introduced to image-editing techniques. Good layout techniques are applied to produce documents that communicate effectively in business environments. Students must be familiar with Windows and have keyboarding skills of at least 25 wpm.

BOS 210 Medical Transcription 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSC 101

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This medical transcription course is for students who have some proficiency in keyboarding and medical terminology. Emphasis is placed on the correct use of medical terms; the correct application of writing rules including capitalization, word usage, and punctuation; the efficient use of hardware including a computer, printer, and transcription machine; the formatting of typical medical documents; the use of medical resources; and the knowledge of current employment opportunities in medical transcription.

BOS 223 Medical Office Procedures 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers administrative assistant responsibilities in a traditional and computerized medical office or hospital including appointments, patient records, telephone procedures, and credit and collection procedures. Medical insurance is studied as well as legal considerations in a medical office. Students complete forms for Blue Cross/Blue Shield, Medicare, Medicaid, Workers' Compensation, CHAMPUS, and major insurance carriers using the proper coding system. Students should be familiar with Windows and have keyboarding skills of at least 30 wpm.

BOS 224 Medical Office Insurance and Billing 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSC 101 minimum grade "C-"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is for those interested in a career in the medical office as a medical assistant or insurance biller/coder. The course covers the fundamentals of health insurance, including plan options, carrier requirements, state and federal regulations, selecting relevant information from source documents, accurately completing claim forms, and coding diagnoses and procedures. The learner will practice completing claim forms for Medicare/Medicaid, Blue Cross/Blue Shield, and commercial carriers.

BOS 225 Integrated Office Applications 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BOS 257

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to provide practical study and advanced training in Microsoft Office. Emphasis is given to advanced office practice in repetitive correspondence, letter merging, general office and presentation forms, statistical documents, filing and sorting databases, electronic mail, and telecommunication. Application of advanced Microsoft Office concepts and functions to business environments is stressed. Students must be familiar with Windows and have keyboarding skills of at least 30 wpm.

BOS 250 Office Administration II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers many functions of a business office. Emphasis is placed on the expanding duties of an administrative assistant including time management, business composition, and human relations skills. Continued importance is placed on verbal and written communication. Teamwork, office environment, etiquette, and ergonomics are other topics covered. Specialized office documents are prepared. The role of technology in a business office is continually explored and applied. Students should be familiar with Windows and keyboard at least 30 wpm to be successful.

BOS 257 Word Processing and Document Formatting II 3 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently

Level II Prerequisites: BOS 157

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the second of two courses in word processing and document formatting. It introduces students to advanced word processing formatting and functions such as macros, styles, templates, graphics, Web pages, versions, forms, WordArt, Draw, outlines, indexes, and mail merges. The formatting of memos, letters, reports and specialized documents according to current business standards is emphasized throughout the course. Students must be familiar with Windows and have keyboarding skills of at least 25 wpm.

Chemistry CEM

CEM 090 Introductory Chemistry 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course offers a basic exposure to the general concepts of chemistry and provides an introduction to best practices and procedures in a chemical laboratory. Students with no background in high school chemistry or algebra, or students wishing to improve their chemistry background should take this class before taking CEM 105 or CEM 111. This course contains material previously taught in CEM 057 and CEM 058.

CEM 105 Fundamentals of Chemistry 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3; high school chemistry or CEM 090, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Students with an interest in nursing or other health related areas, or needing a general science elective find that this broad survey of the major topics in chemistry meets the requirements of their program.

CEM 111 General Chemistry I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3; high school chemistry or CEM 090, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course covers the major topics in chemistry. Laws of chemical combination, states of matter, atomic and molecular structure, bonding, and other basic principles are covered. It is for students in a professional or pre-professional curriculum.

CEM 122 General Chemistry II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4; CEM 111 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This is the second of a two-course sequence in general chemistry for pre-professional and liberal arts students. The course develops concepts of chemical kinetics, chemical equilibrium, chemical thermodynamics, and nuclear chemistry. Laboratory exercises are included to assist students in understanding the above topics.

CEM 140 Organic Biochemistry — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CEM 105 or CEM 111, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

An introduction to both organic chemistry and biochemistry for nursing and other health services students. Major topics covered are the structure and functional groups of organic compounds, structures of biological molecules, mechanism of enzyme-catalyzed reactions, equilibria involved in the exchange and transport of oxygen and carbon dioxide, acid-base balance, and bioenergetics.

CEM 211 Organic Chemistry I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CEM 122 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is the first in a two-semester sequence in organic chemistry. It provides students with a background in nomenclature of organic compounds, stereochemistry, preparation and reactions of aliphatic and aromatic compounds. Students also practice the preparation and handling of organic compounds in the laboratory.

CEM 222 Organic Chemistry II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CEM 122 and CEM 211, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course continues the exploration of nomenclature, stereochemistry, preparations, and reactions of organic and biological compounds. Students will apply these techniques to the synthesis and spectroscopic analysis of complex organic compounds. Laboratory work includes hands-on spectroscopic analysis of various organic compounds.

Child Care Professional — CCP

CCP 101 Child Development — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a general overview of the physical, social, emotional and intellectual development of the child from conception to maturity with emphasis on the preschool years. It examines the environmental, ethnic and familial factors that make for group differences and individuality of growth, and reviews current research in these areas.

CCP 113 Health, Safety and Nutrition for Child Care — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Best practices in health, safety and nutrition are presented. Students develop specific competencies in these areas including establishing and maintaining a healthy, safe child care program, planning nutritional meals and snacks, and teaching children and their parents about health, safety and nutrition. Communicable diseases, government funded child/family food and nutrition programs, playground and toy safety, and resources for the child care provider are included.

CCP 122 Child Development Credentialing I — 4 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides part of the formal training for the national child care credential, The Child Development Associate (CDA). Students cover six of the thirteen functional areas of the CDA competency standards: safety, health, learning environment, physical and cognitive development and communication. Students must be at least 18 years of age and have a high school diploma or GED to register for this course. Concurrent enrollment in CCP 132 or regular access to a licensed child care program is required to complete assignments.

CCP 123 Child Development Credentialing II — 4 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides part of the formal training for the national child care credential, The Child Development Associate (CDA). Students cover seven of the thirteen functional areas of the CDA competency standards: creativity, self, social, guidance, families, program management and professionalism. Students must be at least 18 years of age and have a high school diploma or GED to register for this course. Concurrent enrollment in CCP 133 or regular access to a licensed child care program is required to complete assignments.

CCP 124 CDA Assessment Preparation — 1 credit

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently; consent required

Corequisites: CCP 134

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course helps candidates for the national Child Development Associate Certificate prepare for assessment. Students will receive assistance with preparing the Professional Resource File and preparing for the Early Childhood Studies Review. Students must have completed 120 clock hours of approved instruction in the 13 CDA functional areas and eight subject areas required by the CDA Council and submit proof of this training.

CCP 132 Child Development Practicum I — 1-2 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently; CCP 122 minimum grade "C", may enroll concurrently; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

This course provides a supervised work experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: safety, health, learning environment, physical and cognitive development, and communication. Students are required to be employed in a licensed child care program with infants and toddlers or preschoolers, or licensed family child care home. Observations will be completed at the work site by a practicum instructor during regular hours of operation using the standards for the Child Development Associate national child care credential.

CCP 133 Child Development Practicum II 1-2 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently; CCP 123 minimum grade "C", may enroll concurrently; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

This course provides a supervised work experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: creativity, self, social, guidance, and families. Students are required to be employed in a licensed child care center with infants and toddlers or preschoolers, or a licensed family child care home. Observations will be completed at the work site during regular hours of operation using standards for the Child Development Associate national child care credential.

CCP 134 Child Development Practicum III 1 credit

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently; consent required

Corequisites: CCP 124

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

This course provides a supervised work experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: safety, health, learning environment, physical and cognitive development, communication, creativity, guidance, self, social, families, program management, and professionalism. Students are required to work in a licensed child care center with infants and toddlers, preschoolers, or a licensed family child care home. Observation will be completed at the work site during regular hours of operation by an instructor who meets CDA advisor requirements using standards for the Child Development Associate national child care credential.

CCP 160 Foundations of Child Care and Early Education 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an overview of the theories and philosophies that have shaped modern child care and early childhood education programs. A history of the field, current issues and future developments in the profession are covered. State licensing requirements and national accreditation standards are emphasized in relationship to establishing and operating programs for children from birth through age twelve.

CCP 200 Working with Parents 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course explores the many facets of parent and staff involvement in the child care setting. Topics include: various forms of parent participation, ways of increasing positive communication with parents, cultural differences and goals of parents, and planning parent involvement programs. Emphasis is given to the preparation, mechanics and techniques for the individual parent/teacher conference and parent meetings. This course should be taken during the last semester of the program or after 50 credits have been completed. It is recommended that students take CCP 101 prior to this course.

CCP 209 Curriculum for Young Children 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an overview of developmentally appropriate curriculum creation for young children. State licensing requirements and national accreditation standards are emphasized in relationship to establishing and operating programs for children from birth through age twelve.

CCP 210 Child Guidance and Classroom Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This comprehensive course focuses on child guidance and classroom management for the child care provider and adults working with preschool and elementary school aged children in educational and recreational settings. Emphasis is placed on the social and emotional development of children birth through age 12 and developmentally appropriate guidance strategies. This course meets Positive Behavior Support Standards for the Michigan Department of Education (2000). Current work experience with children age 12 or younger is required. This course was previously CCP 110.

CCP 218 Advanced Child Care Seminar 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

Corequisites: CCP 219

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

Students learn about the role of the head child care provider, plan and evaluate extended sequences of activities for young children, and analyze and evaluate practice for developmental appropriateness. Students must meet with the CCP program advisor the semester before enrolling to confirm eligibility and select the appropriate work. This course should be taken during the last semester of the program or after 50 credits have been completed.

CCP 219 Advanced Child Care Practicum 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

Corequisites: CCP 218

0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours

Students take increasing responsibility in the child care setting and assume the role of head child care provider for a minimum of two weeks. Students develop activities and learning materials suitable for young children, implementing developmentally appropriate practice in the work place. Students are placed in licensed group child care settings. Student must meet with a program advisor prior to enrolling in the course to arrange placement. This course should be taken during the last semester of the program or after 50 credits have been completed.

CCP 251 Education of Exceptional Children 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101, PSY 100, PSY 200, PSY 206, or HSC 147, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents an overview of the major categories of exceptionality. Methods for identifying and working with children in child care, recreational and educational settings are explored. Working with an interdisciplinary team and partnering with parents is a major focus. A working knowledge of resources, a comfort level for working with exceptional children and their families, and exploring the roles of professionals who work with exceptional populations are stressed. This course was previously CCP 100.

Collision Repair Technician CRT

CRT 200 Refinish Technician I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This advanced refinishing course was developed to aid students who would like to continue their training for possible employment in the collision refinishing industry. Intricate, hard-to-paint automobile parts, such as front bumpers, side mirrors and door handles will be areas of focus. Techniques on proper spray-gun operation and set up, along with specialized polishing procedures, will be covered. Other course topics include the use of "job specific" tooling that aids in the "jigging" of small parts and information on the uses and application of various forms of masking materials. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CRT 201 Collision Technician I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

Advanced repair techniques such as damage analysis; the use of computerized frame equipment; panel sectioning and non-structural collision repair, will be covered in this course. Live lab activities will include proper tool selection and information concerning the replacement of collision damaged steering, suspension, and power train components. Additional information relating to set up procedures of full-frame and unitized body vehicles will be presented. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CRT 220 Refinish Technician II **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This course provides crucial final detail and inspection information that the modern refinish technician must know in order to effectively release a vehicle back to its owner. Using collision industry standards as a guide, students will learn how and why different shops use various levels of final detailing. Additional topics such as interior and exterior care, buffing, glazing, waxing, overspray removal, leak detection, engine bay reconditioning and preparing vehicles for resale, will be covered. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CRT 221 Collision Technician II **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This course will introduce the student to outer panel replacement that may include quarter panels, box sides, door skins, rocker sections, core supports, and various other weld-on panels. Selection and proper application of tools and equipment will be emphasized. Presentation will be provided as to the various types of collision structural damage, frame rack set-up and measurement including diagnostics and theory of repair. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CRT 240 Refinish Technician III **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

The object of this course is to provide students with the problem solving and time management skills needed to efficiently mask a vehicle for various spray operations. Actual vehicles, used as training aids, will compliment information presented on masking for primer, paint, and spot repairs. Current information concerning color theory and how to effectively tint solid and metallic colors to achieve a blend-able color match will also be discussed. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CRT 241 Collision Technician III **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CRT 201, CRT 221, and WAF 289 minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course covers the repair of structurally damaged conventional framed and unitized body automobiles and light trucks. Topics such as vehicle set-up procedures and the use of hydraulic frame straightening equipment, along with body and frame construction will be covered. Information concerning air conditioning, heating, suspension and mechanical component replacement as related to the collision repair industry is also presented.

CRT 260 Refinish Technician IV **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CRT 200, CRT 220, and CRT 240, minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course was developed to provide advanced collision refinishing training as it is applied in "real world" situations. Students will perform light to medium level refinishing operations on Washtenaw Community College owned vehicles that are to be slated for resale. Solid and metallic base-coat/clear-coat and single stage paint systems will be areas of focus. Panel refinishing, blends, and "cut-ins" will be some of the topics covered.

CRT 261 Collision Technician IV **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CRT 201, CRT 221, and WAF 289, minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This capstone course provides students with advanced information concerning structural and non-structural body replacement. Students, working in a "live shop" setting will repair crash damaged vehicles back to pre-accident condition. Subjects covered include current panel bonding materials and procedures, resistance welding, specialty tooling, panel removal/replacement techniques, and the application of corrosion inhibitors such as body sealers and rubberized undercoats.

CRT 280 Refinish Technician V **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CRT 200, CRT 220, and CRT 240, minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

Through the use of actual vehicles, students will learn advanced refinishing techniques. Repairs will be presented in a "real world" scenario where students, with guidance of instructors and staff, will perform various collision refinishing operations. Information concerning theory of paint blending, planning and set-up of single and multi-stage blend repairs, overall vehicle refinishing, and the techniques used to accomplish these tasks will be presented.

Communication COM

COM 101 Fundamentals of Speaking 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Through the use of practical experience, students acquire the essential speaking and listening skills which are the most sought-after skills in the work world. Students work to relieve the stress which the average person encounters in public speaking. Students will learn organizational and delivery skills, as well as gaining a heightened awareness of the relationship between a speaker and an audience.

COM 102 Interpersonal Communication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This interactive course introduces basic aspects of interpersonal communication that influence the quality of personal and workplace relationships. Aspects of ineffective communication behaviors that create misunderstanding are presented. The impact of effective and ineffective interpersonal communication in various contexts is analyzed, and communication tools designed to evaluate conflicts, reduce misunderstandings and to improve interaction with others are applied.

COM 130 Introduction to Mass Communication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This survey course introduces students to the technological evolution of mass media and its impact on audience attitudes, as well as how it influences our society's economic, social, and political climates. Major emphasis is placed on the history, theory, and criticism of the various mediums, including radio, television, film, and Web-based media. The course attempts to create a more 'critical' consumer of mass media.

COM 142 Oral Interpretation of Literature 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This performance-based course provides an introduction to analyzing and vocally/physically communicating thoughts and emotions contained within various literary genres. Emphasis is placed upon the selection and analysis of literature, script preparation, reducing performance anxiety, and developing the vocal and physical delivery skills necessary to achieve the communicative intent of literature in performance.

COM 150 Introduction to Radio Production 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a performance-based class that introduces the student to the basic fundamentals of radio/audio production, scriptwriting, announcing, and radio history. Emphasis is placed on the skills, techniques and concepts involved in electronic audio media, including operation of equipment and radio programming.

COM 155 Scriptwriting for Broadcast Arts 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Scriptwriting for Broadcast Arts is designed to give students practical experience in writing styles for the various genres of the broadcast industry. Through practical exercises and projects, students will become familiar with various writing techniques, developing broadcast writing skills and applying those skills to the creation of news stories, editorials, interviews, narration, transitions, feature writing, public service announcements, and commercials. Students will also be exposed to current trends in the industry and given the opportunity to critique those trends and theorize on upcoming styles.

COM 160 Voice and Articulation for Broadcasting 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This performance-based course introduces basic verbal and non-verbal communication aspects that are appropriate for radio and television announcing. Emphasis is placed upon voice quality, kinesics, copy analysis, and preparation for electronic recording of copy.

COM 170 Advanced Radio Production 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; COM 150 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give students a working knowledge of all aspects of a radio station, including Federal Communication Commission rules, licensing regulations, station genres, networks, and programming. Students will also be acquainted with the day-to-day workings of a station, as well as producing a variety of programs for various situations. Students will build upon the basic production skills gained in COM 150, as well as gain experience in various radio production rules.

COM 183 Persuasion 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; COM 101

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students strengthen their ability to prepare and deliver dynamic speeches using today's computer generated graphics and other presentation skill techniques. Being organized to prevent information overload and displaying enthusiasm for the presentations are keys to success in public speaking. The title of this course was previously Advanced Public Speaking.

COM 200 Family Communication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Family issues are at the forefront of national concerns, particularly in governmental, educational, and religious arenas. In this course, students learn the foundations of family communication through definitions and theories on how families work. Students will learn how families identify themselves through the creation of and practice of personal narrative and the genogram. This course also examines the ways in which family members interact in healthy and unhealthy ways to meet life's challenges and the ways media, government, and religion influence the family.

COM 225 Intercultural Communication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course allows students to explore communication between members of different cultures. During the course, students will become familiar with the ways that nonverbal and verbal communication influence intercultural relationships. Students will share cultural similarities and differences and will discuss ethical ways to use communication in order to construct a bridge between cultures.

COM 235 Broadcast Arts Practicum **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; COM 155, COM 160, and COM 170 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

Students will spend scheduled production time in the areas of writing, editing, announcing, and producing to gain experience in the day-to-day duties of radio production professionals. Students will complete an electronic portfolio (demo reel) of their best work as part of an audition package to submit to potential employers and/or internships. The title of this course was previously Practicum: Orchard Radio.

COM 240 Broadcast Arts Internship **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Broadcast Arts program; consent required

15 lecture, 0 lab, 0 clinical, 150 other, 165 total contact hours

Broadcast Art students will work in conjunction with a local broadcasting station to gain experience in the broadcasting industry. Students will be exposed to and work in many areas within a station including but not limited to marketing and promotions, programming, sales, and engineering. Students will acquire working knowledge of the day-to-day operations within each of these departments as well as of industry terminology and practices.

Computer-Aided Drafting CAD

CAD 101 Introduction to AutoCAD **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an introduction to the use of AutoCAD software (CAD program candidates should choose CAD 111). This course was previously IND 216.

CAD 103 Introduction to 3D CAD **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is a software based course designed to teach the student 3D Solid Based software. The user will learn how to create solid model parts using various modeling techniques. From the solid model, the student will learn how to create solid assemblies, assembly drawings and detail drawings. This course is not part of the CAD certificate or AAS programs. This course was previously IND 217.

CAD 105 Blueprint Reading and Analysis **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course reviews all engineering drawings used in an industrial setting. Students learn to read, sketch, and use various types of engineering documentation. They review and sketch machine drawings, sheet metal layouts, cast and forged drawings, hydraulic and pneumatic schematics, industrial-based electrical schematics and diagrams, piping layouts and schematics, and welding and fabrication drawings. Students learn the national drafting standards as they apply to each discipline and learn to apply any related mathematics as required on drawings. This course was previously IDD 111.

CAD 109 Theory of Dies **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a survey course designed to introduce students to the major types of dies used in manufacturing, their components, and design parameters. This course was previously IDD 113.

CAD 111 CAD I-Detailing **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course is an introduction to the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of material specifications, drawing numbering systems, tabulated drawings, auxiliary views, sectioning, screw threads and fasteners. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of assembly and detail drawings, and parts lists for various manufacturing disciplines. AutoCAD software will be featured.

CAD 111A CAD IA - Detailing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours

The purpose of this course is to offer apprentices and other qualified individuals an introduction to the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of the isometric, oblique, orthographic projection sketches and drawing, auxiliary views, sectioning and dimensioning practices. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of detail drawings. AutoCAD software is featured.

CAD 111B CAD IB - Detailing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours

The purpose of this course is to offer those who have completed CAD 111A and other qualified individuals a continuation of instruction in the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of material specifications, drawing numbering systems, tabulated drawings, screw threads, and fasteners. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of assembly and detail drawings, and parts listed for various manufacturing disciplines. AutoCAD software is featured. Students with equivalent work experience may contact the instructor for permission to waive the prerequisite.

CAD 113 CAD II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CAD 111 minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers practices and procedures for creating assembly and detail drawings from given layouts using CAD. An introduction to principles of 3D design is included with emphasis on the use of standard parts.

CAD 115 Descriptive Geometry **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 111 minimum grade "C" or equivalent

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

Points, lines and planes and their relationships in space are studied, with emphasis on practical application of principles to actual problems in industry. This course was previously IND 112.

CAD 174 Co-op CAD Drafting I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 111, CAD 113, and CAD 115, minimum grade "C"; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This course was previously IND 174.

CAD 211 CAD III **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 113 minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course introduces the student to the basics of feature-based parametric solid modeling. This course covers 3D construction techniques such as extrude, revolve, loft, and sweep. Solid models will be used to produce dimensioned detail and assembly drawings conforming to industry standards.

CAD 213 Mechanisms **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 111 and CAD 113

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

The principles of gears, cams, flexible drive systems, linkages, and other mechanical means to transmit motion and energy are studied. Included in this course are graphical and mathematical techniques used to solve for force, displacement and motion application problems. Students are also required to use computer related programs such as Excel and CAD to complete the application problems. Students with equivalent work experience may contact the instructor for permission to waive the prerequisites.

CAD 215 Geometric Dimensioning and Tolerancing **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 113 may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers the language of Geometric Dimensioning and Tolerancing (GD&T) as governed by the ASME Y14.5M, 1994 Dimensioning and Tolerancing Standard. This application based course covers the rules, practices, and symbology that is outlined in the national standard. Specifically, students learn how to set up a datum reference framework, apply the 14 geometric controls, and analyze the obtained tolerances gained from applying GD&T. Students with experience equivalent to CAD 113 may contact the instructor for permission to waive the prerequisite. This course was previously IND 123.

CAD 217 Mechanical Design **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CAD 113 or CAD 211, minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

The purpose of this course is to give students an opportunity to experience the complete design process as it is practiced in industry. Given a design problem, the student will develop a product from ideation through prototype. The student will accomplish this task using problem solving techniques, teamwork, and other engineering design techniques. CAD skills will be demonstrated by delivering 3D models, detail drawings, and a functional prototype, as well as jig and or fixture drawings for part production. The student will deliver a presentation promoting their solution to the problem.

CAD 219 Theory of Jigs and Fixtures **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: MTT 111 minimum grade "C"

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

The design and use of jigs and fixtures for purposes of workholding and quality control is studied and applied. Emphasis is placed on the student's ability to develop a practical design including proper locating and clamping principles for given parts. This course was previously IDD 211.

CAD 221 CAD IV **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 211 minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course provides the student with advanced feature-based parametric solid modeling skills. The course covers 3D construction techniques unique to sheet metal parts, molded parts, weldments, and castings. Solid models will be used to produce dimensioned detail and assembly drawings conforming to industry standards. Animation tools will be used to create exploded views and presentations.

CAD 274 CAD Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CAD 174 minimum grade "C"; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

CAD 280 The Basics of Part Modeling **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Industry experience or completion of postsecondary CAD training

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students learn fundamental concepts and applications of the I-DEAS Master Series (SDRC) tool set. The course specifically focuses on the creation and modification of a 3D part or model. Students learn to navigate through the extension user interface, work with various sketch planes and reference geometry, create wireframe sketches, constrain those wireframe sketches through the use of geometric constraints and model dimensions, and then extrude or revolve those sketches into 3D solid parts. Use of the I-DEAS data management system is also covered.

Computer Information Systems CIS

CIS 099 Computer Literacy **1 credit**

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course teaches all competencies required by the Washtenaw Community College Computer and Information Literacy associate degree graduation requirement. If students have not met this requirement by passing the Computer and Information Literacy test, they may meet it by completing this course and passing the final exam. Competencies covered include, but are not limited to, basic word processing, file management, information evaluation, and email. Basic computer concepts such as operating systems, hardware and software, networks, and legal and security issues are also taught.

CIS 100 Introduction to Computers and Software Applications **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This class covers basic computer literacy and the fundamentals of using office productivity software. The office productivity software covered is Word, Excel, PowerPoint, and Access. Other topics covered include Windows fundamentals, Web concepts, email concepts, computer hardware, operating systems, software applications, viruses, and purchasing a computer. Class format includes hands-on work on the computer.

CIS 110 Introduction to Computer Information Systems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: A working knowledge of spreadsheet and database software or CIS 100.

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The course covers the principles of information systems for business majors. It provides an overview of information systems including a review of computer concepts, how technology is used in business, the information systems discipline, and the systems development life cycle. Students need a working knowledge of applications software and keyboarding to be successful in the course.

CIS 117 Windows Operating System 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course covers the use of an operating system with a graphical user interface to maintain, troubleshoot, repair, and customize a microcomputer system. Respect for the rights of others and proper security measures are also discussed. Windows XP is currently used in the course. The course contains material previously taught in CIS 116 and CIS 117.

CIS 121 Linux/UNIX I: Fundamentals 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Completion of a CIS (above CIS 100), CPS, or CSS course

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces UNIX and Linux tools to the experienced computer user and to those with only a basic knowledge of computers. The course covers the UNIX/Linux file system, communication with other users, editors, file manipulation and processing, basics of pipes and redirection, simple shell programming, introduction to the X windows system, and a basic introduction to Linux.

CIS 174 CIS Co-op Education I 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Two courses in CIS discipline, minimum grade "C"; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

This course recognizes the value of learning which takes place on the job by offering college credit for development and achievement of learning objectives which are accomplished through current work experiences. Students also participate in monthly work related activities, such as meetings or seminars.

CIS 179 XML Applications 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: high school word processing and spreadsheets or CIS 100 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The student learns the purpose and structure of the eXtensible Markup Language (XML), and surveys XML-based markup systems for diverse communities of interest. The student becomes familiar with the operating philosophy and activities of groups responsible for XML-based standards in at least one technical, business, or academic field. The focus is on learning to apply XML-based coding to information in a specific field, preferably one in which the student is, or expects to be, employed.

CIS 206 Linux/UNIX II: Basic System Administration, Networking, and Security 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 121

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the second of four courses on the Linux operating system. Linux System administration tasks are discussed and practiced. This course is designed to help prepare students for Linux Certification Exams. Students should be familiar with common Linux distributions and should be comfortable with basic installation and configuration to succeed in this course.

CIS 208 Linux/UNIX III: Intermediate System Administration, Networking, and Security 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 206 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the third of four courses on the Linux operating system. Linux networking theory is discussed and practical application of the theory is shown through lab exercises. Students should be familiar with common Linux distributions and comfortable with system administration activities to succeed in this course. This course is designed to prepare students for Linux Certification Exams.

CIS 210 Linux/UNIX IV: Advanced System Administration, Networking, and Security 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 208

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the fourth in a series of four courses on the Linux operating system. Linux security, ethical considerations, and privacy issues are discussed. Practical application of security theory is taught through lab exercises. Students should be familiar with common Linux distributions, system administration, and networking to succeed in this course. This course is designed to prepare students for Linux Certification Exams.

CIS 212 Linux/UNIX V: Advanced Topics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 210

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers advanced areas such as single sign-on, Web file access, iSCSI, rpm package management, red hat proxy, grid computing, and cluster computing. It concludes with an advanced project in Linux/UNIX system administration.

CIS 221 Linux/UNIX Programming and Scripting I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 121

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students learn to use UNIX more efficiently with advanced forms of the commands and utilities covered in CIS 121, as well as new commands and constructs. Advanced forms of topics begun in CIS 121 include sed, grep, awk, perl, and how to effectively use regular expressions, as well as constructs and special commands used in writing shell scripts. New topics covered include functions, traps, arithmetic on variables, and input/output techniques.

CIS 222 Linux/UNIX Programming and Scripting II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 221

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers advanced shell programming topics as well as an introduction to awk, perl, and php.

CIS 238 Computer Organization 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 161, CPS 171, or CPS 185, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to basic concepts of computer hardware and organization including: computer structure, digital representation of data, Boolean algebra, elementary digital memory and arithmetical circuits, instruction execution and interrupts. Students will write programs in an assembly language using a simulator. This title of this course was previously PC Assembly Language.

CIS 265 Programming the Web 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: INP 150 minimum grade "C" or basic HTML knowledge

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is intended for students who have a knowledge of problem solving techniques as applied to programming languages and a basic knowledge of HTML. Topics covered include creating HTML forms, Common Gateway Interface (CGI), programming using Perl (process data from the form), basic JavaScript for verifying form data, and the setup of a simple Web server.

CIS 269 Java Certification Preparation 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 171 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an intense presentation of the fundamentals of the Java programming language to students who already have a good knowledge of C++. The goal of the course is to prepare students to pass the Sun Java Certification Exam. Content includes language basics, object oriented concepts, threads, exceptions, string manipulation, Input/Output (I/O), Graphical User Interface (GUI) concepts, event handling, and collection classes.

CIS 270 Perl Programming 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 265 minimum grade "C" or basic PERL knowledge

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class will cover Perl in depth. Topics include program design and programming style, Perl syntax and language, functions, complex data structures, regular expressions, debugging, modules, and use of objects. A wide range of real-world examples will be used to demonstrate Perl programming principles followed by short assignments in and out of class.

CIS 274 CIS Co-op Education II 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 174 minimum grade "C"; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course students gain skills from a new experience in an approved, compensated, computer-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

CIS 278 Java Server Programming 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 269 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers some of the key Java 2 Enterprise Edition (J2EE) concepts. The main focus will be on Java Servlets, Java Server Pages (JSP), Java Bean Fundamentals and Java Database Connectivity (JDBC). Additional topics covered can include Remote Method Invocation (RMI), Java E-mail, SQLJ (an implementation of the SQL database query language in Java), and JSP tag libraries. Students taking this class should have a good knowledge of Java Fundamentals, and some knowledge of simple HTML and simple SQL.

CIS 279 XML Programming 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 269 and INP 150, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course, XML related programs are developed in Java and Javascript. XML concepts (DTD, CSS, XSL, and DOM) are also covered. Students must have a working knowledge of Java and HTML to succeed in this course. Javascript and Dynamic HTML concepts are taught based on the prerequisite knowledge of Java and HTML.

CIS 282 Relational Database Concepts and Application 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 120, CPS 171, CPS 185, or CIS 265, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introduction to relational database theory and practice. Topics covered include terminology, normal forms, design of database tables, SQL (structured query language), and application generation. The student will incorporate SQL in procedural files to program applications. This course is intended for anyone possessing a basic knowledge of programming who is interested in database theory and practice. Prerequisites will be checked on the first day of class. The title of this course was previously Small Systems Database.

CIS 286 UNIX Systems Administration 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 121 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Concepts and technical knowledge of operating systems, utilities and control languages are presented with hands-on experience using the UNIX operating system. Topics covered include startup and shutdown, user accounts, security, automating routine tasks, managing system resources, file systems, back-ups, devices, and networking.

CIS 288 Systems Analysis and Design 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 171 or CPS 185, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course surveys computer applications and techniques in major areas of business, business structure, analytical communication with system users, principles of package software evaluation and acquisition, planning schedules and resource requirements for software development, and producing software development specifications. Software for data and process modeling will be introduced and used. Several approaches to system planning and development will be examined. Prerequisites will be checked on the first day of class.

CIS 290 Microcomputer System Support **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Twenty credit hours in Microcomputer System Support program

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the final course in the Microcomputer System Support program. Students gain problem solving skills, practice user training techniques, and consolidate knowledge required for serving as a Microcomputer Systems Support Technician. Prerequisites will be checked on the first day of class.

CIS 291A Introduction to Oracle SQL **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 282 minimum grade "C" and CPS 171, CPS 185, or CIS 265, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is intended to instruct the student in the use of Structured Query Language (SQL) as implemented by Oracle Corporation. Students learn how to create and maintain database objects. Using SQL*Plus and iSQL*Plus, students learn how to retrieve, change and delete data from a SQL compliant database. The student is further introduced to database concepts, as implemented by Oracle, including recovery, domain integrity and referential integrity. This course also prepares the student for the Oracle Certification examination 1Z0-007, Introduction to 9i SQL. This course is the first half of the previous course CIS 291.

Computer Networking Technology CNT

CNT 201 Administering Microsoft Windows XP Professional **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CST 225, CNT 206 or CIS 117, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give students a strong foundation in installing, configuring, and administering Windows XP Professional. Topics covered include configuring file systems, security, networking protocols, and network printing. Performance tuning and troubleshooting will be taught, with an emphasis on the boot process and application support. A basic understanding of Windows XP Professional and networking principles are required.

CNT 206 Internetworking I - Fundamentals **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CST 118, CST 150 and CST 225, minimum grade "C", equivalent experience, or minimum score 80% on departmental exam

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is part of the CISCO networking curriculum at WCC. It prepares students for a portion of the CISCO Certified Network Associate (CCNA) certification examination. Students learn the fundamentals of the Open Systems Interconnect (OSI) model and the basics of computer networking including contemporary network services, transmission media, and protocols. The most common implementations in today's Local Area Networks (LANs) and Wide Area Networks (WANs) are used. This course was previously CNT 200.

CNT 211 Administering and Managing Microsoft Windows Server **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 201 or CSS 180, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course will give a student a strong foundation in the setup and configuration of Microsoft Windows Server and Active Directory, which are the main components in Microsoft Networking structure. Emphasized topics are Active Directory installation and configuration, user and group account control, hardware implementation, security permissions, disk management, including RAID configurations, printer installation and configuration, DFS and quota implementation, and various group policy implementations.

CNT 216 Internetworking II - Routers **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CNT 206 minimum grade "C-"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is part of the CISCO networking curriculum at WCC. It prepares students for a portion of the CISCO Certified Network Associate (CCNA) examination. Students gain the knowledge and skills to install, configure, update, and troubleshoot network routers. This course was previously CNT 225.

CNT 221 Implementing a Windows Server 2003 Network Infrastructure **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CNT 211 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give students a strong foundation in installing, configuring, and administering Windows 2003 server networking services. Topics covered include Telnet, DHCP, DNS, WINS, and remote access server, using Windows 2003 server as a router, IPSEC, network address translation, and certificate server. The course also emphasizes the basics of TCP/IP and IP addressing, including classful/classless addressing and subnetting basics.

CNT 224 Microsoft ISA Administration **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 211 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the installation, configuration, administration, and management of Microsoft's Internet Security and Acceleration Server (ISA). Two main proxy server functions are emphasized firewall security, and Web page caching.

CNT 226 Internetworking III - Switches **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 216

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is course is part of the CISCO networking curriculum at WCC. It prepares students for a portion of the CISCO Certified Network Associate (CCNA) certification examination. The course also provides students with the knowledge and skills necessary to install, configure, update, and troubleshoot switched Local Area Networks (LANs) and Virtual Local Area Networks (VLANs). Other skills include migration from RIP to IGRIP, IGRP configuration, routing of Novell IPX, and security via the implementation of Access Control Lists. This course was previously CNT 235.

CNT 236 Internetworking IV - WANs **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 226 minimum grade "C-"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is part of the CISCO networking curriculum at the College. It prepares students for a portion of the CISCO Certified Network Associate (CCNA) Certification Examination. The course focuses on advanced IP addressing techniques such as Network Address Translation (NAT), Port Address Translation (PAT), DHCP, and WAN technology and terminology, including PPP, ISDN, DDR, Frame Relay, network management, and introduction to optical networking. In addition, the student will prepare for taking the CCNA Exam. This course was previously CNT 245.

CNT 241 Microsoft Exchange Server Administration **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CNT 211 or equivalent

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course gives students the knowledge and practice necessary to establish an exchange server environment, ranging from one-server organizations to large enterprises with multiple exchange servers. Student proficiency in the planning, installation, configuration, monitoring, backup and troubleshooting of exchange servers is the primary goal. The course also provides initial preparation towards the Microsoft MCSA/MCSE Elective Exam.

CNT 246 Advanced Routing Configuration **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 236 minimum grade "C+"

Level II Prerequisites: Computer Networking Academy I Certificate or Cisco CCNA Certificate

50 lecture, 30 lab, 0 clinical, 0 other, 80 total contact hours

This course prepares students for a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to configure various routing protocols such as IGRP, EIGRP OSPF and BGP. In addition, students learn how to configure routers to enhance network security. This course was previously CNT 255.

CNT 251 Designing Windows Security **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 211 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course students learn to identify the security risks associated with managing resource access and data flow on the network and describe how Windows 2003 features are used to secure a network and its resources. The student will learn to plan a Windows 2003 administrative structure that facilitates secure and verifiable user account management; define security requirements for Windows 2003 based domain controllers, application servers, file and print servers and workstations; design end-to-end security for the transmission of data between hosts on the network; design a strategy for securing access for non-Microsoft clients within a Windows 2003 based network; design a strategy for securing local resources accessed by remote users; and design a strategy for securing local resources accessed by remote offices.

CNT 256 Remote Access Networks **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 246 minimum grade "C+"

50 lecture, 30 lab, 0 clinical, 0 other, 80 total contact hours

This course prepares students to complete a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to configure various remote access technologies including backup to permanent WAN connections, optimizing traffic on dedicated WAN connections, and scaling IP addresses. This course was previously CNT 265.

CNT 266 Multi-Layer Switching **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 256 minimum grade "C+"

50 lecture, 30 lab, 0 clinical, 0 other, 80 total contact hours

The course is part of the CISCO networking curriculum at WCC. It provides students with the knowledge and skills necessary to configure, supervise, manage, and troubleshoot various Virtual Local Area Networks. This course was previously CNT 275.

CNT 276 Network Troubleshooting **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 266 minimum grade "C+"

50 lecture, 30 lab, 0 clinical, 0 other, 80 total contact hours

This course prepares students for a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to troubleshoot a wide variety of LAN and WAN configurations. This course was previously CNT 285.

Computer Science CPS

CPS 115 Introduction to Programming with 3D Animation **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory course in programming using a 3D animation environment. The student learns basic programming techniques using Alice, a 3D animation tool designed to teach algorithmic thinking and abstraction using on-screen movies and games. Programming topics include sequential, decision and iterative control structures, functions, recursion, lists, objects, and inheritance. This course also introduces the student to basic animation concepts such as storyboarding and lighting.

CPS 120 Introduction to Computer Science **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to computer science for those planning to take advanced courses in the computer field. This course is recommended for those planning to take programming courses. Students write, enter, compile, and execute simple computer programs. This course is intended to bridge the gap between a basic computer literacy course and advanced courses.

CPS 161 An Introduction to Programming with Java **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4; CIS 100, CIS 110, CIS 121, or CPS 120, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to provide an introduction to the Java programming language. The focus will be on problem solving strategies, algorithm development and verification with test data, programming style, and documentation techniques in simple programming examples. The content of this course includes object-oriented concepts, string manipulation, input/output (I/O), graphical user interface (GUI) concepts, and event handling. This course was previously CIS 175.

CPS 171 Introduction to Programming with C++ — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

Level II Prerequisites: CIS 100, CIS 110, or CPS 120, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is an introduction to programming using the C++ language. Students should have basic experience using a computer but no prior programming is required. Students learn about problem solving strategies, top-down program development and programming style. Topics include sequential, decision and iterative control structures, functions, basic data structures and an introduction to classes. Students write and execute approximately eight C++ programs. Students with computer experience equivalent to CIS 100 or CIS 110 may contact the instructor for permission to waive the CIS prerequisite.

CPS 185 Introduction to Visual Basic .Net Programming — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

Level II Prerequisites: CIS 100, CIS 110, or CPS 120, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is an introduction to programming using the Visual Basic .Net Programming language. Students should have basic computer experience, but no prior programming is required. Subjects covered include: creating forms containing several types of controls, setting form and control properties, designing and writing code containing control structures of sequence, selection and iteration. Built-in functions, subroutines and methods will be used, and user defined functions and subroutines (with parameters) will be written. Arrays will be used and files will be read and written.

CPS 261 Programming Data Structures in Java — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 161 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the second course in the Java programming language focusing on software engineering, methodology. Topics covered include class inheritance, nested procedures and functions, run-time exemptions, processing binary data files, scope, and recursion. Data structures such as stacks, queues, linear lists, trees, sets, and files will also be covered. Searching and sorting algorithms will be analyzed.

CPS 271 Object Features of C++ — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 171 minimum grade "C+"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course continues the study of C++ begun in the prerequisite course. Students learn the object-oriented features of the language. Topics include classes, constructors and destructors, operator overloading, pointers, dynamic allocation of memory, inheritance, polymorphism, file manipulation, templates, and exceptions. Prerequisites will be checked on the first day of class.

CPS 272 Data Structures with C++ — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 271 minimum grade "C" or equivalent industry experience

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the third of a sequence of C++ courses, following CPS 171 and CPS 271. The course covers more advanced computer science features as implemented in C++. Topics include testing, verification and complexity of algorithms, recursion, advanced data structures, class libraries, and techniques for team design of large programs.

CPS 276 Web Programming Using Apache, MySQL, and PHP — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 171 or CPS 185 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers Web server programming and database access from the Web. Students taking this class should have knowledge of SQL (Structured Query Language), HTML (Hypertext Markup Language), and a programming language such as C++ , Visual Basic, Java, or Perl. Students will learn to work with the Apache Web server in a Unix environment. Web applications that will access a MySQL database will be developed with the PHP programming language. To achieve an efficient and secure solution for accessing databases from the Web, the students will learn and utilize the following concepts: cookies, persistent database connections, and secure sockets.

CPS 277 Game Programming — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 269, CPS 261, CPS 271, or CPS 293, minimum grade "B"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

The goal of this class is to teach useful technology in a gaming production environment. The following topics will be addressed: object-oriented programming; working in teams; multitasking; image processing; animations; networking; audio file processing; physics principles; testing; using pre-existing libraries of software; and documentation. The course will be structured to recreate an industrial software development environment.

CPS 285 Advanced Visual Basic .Net Programming — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 185 minimum grade "C" or equivalent industry experience

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of the CPS 185 Visual Basic course, and is intended for students with a basic understanding of Visual Basic .Net. Among the topics to be addressed in this course are: classes, database access, the MDI interface, user defined controls and error checking.

CPS 293 C# .NET — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 171 or CPS 185, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course assumes some programming experience and will cover the fundamentals of the C# language and the Microsoft .NET architecture. Language fundamentals will include C# basics and object oriented techniques such as polymorphism, properties, exceptions, events, collections etc. Graphical User Interfaces (GUI) will be covered using forms and Graphics Data Interface (GDI+). Data access techniques will be covered including I/O classes, database Active-X Data Objects (ADO), and Web pages using Active Server Pages (ASP).

CPS 295 Advanced C#.Net and ASP.Net — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CPS 293 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of CPS 293 and is intended for students to learn more advanced skills in C#. Class projects will include many advanced features of Microsoft Visual Studio 2005. There will be a special focus on making full use of the C# language using XML, database, Web services and other technologies. Additional focus will be on creating reusable code, using object oriented techniques such as encapsulation, inheritance, interfaces, delegates and polymorphism.

Computer Systems Security CSS

CSS 180 Computer Security for PC's 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is intended to provide a strong introduction to the field of computer systems security by providing lecture and hands-on exercises in securing a PC system. Topics covered include power-on self test, hard disk technology, data formats, operating system loading, command line interfaces, basic concepts in network security and operation, virus, worm and Trojan horse attacks, encryption, system hardening, CMOS configuration, firewalls and physical security.

CSS 200 Information Assurance I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides a solid grounding in computer security essentials. Topics to be covered include understanding security measures, techniques for securing systems, legal issues, basic intrusion detection and recovery methods. This is the first of a series of computer security courses. This course assumes an intermediate level of computer knowledge and experience.

CSS 205 Information Assurance II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CSS 200 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course introduces the network security specialist to the various methodologies for attacking a network. The student will be introduced to the concepts, principles and techniques, which will be supplemented by hands-on exercises for attacking and disabling a network. These methodologies are presented with the concept of how to properly secure a network. The course will emphasize network attack methodologies with an emphasis on student use of network attack techniques and tools.

CSS 210 Managing Network Security I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CSS 205, CNT 206, and CNT 216, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course teaches students to design and implement security solutions that reduce the vulnerability of computer networks. The student is introduced to the various methods for defending a network. Topics include concepts, principles, types, packet filtering with ACLs and context-based access control, AAA, intrusion detection, VPN, and PIX firewall implementation. The student is also prepared for the Managing Cisco Network Security, Cisco PIX Firewall Advanced, and Security+ Exams.

CSS 212 Fundamentals of Secure Wireless Local Area Networks 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CNT 216 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a component of the curriculum of the Cisco Network Academy and teaches students to develop, implement, troubleshoot, and secure wireless networks. Topics covered include: a primer on radio frequency transmission, current market technologies, wireless design best practices, site survey procedures, equipment configuration techniques, building wireless networks, and methodologies for securing wireless networks.

CSS 215 Managing Network Security II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CSS 210 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course will expose the student to various defense methodologies associated with Virtual Private Networks (VPN), Host Intrusion Detection Systems, and Network Intrusion Detection Systems (NIDS). Students will also be introduced to the best practices associated with properly securing critical business network systems using VPNs.

CSS 220 Network Security Design 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CSS 215 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course affords the network security specialist the opportunity to conduct a vulnerability analysis upon a network using attack methodologies learned by the student in previous courses. The student must demonstrate the ability to design, plan and execute a vulnerability analysis against an organizational network. The student must prepare a written report about the security design, attack methodology, and the tools and techniques used.

CSS 240 High-Technology Crime 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Designed for those seeking advancement in the computer security profession, this course provides an introduction to the most common high-technology crimes including computer intrusion theft of information and theft of computer components. Additional topics covered include principles of high-technology crime investigations, investigating computer intrusion, searching, seizing and analyzing computer evidence from a legal view, federal privacy laws and computers, and the fourth amendment.

CSS 270 Computer Forensics I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CSS 180, CSS 200, and CSS 205, minimum grade "C+"

40 lecture, 20 lab, 0 clinical, 0 other, 60 total contact hours

This course deals with the preservation, identification, extraction, documentation and interpretation of computer data. Topics covered indulge evidence handling, chain of custody, collection, preservation, identification and recovery of computer data using forensic recovery software and methods.

CSS 275 Computer Forensics II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CSS 270 minimum grade "B"

40 lecture, 20 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of CSS 270, Computer Forensics I, and includes forensic analysis of Linux file systems, and introduces additional various forensic analysis software suites used to perform forensic analysis of FAT 16, FAT 32, and NTFS file systems.

Computer Systems Technology CST

CST 118 MS Command Line Fundamentals 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 100 minimum grade "C" or equivalent

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course prepares students to use Microsoft command-line functions and utilities to perform typical tasks required of a PC service technician or network administrator. Students learn to use the command-line to work with files and directories, manage and back up disk drives, create emergency boot disks, and develop operating system startup configuration files. In addition, students will create and use batch files to automate routine configuration, maintenance, and network management tasks including backing up files to a network drive and printing to a network printer. Students in the Computer Systems Technology program should take CST 118 either before or concurrently with CST 150. This course was previously ELE 118.

CST 150 Computer Systems Technology I 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 100 minimum grade "C" or equivalent

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Through hands-on experiences, this course prepares students to install, configure, upgrade, and troubleshoot personal computers. Students learn the fundamentals of PC hardware including the motherboard, power supply, CPU, memory, storage devices, add-on cards, BIOS, and CMOS. In addition, students learn the fundamentals of the Windows 9x/Me operating system including operating system functions, structure, major system files, and the basic boot sequence. Students in the Computer Systems Technology Certificate program should take CST 118, either before or concurrently with this course. This course was previously ELE 150.

CST 155 Computer Systems Technology II 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CST 150 minimum grade "C" or equivalent

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Through hands-on experiences, this course builds on the student's knowledge of personal computer installation, configuration, upgrading, and troubleshooting. Students learn both fundamental and advanced techniques in working with the Windows NT/2000/XP operating system. Students apply their understanding of the operating system's functions and structure, and employ common diagnostic utilities and tools, to identify steps to correct system problems. This course was previously ELE 155.

CST 225 PC Networking 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 100 minimum grade "C"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course provides a foundation in Local Area Network (LAN) and Wide Area Network (WAN) knowledge and skills appropriate for setting up and maintaining a home or small business network. Topics include wireless networking, DSL/cable/analog modems, IP addressing and routing, network printing, and network troubleshooting. Students are prepared for advanced study in our CISCO and Microsoft certification programs and are provided with a strong foundation for taking the CompTIA Network + Exam. This course contains material previously taught in ELE 216A and ELE 225A.

Construction Management CMG

CMG 130 Construction Site Safety and MIOSHA Regulations 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers both the application of safe work practices and the Michigan Occupational Safety and Health Act (MIOSHA) standards as they apply to construction site safety. Topics include: personal protective equipment; hand, portable and stationary power tools and equipment; construction site safety; MIOSHA standards; HAZMAT; and an investigation into the philosophical, social, economic, and technological bases for safety.

CMG 150 Introduction to Construction Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This course covers an introduction to developing, planning, and scheduling construction projects. Additional topics include: site development; material usage; specifications; estimating; and managing cost control.

CMG 170 Construction Graphics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CMG 150 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers basic print reading skills for residential and light commercial/industrial projects. It includes symbols and conventions, terminology, print organization, and basic material take-off techniques. It will include refinement of basic sketching and drawing skills.

CMG 180 Application of Construction Materials 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CMG 150 minimum grade "C"

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

The purpose of this course is to give students an overview of the basic properties and use of construction materials. Students will be required to attend lecture and lab to analyze basic materials that include: soils, concrete, masonry, steel, wood, plastic, finishes, and thermal.

CMG 200 Construction Systems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CMG 170 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers structural systems, associated non-structural components, and consideration appropriate to mechanical, electrical, plumbing, and support equipment.

Construction Technology CON

CON 103 Residential Painting I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the first in a series of courses that cover fundamentals of residential painting. Topics include basic safety, painting equipment, paints and coatings, surface preparation and application techniques.

CON 104 Residential Construction I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 75 lab, 0 clinical, 0 other, 105 total contact hours

This is an introductory course in residential construction. It teaches skills and knowledge which support advanced certificates in construction-related fields. Topics include: job site safety; basic hand and power tool operation; reading of construction documents; and residential carpentry layout practices. Students will develop competencies in carpentry and fastening, as well as the safe and practical use of hand power tools used in residential construction and building industries.

CON 105 Residential Construction II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 75 lab, 0 clinical, 0 other, 105 total contact hours

This course covers the construction of interior partitions, wall openings, windows and doors. Ceiling joists and rafter systems, layout procedures, print interpretation and installation techniques are included to support the lab activities. Students must show job safety skills.

CON 106 Math, Measurement, and Graphics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students learn construction math formulas, review basic fraction problem solving for construction, basic construction measurement, and graphic communication used in construction.

CON 128 Wall Covering and Decorating Techniques **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The concepts of paint applications and techniques, special applications, material handling and storage, and site and equipment maintenance are covered.

CON 130 Commercial Property Maintenance I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to increase the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial property. This includes institutions, hospitals, hotels, malls, residential rental property, both single and multifamily, resorts, and office buildings. This course was previously TRI 131.

CON 133 Commercial Property Maintenance II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course addresses the skills and knowledge required to successfully maintain and repair commercial properties. This course was previously TRI 133.

CON 135 Commercial Property Maintenance III **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course addresses the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial properties. This course was previously TRI 135.

CON 137 Commercial Property Maintenance IV **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course addresses the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial properties. This course was previously TRI 137.

CON 170 Cabinetry and Millwork I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 105 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students will apply basic tool set up and operation for all hand and stationary tools necessary to complete fabrication and veneer application. There will be a focus on proper use and assembly of the materials. These techniques will be used for identifying and preparing rough and manufactured lumber for further working into panels, lathe and molding blanks, doors, drawers and miscellaneous components. Each student will build a cabinet from rough lumber, incorporating a fitted drawer and a frame and panel door using a raised panel, hung on mortised butt hinges. The title of this course was previously Introduction to Cabinetry and Millwork I.

CON 173 Cabinetry and Millwork II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 170 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

In this course students will apply tool set up and operation for advanced hand and stationary tools. These techniques will be used for identifying and preparing rough lumber, manufactured lumber, and plastics for working into complex assemblies. There will be a focus on using the vacuum press and other techniques to fabricate curved and freeform components. Each student will produce at least one piece of furniture or millwork of appropriate complexity; this project is chosen by the student consultation with the instructor. This course was previously TRI 171. The title of this course was previously Cabinet Making Princples and Concepts.

CON 174 CON Co-op Education I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated position in the field of construction. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

CON 175 Cabinetry and Millwork III **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 173 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

The students will build upon the skills learned in prerequisite courses with a goal of creating and manufacturing an entire piece of furniture from rough lumber, manufactured lumber, and plastic. The focus will be to complete the construction of a piece of furniture of appropriate complexity. Students will further their mastery of hand and machine tool maintenance. This course was previously TRI 271. The title of this course was previously Cabinet Making Fabrication.

CON 190 Building Codes and Quality Control **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Open to Construction Management majors only

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will explore the code requirements for constructing private residences and investigate the quality control issues that parallel the code.

CON 204 Residential Construction III **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 105 minimum grade "C", may enroll concurrently

30 lecture, 75 lab, 0 clinical, 0 other, 105 total contact hours

This course covers the installation of interior finishes for residential construction. Topics include insulation and drywall applications, interior trim materials and installations, cabinetry planning and installation, and paints and floor finishes.

CON 205 Residential Construction IV **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 105 minimum grade "C", may enroll concurrently

30 lecture, 75 lab, 0 clinical, 0 other, 105 total contact hours

This course covers the theory and application techniques for exterior systems, roof covering systems and lot and site finishes. Topics include siding and veneer application systems, roofing and water distribution systems, and final lot and site planning finishes.

CON 220 Residential Construction Licensing, Contracts, and Start Up **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 205 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will be given instruction for taking the State of Michigan Builders License Exam, writing legal construction contracts for projects, and the planning required for starting a residential construction business.

CON 230 Residential Construction Production **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 205, CON 220, and CON 255, minimum grade "C"; CON 220 and CON 255, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces the production aspect of residential construction. Students will be using house plans to estimate materials, schedule trades, and prepare quality control "punch lists" based upon materials and trades used. Topics include residential construction materials, estimating, scheduling and quality control.

CON 240 Advanced Trim and Interior Finish Techniques **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 205 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students learn proper installation techniques for inter trim systems including stairs, handrails, crown molding, cabinetry detailing, and built-up trim details.

CON 250 Cabinet Shop Management and Fundamentals **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 175 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students learn about job cost tracking, mechanical detailing, and plan execution.

CON 255 Residential Construction Concrete and Exterior Finishes **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 205 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students will have hands-on experiences with concrete and exterior finishes. Topics include concrete footings, walls and slabs, and exterior veneer installation techniques.

CON 260 Residential Construction Remodeling **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 205 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Students learn about residential construction layouts and details needed for remodeling projects. Topics include: existing home layout; demolition; rebuilding; and finishing techniques.

CON 274 CON Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

CON 275 Cabinetry and Millwork IV **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 175 minimum grade "C"

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Using various finishing materials (oil-based, shellac, lacquer, modern resin, catalyzed and multi-part systems) students will learn how to prepare cabinetry and millwork materials for finishing. The course will include detailed explanations of wiped, rolled, brush and spray applications of cabinet and furniture finishes. Students will learn finishing techniques using proper industry set up and safety standards. The title of this course was previously Finishing Concepts and Processes.

Criminal Justice CJT

CJT 100 Introduction to Criminal Justice **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of crime in America, as well as all three components of the criminal justice system i.e., law enforcement, courts, and corrections.

CJT 110 Emergency Telecommunication **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

80 lecture, 0 lab, 0 clinical, 0 other, 80 total contact hours

The goal of this course is to provide participants with basic skills in public safety communication. Communication skills, telephone and dispatch techniques, legal issues and CPR skills are some of the topics covered in the course.

CJT 111 Police/Community Relations **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The role of the individual officer and the department in achieving and maintaining public support is studied. Topics include: customs, culture, and problems of ethnic and minority groups. Public information services, and techniques for the alleviation of community tensions are also covered.

CJT 120 Criminal Justice Ethics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a normative ethics course that examines values and issues relevant to success in the criminal justice area. The course includes personal values clarification, historical ethics and applied ethics.

CJT 160 Criminal Justice Constitutional Law 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

A comprehensive examination of key provisions of the US Constitution with emphasis on those areas affecting the rights and privileges of individual citizens (e.g. those imparting procedural law). A historical approach is adopted to give students a complete understanding of the mutable nature of the Constitution and those factors which impact it. This course was previously CJT 112.

CJT 208 Criminal Evidence and Procedure 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an examination of the criminal justice judicial process, including the roles of defense attorneys, prosecutors and judges. It emphasizes the rules and laws governing the admissibility of evidence, as well as the law governing criminal procedure.

CJT 209 Criminal Law 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the history and philosophy of the development of criminal law in America. It is also an in depth examination of the elements of traditional crimes, based upon the common law and the Model Penal Code. The course covers the theoretical challenges and defenses to criminal liability.

CJT 221 Law Enforcement Training 16 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; minimum 45 credits with 2.0 GPA and pass MCOLES test; consent required

459 lecture, 406 lab, 0 clinical, 0 other, 865 total contact hours

The successful completion of this course is mandatory for anyone seeking law enforcement licensing in the State of Michigan. The Michigan Commission on Law Enforcement Standards (MCOLES) and the WCC Police Academy Advisory Committee have created the course content. The WCC Student Handbook, the MCOLES Policy and Procedure Manual, and the WCC Police Academy Daily Rules and Regulations will govern student conduct. The police academy is structured as an adult learning experience, and will require significant self-discipline on the part of the student. Teamwork is required. Just as a sworn law enforcement officers operate under a code of honor which requires them to be above reproach in ethics and behavior, students will also be held to this same standard. MCOLES pre-enrollment is a corequisite of this course.

CJT 223 Juvenile Justice 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The course is an in depth examination of the juvenile justice system, including law enforcement, courts and corrections. It emphasizes the history and philosophy of a separate justice system. This course also surveys the theories of causation of juvenile delinquency, juvenile victimization, and intervention strategies.

CJT 224 Criminal Investigation 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will be introduced to the science of criminal investigation. They will become familiar with the methodology of crime scene investigations, evidence collection, preservation, and analysis. Included are the rudiments of follow-up investigations, interviews, interrogations and report writing. Techniques applicable to investigation of specific crimes will be highlighted.

CJT 225 Seminar in Criminal Justice 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a unifying experience and evaluation of criminal justice systems, policies and practices. Preparation of a concluding research paper is required for this course. The focus is on analytical thought processes and problem solving.

Culinary Arts CUL

CUL 100 Introduction to Hospitality Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give students an overview of the hospitality industry and opportunities in the industry today. It is an introduction to the study of the business organization and functions of management. On-site tours of the hospitality industry will be coordinated.

CUL 110 Sanitation and Hygiene 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course communicates the importance of sanitation to the hospitality worker: layman's bacteriology, communicable diseases, food poisoning, pest control, cleaning and sanitizing, and personal hygiene. Students who complete this course and pass the exams receive National and State Sanitation Certification. CUL 110 is a requirement in all of the culinary programs and should be taken the first semester a student begins any culinary program.

CUL 114 Baking I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 minimum grade "C", may enroll concurrently

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course introduces students to basic theory, practices, and production techniques required to produce quality baked goods, such as yeast raised and quick breads, pies, cakes, and cookies. Emphasis is placed on time management, safe food handling, storage, and proper utilization of ingredients and equipment.

CUL 115 Pastry I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 minimum grade "C", may enroll concurrently

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

The student learns to produce contemporary pastries applicable to the foodservice industry. Emphasis is placed on basic baking and pastry production. Lectures, demonstrations, and practical applications of a pate a choux specialties, gateaus, sauces, custards, mousses, churned and still frozen desserts are emphasized.

CUL 118 Principles of Nutrition 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

General principles of nutrition are discussed in this course as they pertain to selection of foods, nutritional needs of all age groups, the meaning of food to people, the relationship of food and nutrition to menu planning.

CUL 120 Culinary Skills 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 minimum grade "C"; may enroll concurrently

Corequisites: CUL 121

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

This course introduces the student to the principles of quantity food production, fabricating techniques recipe conversions, costing, product identification and classical culinary skills. The student will develop the skill to operate and care for equipment, along with maintaining a safe and sanitary environment. In addition, this course will provide a solid foundation in covering the basics of food service and food technology. This course contains material previously taught in CUL 111.

CUL 121 Introduction to Food Preparation Techniques 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 may enroll concurrently

Level II Prerequisites: Serv Safe Certificate

Corequisites: CUL 120

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

This course is an introduction to the basic concepts, techniques, terminology, and methods involved in the preparation, presentation, and portioning of various food and menu items. Students rotate through the stations of a commercial kitchen gaining experience in knife skills, food production, food preparation, recipe understanding, and the overall operation of a restaurant kitchen. The course focuses on ala carte, cooked to order foods, as well as some quantity food production, the cookery process, food presentation, portioning, and teamwork. This course contains material previously taught in CUL 111.

CUL 124 Baking II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 114

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course builds on principles and production techniques learned in Baking I, CUL 114. Students learn more complex production skills in the preparation of sweet and savory specialty breads, chiffon's mousse, custard pies, egg foam based cakes, pate choix products, doughnuts, Danish and puff pastry. Students with experience equivalent to CUL 114 may contact the instructor for permission to waive the prerequisite.

CUL 125 Pastry II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 115 or CUL 124

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

The student continues to learn contemporary desserts and pastries. Emphasis is placed on holiday desserts, hot and cold plated desserts, confectionery, chocolate and sugar show pieces, and management and interpersonal skills.

CUL 132 Basic Cake and Wedding Cake Design 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 minimum grade "C", may enroll concurrently

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

The course is designed to teach elementary cake decorating techniques. Students will learn proper preparation for frosting and will demonstrate a variety of applications. The courses progresses into advanced techniques including rolled fondant, lace pieces, ruffles, borders, gum paste flowers, and wedding cake construction. CUL 130 and CUL 131 have been combined to form CUL 132.

CUL 135 International Cuisine and Culture: A Study Abroad 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 10 lab, 0 clinical, 0 other, 25 total contact hours

The course will focus on different aspects of the cuisine and culture of an international destination. Emphasis will be placed on how food and art influence lifestyle and culture. Students will explore how geographical and cultural components shape the use of different food products, cooking methods, service styles and other factors that have lead to the current cuisine and culture.

CUL 140 Bakery Management and Merchandising 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 15 credit hours in Baking and Pastry program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Students understand and develop merchandising techniques through analysis of current competitive practices used in bakeries. They prepare bakery products and promotional projects such as newspaper ads, brochures, press releases and the basics of arranging display cases. Proper control of processing frozen dough products and the theory and application of no-time doughs and mixes used in commercial bakeries are covered, along with management principles and practices of the industry.

CUL 150 Food Service Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 may enroll concurrently

Corequisites: CUL 151

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

The purpose of this course is to provide a full service restaurant laboratory for students to apply theory and techniques related to restaurant job descriptions, guest service strategies and management trends. The students will be given the opportunity to earn certifications in Techniques of Alcohol Management (TAM) and CPR.

CUL 151 Food Service Marketing 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 may enroll concurrently

Corequisites: CUL 150

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

Students demonstrate personal sales strategies as they operate a full service restaurant lab. Guest speakers, tours, and classroom discussions will follow the lab covering topics related to functions of marketing such as promotion, advertising, and public relations.

CUL 174 CUL Co-op Education I 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 15 credit hours in program; consent required

10 lecture, 0 lab, 0 clinical, 120 other, 130 total contact hours

In this course students gain skills from a new experience in an approved, compensated, culinary arts-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two co-op courses.

CUL 210 Gardemanger 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 120 and CUL 121

25 lecture, 50 lab, 0 clinical, 0 other, 75 total contact hours

The student will demonstrate classical food preparation and presentation as they relate to the cold food kitchen (Gardemanger) and buffet display. Students will plan and prepare buffet foods for 35-40 persons based on a specific theme. Students will demonstrate the methods related to the preparation of cold foods, pates, terrines, galantines, charcuterie, hors d'oeuvres, mousse, vegetable carving and garnishing, and ice sculpture.

CUL 220 Organization/Management of Food Systems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

A study of the processes of recruitment, selection, training and evaluation, collective bargaining and human relations techniques in personnel management. Theoretical applications are developed and discussed through actual case studies.

CUL 224 Principles of Cost Control **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Forecasting and cost control exercises are a major part of this course. Students are involved in analyzing all costs related to food, beverage, labor and supplies as well as discussions and exercises related to purchasing, receiving, and storage.

CUL 227 Advanced Culinary Techniques **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 230 and CUL 231

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course is a culmination of experiences for the advanced student. Focus will be placed on competitive skills in food design, presentation, organization, timing, and cooking methods used in hot and cold food competition. In addition, students have the chance to demonstrate their creativity and design skills through ice sculpture.

CUL 228 Layout and Equipment **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 120 and CUL 121

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class is designed to give necessary insight involved in developing a floor plan of a restaurant or food service facility. Individual projects make use of information related to surveying, planning and design of both menu and kitchen layout. Students with experience equivalent to CUL 120 and CUL 121 may contact the instructor for permission to waive the prerequisite.

CUL 230 Quantity Food Production **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110, CUL 120, and CUL 121 minimum grade "C"

Corequisites: CUL 231

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

This course builds on the basic preparation and production techniques developed in elementary food preparation. The course is designed to provide students with advanced preparation techniques and methods required to produce quality food items in quantity for breakfast, brunches, and luncheon buffets. Students demonstrate organization, management, and production skills.

CUL 231 A La Carte Kitchen **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 120 and CUL 121

Corequisites: CUL 230

30 lecture, 83 lab, 0 clinical, 0 other, 113 total contact hours

This course gives students opportunities to advance and refine their skills in high quality food production. Food preparation focuses on restaurant "cooked to order" cooking. Emphasis is placed on timing, organization, portioning, and teamwork.

CUL 250 Principles of Beverage Service **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to teach students techniques in beverage production and service as well as the ability to identify strategies for effective management and marketing of beverage operations. Emphasis will be placed on point of origin, mixology and regulations of beer, wine, and spirits. Comparative tastings are a major component of this course.

CUL 260 Catering and Banquet Production Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of the Culinary and Hospitality Management program or CUL 227, may enroll concurrently; consent required

15 lecture, 60 lab, 0 clinical, 0 other, 75 total contact hours

This advanced course provides the graduate culinary arts degree student with the ability to display knowledge of a variety of catering operations. This will include planning, organizing, marketing and executing receptions, parties, and special events.

Custom Cars & Concepts CCC

CCC 200 Custom Auto Body Technician I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course was created for the student who is interested in pursuing a career in the specialty car market of hot rods, customs, and concept vehicles. The student will use the knowledge acquired in prerequisite courses to elevate their skills while learning the techniques and applications of custom car building. Students will learn to install and modify many aftermarket products such as hinge kits and remote door openers. Other areas of instruction will include custom speaker enclosures, interior modification and how to achieve show car quality sheet metal fit and finish. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CCC 201 Custom Fabrication and Chassis Design I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course is designed for the student interested in pursuing a career in chassis design and assembly as well as metal fabrication as it pertains to the world of custom vehicles. In this class, students will build their skills and proficiency using the tools of the trade such as the iron worker, hand brake, foot sheer, and Beverly sheer. Subjects covered will include air bag suspension, choosing wheel/tire and offset combinations, raising and lowering suspension, as well as fabricating various custom parts needed to build a custom car. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CCC 220 Custom Auto Body Technician II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

In this class, emphasis will be placed on the student's ability to perform bodywork related procedures that help to achieve a suitable substrate for the application of a show quality paint job. Topics included are the removal of factory body imperfections such as stamping marks and spot weld seams. Also, techniques involved in shaving door handles, fine tuning of body panel gaps, and processes involved with the texture removal and surface preparation of plastics used in the automotive industry will be covered. Instructors will also provide information on advanced paint operations such as the "ghosting" of graphics, "smoking" of headlights/taillights, and special sanding/buffing procedures as related to the final appearance of a custom car. In order to enroll in this class, students must complete the Auto Body Repair (CTAUBR) certificate program with a grade of "B" or better in each course.

CCC 221 Custom Fabrication and Chassis Design II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCC 201 and WAF 215 minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

The student will continue to build on skills acquired. Class projects will be based on the design and fabrication of suspension components, and the extensive amount of "one of a kind" parts needed to complete a custom vehicle. Working in a team environment, students will establish project guidelines, develop problem-solving skills, and strive to achieve team goals in a timely manner. Past projects such as the "Summer School Chevelle" have been featured on The Learning Channels' "Rides." Other Custom Cars & Concepts vehicles have gained national recognition by receiving awards at the legendary Detroit Autorama, and have been showcased by Ford, Dodge, and General Motors at the Specialty Equipment Market Association (SEMA) show in Las Vegas.

CCC 240 Custom Auto Body Technician III 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCC 200 and CCC 220, minimum grade "B"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

The object of this course is to provide a platform on which students can start to apply the skill and experience they have acquired in prior courses. Students will demonstrate their proficiency in the design, assembly, and completion of show quality vehicles. Prior projects have been feature in national media publications such as News Week, Car and Driver, Hot Rod, and television programs that includes The Learning Channels' "Rides." Teamwork, establishing project guidelines, time management, developing problem solving skills, goal setting, and the achievement of these goals will be emphasized.

CCC 241 Custom Fabrication and Chassis Design III 6 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCC 201 and WAF 215, minimum grade "B"

75 lecture, 75 lab, 0 clinical, 0 other, 150 total contact hours

Students taking this course will continue to develop skills and gain valuable information as it relates to the completion of a project vehicle. Areas of study include fastener selection, electrical system upgrades, ride tuning of suspension, brakes, steering, and final safety inspections. Working with staff and other team members, students will devise a promotional plan, aid in the set up, display and help organize the project vehicles' debut.

CCC 260 Custom Auto Body Technician IV 6 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCC 200 and CCC 220, minimum grade "B"

75 lecture, 75 lab, 0 clinical, 0 other, 150 total contact hours

Students taking this course will continue to build on fundamental skills that they have developed in the construction of show quality automobiles. Various topics associated with the completion of a project car will be covered. These topics include, but are not limited to, final assembly, fit and finish, and final detailing of the project vehicle. In addition to these course objectives, students will aid in the development of a promotional plan for the vehicle, and help in the coordination of venue set up and display.

Dance DAN

DAN 101 Beginning Modern Dance I 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies basic modern dance exercises and steps. This course includes the opportunity to perform a modern dance piece in an end-of-term recital.

DAN 102 Beginning Modern Dance II 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies complex modern dance exercises and steps. This course includes the opportunity to perform a modern dance piece in an end-of-term recital.

DAN 103 Beginning Tap Dance I 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

In this course, students learn basic tap dance vocabulary which is incorporated into traditional steps and dance routines. Rhythmical enjoyment is emphasized.

DAN 104 Tap Dance II 1 credit

Level I Prerequisites: No Basic Skills

Level II Prerequisites: DAN 103 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

In this course, students learn basic tap dance vocabulary which is incorporated into traditional steps and dance routines. Rhythmical enjoyment is emphasized.

DAN 105 Beginning Jazz Dance I 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies basic jazz dance exercises and steps. This course includes the opportunity to perform a jazz dance piece in an end-of-term recital.

DAN 106 Beginning Jazz Dance II 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies more complex jazz dance exercises and steps. This course includes the opportunity to perform a jazz dance piece in an end-of-term recital.

DAN 107 Beginning Ballet I 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies the basic ballet barre and floor exercises and vocabulary. This course includes the opportunity to perform a ballet dance piece in an end-of-term recital.

DAN 108 Beginning Ballet II 1 credit

Level I Prerequisites: No Basic Skills

Level II Prerequisites: DAN 107 minimum grade "C "

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces additional vocabulary and more complex floor and barre exercises than Beginning Ballet I. This course also includes the opportunity to perform a ballet dance piece in an end-of-term recital.

DAN 110 Afro-American Dance I **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces the basic movements used in American boogie, jazz, Dixieland, modern and Latin dance. The focus of the class is to identify these movements and relate them to their ancestral African and African/American dance heritage.

DAN 111 Popular Dance Forms **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 30 lab, 0 clinical, 0 other, 30 total contact hours

This course is an overview of popular dances. Club dancing, line dancing, partner and solo dancing are a few examples of the dances that will be studied. This class also presents contemporary popular social dances.

DAN 122 Ballroom Dance I **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Students learn the basics of good social dance so they can feel comfortable in any dance situation. They learn how to lead, follow, and dance the most popular and most useful dances: fox trot, waltz, swing, cha-cha, rumba, polka and hustle. Designed for those with limited or no experience or for those who wish to review the basics.

DAN 123 Dance Exercise I **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This is an activity class, in which students participate in dance-related exercise. They will learn correct techniques, which will increase flexibility, mobility, and strength. Students will also learn the relationship of exercise to health.

DAN 180 Dance Appreciation: The World of Dance **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

A lecture demonstration course defining dance and its religious, social, cultural, historical, sexual, and artistic qualities. The course will include the viewing of video documentation, discussion, research, and demonstration of a chosen dance form. This is not a dance class. Note: Students interested in a dance class are encouraged to take one of the beginning level classes.

DAN 200 Advanced Performance-Dance **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: DAN 101, DAN 105, and DAN 107, minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides the experienced dancer with the tools and language of choreography. Using these tools the student will create and present dance works. Production aspects will be introduced and utilized.

DAN 210 Afro-American Dance II **1 credit**

Level I Prerequisites: No Basic Skills; DAN 110

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This class is designed to further students' dance vocabulary using basic African/Afro-American movements employed in the boogie, jazz, hip-hop, modern and Latin dance. Emphasis is on building confidence through the use of movement combinations; traditional African/Afro-American movement; exploring solo creation, and learning at least one Afro-American dance. Students with experience equivalent to DAN 110 may contact the instructor for permission to waive the prerequisite.

DAN 222 Ballroom Dance II **1 credit**

Level I Prerequisites: No Basic Skills

Level II Prerequisites: DAN 122

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Students perfect the basics of good social dance so they can excel in any dance situation. They learn advanced patterns in fox trot, waltz, swing, cha-cha, rumba, polka and hustle. They are introduced to tango, mambo and samba. It is designed for those who have previous ballroom dance experience.

DAN 223 Dance Exercise II **1 credit**

Level I Prerequisites: No Basic Skills; DAN 123

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is designed for students who are looking for a medium paced dance exercise course. This choreographed program of stretching and simple dance routines, set to various types of music, helps trim and recondition the body while providing an excellent maintenance or re-entry point for a fitness program. Discussion of nutrition and the learning of simple relaxation techniques are also a part of this class. No prior dance exercise is required, though a moderate level of fitness is suggested. Students with experience equivalent to DAN 123 may contact the instructor for permission to waive the prerequisite.

Dental Assisting DEN

DEN 102 Managing Safe Practice in Dentistry **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

7 lecture, 15 lab, 0 clinical, 0 other, 22 total contact hours

This is a study of microbiology, types of diseases and their transmission, the application of OSHA guidelines to dentistry, as well as the management of hazardous waste in the dental office. The student will gain practical experience in the operation of all disinfectant and sterilization equipment and techniques and learn how to manage and manipulate various substances in a safe manner. This course will aid a student in preparation for the Dental Assistant National Board (DANB) examination in Infection Control (ICE).

DEN 106 Biomedical Science for Dental Assistants **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course covers the formation and eruption of the teeth, cell tissue and organ development, nervous system, trigeminal nerve, and types and uses of local and general anesthesia.

DEN 107 Oral Anatomy **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This is an introductory course in head and neck anatomy. It covers skull and facial bones, masticatory muscles, oral anatomy - hard and soft tissues, anatomical nomenclature, tooth development and morphology, tooth surface annotation, cavity classification, occlusion and malocclusion.

DEN 108 Dental Radiography 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

12 lecture, 0 lab, 36 clinical, 0 other, 48 total contact hours

The principles, techniques, safety precautions, and operation of dental radiographic equipment are studied. This course, when combined with DEN 128, meets the radiographic requirements of the Michigan Dental Practice Act.

DEN 110 Basic Clinical Dental Assisting 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is an orientation to dental assisting. It provides an overview of the history of dentistry, professional organizations, ethics, and the role of the modern dental health team. Students are introduced to the dental operatory, equipment and basic procedures, and the application of Occupational Safety and Health Administrations (OSHA) guidelines used in four-handed dentistry.

DEN 112 Dental Materials 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course is designed to give dental assisting students theoretical knowledge of the uses and properties (chemical and physical) of the most commonly used dental materials. Students will gain laboratory and clinical experience in the manipulation, practical application, and safe use of common dental materials in accordance with OSHA guidelines.

DEN 118 Preventive Dentistry 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides dental assisting students with a foundation in preventive dentistry. Methods to ensure the dental health of patients, including instruction in oral hygiene and proper nutrition, are addressed. Etiology, prevention, and control of dental caries are also emphasized. DEN 109 and DEN 119 have been combined to form DEN 118.

DEN 120 Oral Diagnosis Theory 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 102 and DEN 107, minimum grade "C"

8 lecture, 24 lab, 0 clinical, 0 other, 32 total contact hours

This theoretical course provides students with the knowledge and techniques used to obtain diagnostic data and the methods of recording this data. Students gain practical experience in common charting techniques and record management in different specialty areas of dentistry.

DEN 128 Dental Radiography Practicum 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 108 minimum grade "C", may enroll concurrently

0 lecture, 45 lab, 0 clinical, 0 other, 45 total contact hours

Students gain experience in exposure methods, processing methods and mounting techniques. This course, when combined with DEN 108, meets the radiographic requirements of the Michigan Dental Practice Act.

DEN 129 Oral Pathology and Dental Therapeutics 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 106 and DEN 107, minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a study of diseases of teeth and supporting structures, oral pathology, and systemic diseases and their relationship to dental health. Dental assistant students gain experience in critical evaluation of a patient's health status and apply the essential skills needed to assist in common dental/medical emergencies. Various drugs and their effect on medical/dental care also are studied.

DEN 130 Clinical Practice 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 102, DEN 108, and DEN 110, minimum grade "C"

Level II Prerequisites: current CPR card

0 lecture, 0 lab, 160 clinical, 0 other, 160 total contact hours

This course provides Pathway I option A students with clinical application of all previous knowledge as they gain clinical experience in the WCC Dental Clinic and a community site assigned by the WCC faculty. The students have the opportunity to assist during basic preventive and operative procedures, monitor vital signs, apply OSHA guidelines, sterilize instruments and manage patient records. A WCC faculty will observe and monitor progress at the community site.

DEN 131 Principles of Dental Specialties 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 110 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course provides a study of advanced clinical procedures used in dental specialties. Latest concepts in each specialty are presented by dental specialists from the community.

DEN 133 Clinical Practice 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 102, DEN 108, and DEN 110, minimum grade "C"

Level II Prerequisites: current CPR card

0 lecture, 0 lab, 160 clinical, 0 other, 160 total contact hours

This course provides Pathway I option B students with clinical application of all previous knowledge as they further their clinical experience in their office of employment. The students have the opportunity to assist during basic preventive and operative procedures, monitor vital signs, apply OSHA guidelines, sterilize instruments and manage patient records. A WCC faculty member will observe and monitor progress at the community site.

DEN 202 Advanced Clinical Practice 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 130 minimum grade "C" or DEN 133 with grade "P"; DEN 133 may enroll concurrently

Level II Prerequisites: current CPR card

0 lecture, 0 lab, 160 clinical, 0 other, 160 total contact hours

This course builds on the student's clinical experience of DEN 130/133. The student develops advanced clinical skills in areas of interest. Students must complete two rotations at different clinical sites of their choice and provide evidence of such a rotation. A WCC faculty member will observe and monitor progress at each clinical site.

DEN 204 Advanced Functions **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Pathway I students - DEN 202 minimum grade "C", may enroll concurrently; or Pathway II students -Admission to Dental program

Level II Prerequisites: current CPR card

30 lecture, 30 lab, 75 clinical, 0 other, 135 total contact hours

This course is designed to provide dental assisting students with knowledge and skill in performing legally delegated intra-oral functions. In Michigan, the legal duties of the registered dental assistant are outlined in the Administrative Rules of the Michigan Board of Dentistry and the Public Health Code.

DEN 205 Expanded Duties for the RDA **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: current RDA license

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed for the current registered dental assistant in the State of Michigan who must meet the requirements of the Public Health Code Section 333.16611.

DEN 212 Dental Practice Management **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 107 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to the dental business office. It is the study of systems of management used in dentistry, interpersonal communications (written and verbal), basic concepts of third party payment, machines and computer utilization. Students develop skills in interviewing and writing letters of application and a resume.

DEN 230 Alternative Dental Assisting Education Project **9 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program - Pathway II students

30 lecture, 16 lab, 600 clinical, 0 other, 646 total contact hours

This course is designed specifically for the on-the-job trained dental assistant who has been admitted to the Dental Assisting Program with advanced standing after successfully passing all three components of the Dental Assistant National Board CDA Examination. In this course, the dental assistant will demonstrate hands-on skills that cannot be tested in a written examination. The student will validate clinical, laboratory, radiographic, and business office skills in their offices of employment.

Drama DRA

DRA 152 Acting for the Theatre I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class is an introduction to acting through improvisation and the presentation of monologue scenes, poetry, and original text. It covers analysis and application of the performance skills needed in stage theatrical performance, including voice projection, character development and analysis, emotional expression, and staging. These skills are emphasized in a studio class setting where students frequently perform in class for each other and receive coaching and direction from the instructor. This course will appeal to anyone interested in developing their acting, presentation, and/or communication skills. All skill levels are welcome.

DRA 170 Theatre Festival **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Students will travel to a professional theatre festival such as the Stratford Theatre Festival or the Shaw Theatre Festival in Ontario to attend plays, participate in class discussions, and do preparation for an essay assignment. The course will appeal to those with an interest in various aspects of theatrical performance, including acting, directing, design, production, and literature. A back-stage tour of the facilities will be included. There will be additional expenses for travel.

DRA 204 Improvisational Acting for the Theatre **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; DRA 152 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

An interactive acting course introducing the art of performing without a script. Various forms of impromptu exercises and traditional acting games are explored to enhance skills in spontaneity, comic timing, concentration, verbal and non-verbal expression, characterization and group cooperation. Students will practice developing improvisational sketches and prepare to perform before an audience.

DRA 208 Acting for Theatre II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; DRA 152 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of DRA 152, focusing on the further study and practice of acting techniques, including the performance of poetry, prose, spoken word, monologues, scenes, personal narrative and improvisation.

DRA 209 Acting for Musical Theatre **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; DRA 152, MUS 204, and MUS 209, minimum grade "C-", may enroll concurrently in MUS 209

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This is a fundamentals in acting for musical theatre course. It covers analysis and application of the performance skills needed by the actor/singer in a musical theatre performance. Through song and scene study, students learn basic acting techniques, including expression of character through vocal and physical performance, staging, character development and emotional expression. The emphasis is on performance, not vocal techniques. This course will appeal to anyone interested in developing their vocal performance and acting skills specifically for musical theatre performance. Students should take this course and MUS 209 in the same semester.

Economics ECO

ECO 110 Introduction to Economics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a basic one-semester introduction to economics. The course introduces scarcity and rational choice, markets, "supply and demand," the business firm costs, and competition. Macroeconomic topics include GDP, unemployment, and inflation, as well as money, banking, and government stabilization policy. International trade issues are also considered.

ECO 111 Consumer Economics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the role, rights, and responsibilities of the consumer in a market economic system. The decision-making process, and the manner in which advertising and other information sources influence decision-making, will be examined. Best practices in a number of specific consumer markets, such as housing, health-care, banking and credit, and transportation will be examined. Government protection and other avenues of redress will be addressed.

ECO 211 Principles of Economics I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the first half of the principles of economics sequence. It emphasizes measurement and determination of inflation, unemployment, output, growth, and national income. The role and creation of money are discussed. Fiscal and monetary policy are considered. Supply and demand analysis is developed as a foundation.

ECO 222 Principles of Economics II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ECO 211 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the second half of Principles of Economics. Emphasis is on micro-economic principles of demand, supply and problems relating to prices and resource allocation.

ECO 280 International Economics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ECO 211

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course in international trade and finance covering topics such as tariffs and quotas, trade agreements, exchange rates, and international finance institutions such as the IMF and World Bank. It is designed primarily for transfer students and those interested in pursuing international business.

Electricity/Electronics ELE

ELE 040 Residential Wiring 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 45 lab, 0 clinical, 0 other, 45 total contact hours

This course is a practical hands-on course that has been designed to help students better understand wiring techniques and safety considerations for dealing with a residential wiring system. A great deal of "hands on" time is offered and is devoted to working with the wiring materials and constructing circuits of the type found in the home. Typical of the kinds of circuits that are discussed and wired by the student are: duplex outlet circuits, dimmer circuits, three and four-way switch circuits, CGI circuits, lawn and garden lighting circuits, electrical dryer and electric stove circuits. Grading is by the satisfactory/unsatisfactory system.

ELE 041 Residential Wiring II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of ELE 040. It is a hands-on projects course designed to allow students to better understand more advanced wiring techniques when working on residential wiring. Part of the course is discussing individual projects and drawing the necessary diagrams. Most of the course is devoted to working with the electrical materials, and constructing the type of circuits found in the home. The new circuits wired include: main panel grounding, sub panels, heaters, and security.

ELE 095 Electrical Blueprint Reading 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory level course in reading basic electronic/electrical manufacturing drawings to determine if the hardware complies with the engineering design requirements. Students learn to identify the basic graphical symbols used in electrical/electronic manufacturing drawings. The basic types of technical information contained in each category of manufacturing drawing is studied.

ELE 111 Electrical Fundamentals 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This is an introductory course in AC and DC concepts and circuits. The course is designed to foster an intuitive understanding of electrical concepts appropriate for occupations involved with the installation, maintenance, and troubleshooting of electrical circuits and devices. Lab exercises deal with the use of test equipment for the purpose of verifying circuit operation and troubleshooting circuit faults. Students must have good numerical and algebraic skills to be successful in this course.

ELE 134 Motors and Controls 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ELE 111 minimum grade "C-" or equivalent

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This course introduces students to the theory and application of AC and DC electrical machines and their controls. Topics include DC generators, DC motors and controls, 3 phase power, 3 phase transformers, alternators, 3 phase and single phase AC motors and controls, electronic motor drives, synchronous motors, servo motors and stepper motors. In weekly lab assignments, students will read and interpret schematic diagrams, connect motors and controls, test and troubleshoot motors and controls.

ELE 174 ELE Co-op Education I 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ELE 111 or CST 150; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course the student gains skills from a new experience in an approved, compensated, electronics related position. Together with the instructor and employer, the student sets up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences.

ELE 204 National Electrical Code 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ELE 111 or equivalent

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This course covers the use of the National Electrical Code as a tool to plan the safe installation of electrical equipment in residential, commercial, and industrial locations. Students calculate required numbers of branch circuits; select sizes of conductors, raceways, fuses, circuit breakers, and boxes; and plan motor circuits, services, and feeders. Other topics include: cardio-pulmonary resuscitation and other safety issues, grounding, GFCI, kitchen circuits, motor controls, local codes, and code changes. Recommended for industrial controls students and those interested in becoming licensed journeypersons or master electricians. Prerequisites will be checked by the instructor on the first day of class.

ELE 211 Basic Electronics — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ELE 111 or equivalent

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Basic Electronics is a beginning lecture and laboratory course covering solid state devices. It includes the theory and application of diodes, and both bipolar and field effect transistors. These devices are tested and then circuits using them are constructed and tested in the laboratory using common laboratory equipment. Prerequisites will be checked by the instructor on the first day of class.

ELE 224 Introduction to PLCs — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ELE 111 minimum grade "C-" or equivalent

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

An introduction to programmable logic controllers (PLCS) which covers PLC hardware, relay-type, timer, counter, data manipulation, math and program control instructions, with an emphasis on troubleshooting. Weekly lab assignments use Allen Bradley SLC-500 and PLC-5 controllers and RSLogix software. This course is offered for students, electrician apprentices, electricians, technicians, and engineers.

ELE 254 PLC Applications — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

Level II Prerequisites: ELE 224 minimum grade "C-"

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This is an advanced, hands-on course in PLC system concepts and troubleshooting. Topics include analog I/O, data manipulation, block transfer, on/off and PID closed loop control, data communications (DH+ and remote I/O), operator interface terminals (PanelView), and sequential systems. SLC-500 and PLC-5 processors, and RSLogix500, RSLogix5, and PanelBuilder software are used in lab exercises. This course is intended for students in industrial electronics and automation technology, electrician (and other) apprentices, and industrial technicians. Also for engineers desiring hands-on PLC experience.

ELE 274 ELE Co-op Education II — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ELE 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

ELE 284 Control Logic Programming — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: ELE 254 minimum grade "C-" or equivalent

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This is a course in industrial control logic. Students will learn combinational and sequential relay logic analysis and recognize some logic design and simplification techniques. Lecture and laboratory topics will include control systems, number systems and codes, Boolean logic, ladder logic diagrams, IEC symbols, and the programming and use of programmable logic controllers (PLCs) to implement combinational and sequential control applications.

ELE 299 Customer Relations — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

21 lecture, 0 lab, 0 clinical, 0 other, 21 total contact hours

Students enhance their interpersonal skills through the techniques gained in this course. Developing insight using demonstrations, video tape, role playing, and interaction, the student is guided in a curriculum that builds a value-added attitude for customer service personnel. Skills learned include controlling one's emotions in difficult situations and increasing customer satisfaction.

English — ENG

ENG 000 Writing Center — 0 credit

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours

The Writing Center provides three services. First, students enrolled in English 040, 050, 051, 091, 100, and 111 receive additional practice and/or assignments in developing writing skills in the lab. The practice method and assignments vary from course to course. Second, students can receive help on any writing project from the Center staff. Third, Macintosh computers are available so students may word-process their papers.

ENG 010 Writing Practicum — 1 credit

Level I Prerequisites: consent required

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours

This course provides individualized instruction. Students may be referred to this course by their instructor to remove a specific deficiency in their writing. Students may enroll in this course to improve writing or receive help in completing writing assignments for English classes or other courses requiring writing. Satisfactory/unsatisfactory grading is used.

ENG 020 English as a Second Language (ESL) I — 8 credits

Level I Prerequisites: oral interview; Must see academic advisor or counselor for prerequisites

120 lecture, 0 lab, 0 clinical, 0 other, 120 total contact hours

This course is designed for students who do not speak or understand spoken or written English. The course covers survival language necessary for minimum functioning in the community. Satisfactory/unsatisfactory grading is used.

ENG 021 English as a Second Language (ESL) II — 8 credits

Level I Prerequisites: oral interview and ENG 020

120 lecture, 0 lab, 0 clinical, 0 other, 120 total contact hours

This class is a continuation of ENG 020. It is designed for students who have had some exposure to and/or instruction in English. The course emphasizes communication at the survival level, including initiating that communication. Satisfactory/unsatisfactory grading is used.

ENG 023 High Beginning ESL Reading and Listening — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to help students move beyond minimal survival English towards communication for daily living. The reading portion focuses on building vocabulary as well as reading skills. The listening portion focuses on the comprehension of spoken English.

ENG 024 High Beginning ESL Grammar and Communication — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This class is designed as a continuation of ENG 021 and is for students who have had some exposure to and/or instruction in English. This course goes beyond minimal survival English toward communication of daily living. Grammar and communicative competence are emphasized. This class can be taken concurrently with ENG 023. Satisfactory/unsatisfactory grading is used. This course is the second half of the previous course ENG 022.

ENG 027 Low Intermediate ESL Reading I — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to lay the foundations for reading improvement needed by ESL students. Emphasis is placed on the development of skills and reading for pleasure. Vocabulary development, active reading strategies, independent silent reading and comprehension are covered. Students must satisfactorily complete their work before advancing to a higher level reading course. Satisfactory/unsatisfactory grading is used.

ENG 028 Low Intermediate ESL Reading II — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to lay the foundations for reading improvement needed by ESL students. Emphasis is placed on the development of reading skills and reading for pleasure. Vocabulary development, active reading strategies, independent silent reading and comprehension are covered. Students must satisfactorily complete their work before advancing to a higher level reading course. Satisfactory/unsatisfactory grading is used.

ENG 030 Intermediate ESL Grammar I — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This intermediate level class expands students' knowledge of English grammar and vocabulary and their ability to understand and use spoken and written English. Special attention is given to the appropriate use of the forms studied. Satisfactory/unsatisfactory grading is used.

ENG 032 Intermediate ESL Grammar II — 4 credits

Level I Prerequisites: ENG 030 with grade "S"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course meets with ENG 030 but students are required to demonstrate greater mastery of the material. Successful completion of ENG 032 is required for entrance into ENG 060. Satisfactory/unsatisfactory grading is used.

ENG 033 Intermediate ESL Reading I — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to further develop independent reading comprehension skills for ESL students. Emphasis is placed on vocabulary development, active reading strategies, variable reading rates, independent silent reading and comprehension. Students must satisfactorily complete their work before advancing to a higher level reading course. Satisfactory/unsatisfactory grading is used.

ENG 034 Intermediate ESL Reading II — 4 credits

Level I Prerequisites: ENG 033 with grade "S"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

The course is a continuation of ENG 033. It is designed to further develop independent reading comprehension skills for ESL students. Emphasis is placed on vocabulary development, active reading strategies, variable reading rates, independent silent reading and comprehension are covered. Students must satisfactorily complete their work before advancing to a higher level reading course. Satisfactory/unsatisfactory grading is used.

ENG 035 English Pronunciation and Conversation (ESL) — 3 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This intermediate pronunciation and conversation class is for learners of English as a second language. Students practice using English to agree, disagree, invite, and compare. Grammar and vocabulary are reviewed as they relate to the conversations. Some outside reading is required. Satisfactory/unsatisfactory grading is used. The prerequisites may be taken before or concurrently with this course.

ENG 037 Intermediate ESL Writing — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This class is designed to help students internalize both the grammar and vocabulary that they have been studying by using it to produce well-formed sentences and paragraphs. Writing as communication is emphasized. Satisfactory/unsatisfactory grading is used. The prerequisites may be taken before or concurrently with this course.

ENG 050 Basic Writing I — 4 credits

Level I Prerequisites: Academic Reading Level 3; no minimum writing level

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This class is the first course for inexperienced writers. Students gain confidence writing formal English sentences and paragraphs. It is strongly recommended that students enroll in a reading course before or at the same time as this course. Satisfactory/unsatisfactory grading is used. Satisfactory completion of ENG 050 is required to advance to ENG 051.

ENG 051 Basic Writing II — 4 credits

Level I Prerequisites: ENG 050 with grade "S"

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course meets along with an ENG 050 class but has more advanced writing lab assignments. Satisfactory/unsatisfactory grading is used.

ENG 060 Advanced ESL Grammar I — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Students study sophisticated forms of English grammar, including subject/verb inversion, reduced clauses, and complex verb phrases. Special attention is given to the appropriate use of the forms studied. Satisfactory/unsatisfactory grading is used.

ENG 061 Advanced ESL Grammar II — 4 credits

Level I Prerequisites: ENG 060 with grade "S"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course meets with ENG 060, but students are required to demonstrate greater mastery of the material. Successful completion of ENG 061 is required for progressing into classes with native speakers. Satisfactory/unsatisfactory grading is used.

ENG 064 Advanced ESL Reading — 4 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to prepare ESL students for academic testing. Students will develop appropriate vocabulary, reading strategies, and study skills, which will enable them to succeed in occupational and academic classes at the 100 level. Satisfactory/unsatisfactory grading is used.

ENG 065 Advanced ESL Speaking and Listening — 3 credits

Level I Prerequisites: Must see academic advisor or counselor for prerequisites.

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class is designed to prepare students for active participation in college classes. Understanding lectures, taking notes in class, and participating in class discussion are covered. Satisfactory/unsatisfactory grading is used. Placement in this course may be made by an ESL instructor.

ENG 090 Writing Fundamentals I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 3

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course focuses on strengthening the writing skills needed in preparation for college-level coursework. The emphasis is on developing and organizing ideas in paragraphs and essays. Satisfactory/unsatisfactory grading is used. Satisfactory completion is required to advance to ENG 091.

ENG 091 Writing Fundamentals II — 4 credits

Level I Prerequisites: ENG 090 with grade "S"

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of ENG 090. This course focuses on strengthening the writing skills needed in preparation for college-level coursework. The emphasis is on developing and organizing ideas in paragraphs and essays. In order to pass with a grade of "C" or better and be eligible to take 100 level English courses, students must demonstrate at least "C" level competency on in-class writing by the end of the semester.

ENG 100 Introduction to Technical and Workplace Writing — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course, students learn how to write effective technical and workplace documents such as emails, letters, memos, invoices, work orders, labor reports, resumes, and short reports. Students write documents in response to situations that they will likely encounter on the job. Emphasis will be placed on planning and writing clear, concise, and audience-focused documents. During the first week of class, students must demonstrate a writing proficiency at the college level. The title of this course was previously Written Communication.

ENG 101 Introduction to Print Journalism — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this introductory course, students begin by examining, discussing and analyzing news stories, identifying fundamental elements of style, tone, and content. Students progress to interviewing live sources, writing news articles, and reviewing relevant rules of grammar. Examination of interview techniques and newsroom organization is also included.

ENG 107 Technical Writing I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students learn the technical writing process and apply it to writing tasks similar to those they will encounter on the job. Students develop, organize, and write memos, technical definitions and descriptions, instructions, reports, and presentations. At the end of the semester, students prepare a portfolio of their technical writing assignments. Note: During the first week of class, students must demonstrate a writing proficiency at the college level.

ENG 111 Composition I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: ENG 000

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course develops skills in critical reading, logical thinking, and written composition (from narrative to expository essays and documented essays). Reading materials serve as a basis for essays and classroom discussions. Students write both in-class and outside essays. Methods of organization and development are emphasized. During the first week of class, students must demonstrate their writing proficiency. In order to pass with a "C" or better, students must demonstrate at least "C" level competency on in-class writing by the end of the semester.

ENG 115 Writing for Visual Media — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Writing for Visual Media gives students experience writing scripts for film, TV, and Web-based video in several genres. Public service announcements, commercials, documentaries, and feature film scripts are examined. As this course is a requirement of the Digital Video Film Production certificate program, emphasis is on writing for productions with a visual element, as opposed to COM 155, which focuses more on radio and other broadcast media.

ENG 140 Horror and Science Fiction — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a study of science fiction and horror in literature with emphasis on literary, historical, psychological, and cultural relevance. Short stories, novels, poems, films, and/or nonfiction related to both genres are analyzed and discussed. Specially designated sections may focus on horror, science fiction, subgenres, or major authors.

ENG 160 Introduction to Literature: Poetry and Drama — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give an understanding of literature through writing assignments, close reading and discussion of selected works of poetry and drama. Students are encouraged to evolve criteria for assessing the value of literary works.

ENG 170 Introduction to Literature: Short Story and Novel — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students explore short stories and the novel as they provide blueprints for living, self-discovery, and recreation. Students will be introduced to the elements of fiction, various literary genres and their cultural, historical contexts. They will be given a literary vocabulary to use in assessing the value of literary works. Students will be expected to analyze fiction critically in class discussions and through formal and informal writings. Specially designated sections of the course may be devoted to special topics such as mystery, war, westerns, women's issues, and popular fiction etc.

ENG 181 African-American Literature — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of the African-American experience in the world of literature. It is an introduction to African-American thought through readings in poetry, fiction, drama, autobiography, and the essay.

ENG 185 English Grammar and Usage — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students formalize their knowledge of the structure of English. They learn to respect the internal grammar of English and to separate the issues of grammar and usage. Students examine some of the complex problems related to English grammar and usage. This course is a structural analysis of English and is designed for college level students.

ENG 187 Folk Literature and Culture of the Caribbean and South America — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on Caribbean and South American folk literature, traditions and culture. It invites students to analyze and critique tales, legends, myths and other oral, visual and musical traditions from the Caribbean and Latin America. This course examines the cross-cultural literary expressions and multi-media experiences of West Indian and South American communities.

ENG 199 Technical Writing Internship — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Technical Writing program and ENG 208 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

In this course, students gain skills in technical communication through work assignments provided by a host company and supervised by both the company supervisor and the instructor. At the beginning of the internship, specific learning objectives related to the assignments are developed, hours of work are established, and instructor conference times are set. At the end of the internship, the supervisor evaluates the student performance, and the student writes a self-evaluative report based on the experience.

ENG 200 Shakespeare — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers introductory reading, discussion, and analysis of the varieties of Shakespeare's works. Wherever possible, the opportunity to view performances, either live or on video, is made available.

ENG 208 Technical Writing II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 107 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students learn how to manage, design, write, and edit end-user documentation. Students prepare detailed project plans, project schedules, and design documents that guide them through the writing and editing phases of their projects. The final document (25-page minimum) as well as all planning and design specifications are presented in a portfolio at the end of the semester. (Note: Students use advanced features in MS Word including styles, templates, tables of contents, and indexes to create their documents.)

ENG 209 Technical Writing III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 208 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this hands-on course, students use FrameMaker (both Unstructured and Structured) to design and manage content; build on the project management skills learned in ENG 208 to develop larger, more complex plans and schedules that involve multiple team members; develop style guides and FrameMaker templates to use for their team projects; draft, revise, and finalize training documentation; and conduct in-class training sessions using their documentation.

ENG 211 American Literature I - Before 1900 — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The course provides a survey of the literature of North America (continental US) from the 17th century to approximately the Civil War era.

ENG 212 British Literature before 1800 — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The course analyzes British literature from its origins until 1800. Readings stress the major works and authors of the period (e.g., "Beowulf", Chaucer, Shakespeare, Milton, Pope, Swift).

ENG 213 World Literature I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

World Literature I is a course that attempts to look at the eternal values of man through literary masterpieces written from the time of ancient Greece through the Renaissance.

ENG 214 Literature of the Non - Western World — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a survey of major world literature excluding European and American literature. Typically, the course covers selections from Africa, Asia, the Middle East and the subcontinent of India, and includes a variety of traditional, modern and contemporary works of literature. This course includes an introduction to a variety of cultures and explores how literature reflects and communicates culture.

ENG 216 News Writing and Reporting **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 101 or ENG 111 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students write news articles suitable for publication. Conventions of newspaper writing are emphasized, including neutral tone, fair and balanced reporting, summary leads, feature leads, nut graphs, and appropriate use of quotations. Students also examine legal and ethical concerns and may cover speeches, courts, and government. Students will perform research for their stories using interviews, internet resources, and electronic databases.

ENG 217 Feature Writing **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 101 or ENG 111 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students write articles suitable for publication as features in newspapers and magazines. Human interest stories, profiles, obituaries, law and ethics, narrative technique, and online reporting/media convergence are among the topics examined. Students practice research techniques as part of each writing assignment.

ENG 218 Technical Writing IV **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 208 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this hands-on course, students use online help development software; manage online help projects; design, write, and test online help systems in a variety of formats; and research current trends in the field of technical communication. Students will be required to attend at least one meeting of the Society for Technical Communication.

ENG 222 American Literature II - 1900 to the Present **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of the literature of the United States from 1900 to the present, including important pieces of modern and contemporary American literature.

ENG 223 British Literature after 1800 **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course analyzes British literature from 1800 to present. Readings stress the major works and authors of the period (e.g., Blake, Keats, Browning, Hopkins, Hardy, Conrad, Yeats, Joyce, Eliot).

ENG 224 World Literature II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of ENG 213. It explores some of the great literary experiences of the Western tradition since the Renaissance and attempts to show how they have contributed to present cultural heritage.

ENG 226 Composition II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 111 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Composition II is the second semester of the two-course freshman writing sequence. The course is a continuation of ENG 111, Composition I, and further develops critical reading and logical thinking skills. Students will write argumentative essays using a variety of formats. Research writing and documentation is emphasized. This course was previously ENG 122.

ENG 240 Children's Literature **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a survey of prose, poetry and illustrated books suitable for the preschool, elementary, and early adolescent child. This course is required of students entering elementary education; also for library studies or work, teacher's aide program, nursery and day care work and as general education for parents.

ENG 242 Multicultural Literature for Youth **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a survey of prose, poetry and illustrated books exploring the experience of minority youth in American society suitable for the preschool through early adolescent child. The course is strongly recommended for practicing early childhood, elementary and secondary teachers as well as for students preparing to enter these fields; also for media or library studies work, childcare work and a general education for parents.

ENG 245 Career Practices Seminar **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

In this course, students explore career options available in their chosen fields. Topics include developing a systematic job search strategy, preparing job search documents (such as cover letters and resumes), and developing effective interviewing skills.

ENG 260 Journal Workshop I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This workshop is for emotionally mature, self-directed people committed to growth and discipline in their writing and in their lives. It offers writing techniques as a means to self-discovery and expression. There is a choice of many ways to use writing to tell one's stories, address issues, cultivate creativity, and celebrate life. Journals remain confidential. Some self-selected journal entries are shaped into polished, creative pieces meant for sharing with others.

ENG 261 Journal Workshop II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This workshop is a continuation of ENG 260, for students who have already completed ENG 260, and who wish to continue to develop their skills and produce additional written work. Students work on individual projects.

ENG 270 Creative Writing I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students explore processes by which writers discover ideas. Aided by a series of writing exercises, students create elements of poetry, fiction, drama, and/or non-fiction such as dialogue, point of view, voice, and rhythm. Students also explore relationships between form and ideas in writing. Writing is viewed as a means of personal expression and as a craft with definable measures of quality.

ENG 271 Creative Writing II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students work on individual writing projects such as a novel, short stories, poetry, film/TV/play scripts in a workshop setting.

ENG 281 African Literature **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will help to raise complex issues about African cultures and life using literature as a basis for understanding those cultures. Students will be exposed to historical writings, personal narratives, scholarly analysis and other forms of writing. The impact of colonialism and imperialism on the continent and its people will be explored. Students will have the opportunity to share their reflections and ideas about the people and traditions of this diverse continent.

Fluid Power FLP

FLP 101 Fluid Power Fundamentals - I **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

25 lecture, 20 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory class covering the fundamental principles of fluid power, both hydraulics and pneumatics. Subject matter includes application of Pascal's Law, prime mover requirements, principle of operation of fluid power fixed displacement pumps and compressors, control valves, pressure regulation, accumulators and actuators. Component failure modes and troubleshooting concepts are also covered. This course contains material previously taught in FLP 111.

FLP 110 Fluid Power Fundamentals - II **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 101 minimum grade "C"

25 lecture, 20 lab, 0 clinical, 0 other, 45 total contact hours

This class builds on the foundation set in FLP 101 with coverage of variable displacement pumps, proper system contamination control and filtration, hydraulic fluid requirements and compatibility, solenoid valves, load control valves, speed controls, fluid power motors and pressure intensifiers. Hands-on exercises include building of fluid power circuits and disassembly/inspection of hydraulic components. This course contains material previously taught in FLP 111.

FLP 174 FLP Co-op Education I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

FLP 214 Hydraulic Circuits and Controls **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 101 and FLP 110, minimum grade "C-"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course further develops the concepts of directional, pressure, and flow controls covered in FLP 101 and FLP 110. Troubleshooting and reading of hydraulic blueprints is emphasized. Circuits will include conventional valving, modular sandwich, screw in, and slip in cartridge valves. An introduction to proportional valves, servo valves, and electrical ladder control diagrams is included. Lab exercises play an important roll in this class. This course contains material previously taught in FLP 213.

FLP 225 Fluid Power Motion Control **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 214

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course reviews basic electrical principles and covers amplifier theory as applied to open loop and closed loop control. Proportional directional valves, flow control valves, and pressure control valves are discussed along with hydraulic servo valves. Proper setup alignment of the drive amplifiers and troubleshooting of servo and proportional control systems are covered in class and laboratory sessions. Closed loop (PID) control theory and feedback transducers are also discussed.

FLP 226 Pneumatics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 101 and FLP 110

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

Industrial air systems for controlling conveyors, presses, clamps, etc. are covered. This course includes operation and practical use of compressors, distribution systems, actuators, and valves. The second half of the course concentrates on the design of pneumatic control and power circuits using ANSI and ISO symbols and also the Moving Part Logic technique (pneumatic ladder logic).

FLP 274 FLP Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

French FRN

FRN 109 Beginning Conversational French **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This is a basic French course, mainly conversational in approach, which assumes no previous knowledge of the language. It is chiefly for persons interested in foreign travel through a basic knowledge of spoken and written French. It may also be taken as a preview for students entering the first-year of college French studies or students already enrolled in the first year French course. This course does not satisfy four year college language requirements. This course was previously FRN 120.

FRN 110 Intermediate Conversational French **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FRN 109 or one semester of college French

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course emphasizes the use of spoken French in every day context. Students work on improving aural/oral skills. By semester's end, students should feel comfortable creating with language in the present, past, and future tenses. This course does not satisfy four- year college language requirements. This course was previously FRN 121.

FRN 111 First Year French I **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is a beginning and transferable course in French which emphasizes communicative approach. Class work and aural/oral practice sessions assist the student in progressing effectively in the four language skills of listening, speaking, reading, and writing. Cultural aspects of the French-speaking world are also highlighted.

FRN 122 First Year French II **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FRN 111

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is a continuation of FRN 111. Continuing classroom work and aural/oral practice sessions help the student to acquire basic conversational tools of the language as well as basic informational aspects of the culture.

FRN 213 Second Year French I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FRN 122 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an intermediate course in French. Student progress is evaluated through a series of written and oral assignments. Students must demonstrate FRN 122 proficiency.

FRN 224 Second Year French II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; FRN 213

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a continuation of FRN 213. This course offers a complete and final overview of the French Language. Special attention is placed on the practical world of commercial, fiscal, and bureaucratic French by dealing with textual and aural real-life contexts. Students are exposed to the new trends and directions in the life of the French language. Students with experience equivalent to FRN 213 may contact the instructor for permission to waive the prerequisite.

Geography GEO

GEO 101 World Regional Geography **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory course in World Regional Geography which is divided into two parts. In the first portion of the class, students become familiar with the basic principles and concepts of physical and cultural geography which they will employ during the remainder of the semester. In the second part of the class, students survey the world on a region-by-region basis, identifying the specific geographic characteristics such as climate, terrain, population, industry and manufacturing, trade, transportation, and agriculture, which give the individual regions their unique identity.

GEO 212 Geography of the US and Canada **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GEO 101 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course surveys the United States and Canada on a region-by-region basis, identifying the specific geographic characteristics - such as climate, terrain, population, industry and manufacturing, trade, transportation and agriculture- which give the individual regions their unique identity, and explores the relationships among the various regions.

Geology GLG

GLG 100 Introduction to Earth Science **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course provides practical training in earth science including work with soils, minerals, rocks, glaciers, volcanism, plate tectonics, meteorology, oceanography, and astronomy. Students take a one-day glacier geology field trip.

GLG 103 Field Geology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students examine the processes that have formed and are forming the landscape by studying formations at local sites. Emphasis is placed on environmental impact on the landscape and waters of Washtenaw County.

GLG 104 Weather **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours

Atmospheric processes and phenomena that produce the day-to-day weather changes experienced throughout the world are studied. Emphasis is placed on empirical observation of cloud types, development, and movement. Weather map interpretation and analysis including elementary weather forecasting techniques are presented.

GLG 109 Common Rocks **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The identification of rocks and minerals is accomplished through laboratory and field studies. Emphasis is placed on Michigan specimens. This course is intended for teachers, students interested in becoming teachers, or those interested in rocks and minerals.

GLG 110 Geology of the National Parks and Monuments **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

The geological settings of specific national parks and monuments are studied including the principles and processes which shaped them. Slide programs and topographical maps are used to illustrate geological features.

GLG 114 Physical Geology **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

The physical features and processes of the earth are studied. Plate tectonics along with the interpretation of topographic maps and the study of common rocks and minerals are included. A three-day field trip is required with food and housing expenses the responsibility of the student.

GLG 125 Historical Geology **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GLG 100 minimum grade "C"

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

The development of North America as a typical continent is presented including the formation of mountains, the evolution of life, and the identification of fossils. Several field trips are taken. A three- day field trip is required with food and housing expenses the responsibility of the student. Students with experience equivalent to GLG 100 may contact the instructor for permission to waive the prerequisite.

GLG 202 Earth Science for Elementary Teachers **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course presents the content and methodology necessary for success in teaching earth science in the elementary school. It includes laboratory activities, laboratory projects, lesson planning and student presentations. Content topics include rocks and minerals, volcanism, mountain building, dinosaurs, and weather. Methodology topics include behavioral objectives, lesson plans, presenting lessons, and student-centered approaches.

GLG 219 Field Studies in Geology **1-4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours

This course teaches various elements of geology through field excursions. Students study the geologic history of the region as well as applying skills in map reading, site preparation and excavation, and collecting and cataloging specimens.

GLG 289 Dinosaurs for Educators **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GLG 202

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for future and present teachers to review definitions, old myths and new dinosaur theories. Dinosaur bones and other fossils will be used to understand the evolution, extinction and behavior of dinosaurs. Students will evaluate dinosaur related products, write lesson plans, make a presentation and learn how to clean and prepare dinosaur bones. Field trips are required.

German GRM

GRM 109 Beginning Conversational German **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is conversational in approach and assumes no previous knowledge of the language. It is geared chiefly for persons interested in obtaining a basic knowledge of spoken and written German, as well as an appreciation and awareness of contemporary German culture. German 109 may be taken as a preview for students entering the first year German studies or students already enrolled in the first year course. This course does not satisfy four year college language requirements. This course was previously GRM 120.

GRM 110 Intermediate Conversational German **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GRM 109 or one semester of college German

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a continuation of GRM 109, Conversational German. It emphasizes a conversational approach to the German language and includes instruction in the German culture including shopping, mass media, travel, social interactions, theatre and film. Emphasis is placed on speaking and listening comprehension. This course does not satisfy four year college language requirements. This course was previously GRM 121.

GRM 111 First Year German I **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is a beginning and transferable course in German which emphasizes the aural-oral approach. Classroom work and aural/oral practice sessions assist the student in establishing and perfecting basic conversational tools in the language. Students intending to study German should have a sound, basic background in English grammar and syntax to be able to take and succeed in a foreign language as inflected and analytical as German.

GRM 122 First Year German II **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GRM 111

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is a continuation of GRM 111. Continuing classroom work and aural/oral practice sessions emphasize the communicative approach. Class conversations, short readings, and pattern practice also assist students in acquiring facility in the language, as well as informational aspects of the culture. Students who have experience equivalent to GRM 111 may contact the instructor for permission to waive the prerequisite.

Graphic Design Technology GDT

GDT 100 Typography I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 127 or GDT 130 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This is an introduction to the evolution/principles of typography concentrating on typographic form and classification, type as form/image, display type, text type, typographic relationships, readability/legibility, grid systems, fundamental design principles, and page layout. Assignments investigate typography as an element of design whose form and purpose is to achieve successful, informative and expressive visual communication. Students must be proficient with desktop/personal computers.

GDT 101 History of Graphic Design **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents the history of Graphic Design from the Victorian Era to the present, focusing primarily on European and American major design movements and pioneering graphic designers/artists. Lectures refer to the social and political climates, the relationship of the applied arts to the fine arts, and technological innovations from the time of Gutenberg's movable type printing press through digital printing and media.

GDT 105 Introduction to Mac Graphics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to the fundamental tools and procedures of desktop publishing using Macintosh computers. Students complete tutorial exercises in a computer lab, using a variety of page layout and graphic applications. This course is recommended for those with little or no computer experience.

GDT 112 Graphic Communication I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 139 and GDT 140 minimum grade "C-"; GDT 139 may enroll concurrently

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

In this course, students explore and apply visual communication theories to produce dynamic visual statements. Matters of perception, cognition, aesthetics, semiotics, principles of design, critical thinking, ideation, and ethics are addressed. Emphasis is placed on personal exploration, inventiveness, and creativity.

GDT 127 QuarkXPress for Print Publishing — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the fundamental tools and techniques for creating page layouts for print publishing using the current version of QuarkXPress. Lectures and demonstrations introduce students to the tools and features of the software, and to basic typographic guidelines, followed by skill-building exercises and publications projects. Students enrolling in this course should be proficient with desktop/personal computers. This course contains material previously taught in GDT 125 and GDT 126.

GDT 130 InDesign for Print Publishing — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the fundamental tools and techniques for the page layout software, Adobe InDesign. Lectures, demonstrations, exercises, and publication projects prepare students for basic software proficiency in the current version of the software.

GDT 139 Illustrator Graphics — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 15 other, 60 total contact hours

This course covers the fundamental tools and techniques for the vector drawing software Adobe Illustrator. Lectures, demonstrations, exercises, and publication projects prepare students for basic software proficiency in the current version of the software. This course is a requirement in the GDT Design certificate and associate degree programs. Students enrolling in this course should be proficient in use of desktop/personal computers. This course contains material previously taught in GDT 137 and GDT 138.

GDT 140 Photoshop Graphics — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the primary features and uses of Adobe Photoshop image-editing software. Lectures, demonstrations, exercises and imaging projects introduce students to basic software tools and techniques for image correction, enhancement, compositing, and new image creation for both print and on-screen use. Students enrolling in this course should be proficient with desktop/personal computers. This course contains material previously taught in GDT 141 and GDT 142.

GDT 150 Design for the Internet — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 140, PHO 127 or INP 152, minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course provides a thorough introduction to the process of designing and constructing Web sites. Students complete exercises and projects using current industry standard Web authoring and image editing software. Graphic design principles and methodologies are used to construct a Web site and post it on the World Wide Web. Knowledge of vector drawing software is recommended.

GDT 174 GDT Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Students are placed in approved industrial work experience to gain skills and knowledge offered by the employer. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

GDT 214 Advanced Photoshop — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 140

40 lecture, 20 lab, 0 clinical, 0 other, 60 total contact hours

This course covers advanced features and uses of the image-editing software Adobe Photoshop. Exercises and production projects using the current version of Photoshop focus on developing skills and understanding of such topics as getting good scans, color spaces and profiles, tonal image correction, removing color casts, clipping paths, task automation and more. A good basic working knowledge of Photoshop is an essential course prerequisite. Students with equivalent experience may contact the instructor for permission to waive the prerequisite.

GDT 220 Publication Design — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 100 and GDT 112, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This is a graphic design digital studio course that focuses on layout and design of publications. Students continue development of skills in the application of design and typographic principles and practices, and produce a variety of single- and multiple page publications in black and white, spot and process color.

GDT 239 Imaging and Illustration — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 112

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

In this course the student develops skills with advanced digital tools, methodologies and concepts for communicating visual solutions with real world relevance. A variety of projects may include information graphics, rendering, editorial and interpretive illustration, spot illustration, and promotional illustration.

GDT 245 Computer-Aided Painting — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

In this course, students explore the world of digital art where the computer screen is transformed into an electronic canvas offering virtually limitless creative possibilities. Working with traditional themes, hands-on exercises and an array of simulated painting media and surfaces, students produce computer-generated images that have expressive and dynamic characteristics. Proficiency with the Macintosh computer is essential. Students with experience equivalent to GDT 105 may contact the instructor for permission to waive the prerequisite.

GDT 252 Advanced Digital Studio — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 220

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course offers advanced techniques and applications in computer based imaging and publication design. Topics include design, illustration, and electronic file preparation for offset printing involving integration of several professional graphics software programs. Advanced techniques in software such as Adobe PhotoShop, Adobe Illustrator, and QuarkXpress emphasize creative, real-world applications for graphic design production. Students who have equivalent experience may contact the instructor for permission to waive the prerequisite.

GDT 259 Graphic Communication II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 112, GDT 139, and GDT 140

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is an investigation into the process of visual communication; an interweaving of the graphic message, its theory, practice, technology, invention, and function with the desire to create, design, and illustrate. Students investigate the topics of nature, music, vernacular expression, and statistical data as stimuli for solving industry-related types of assignments.

GDT 270 Web Site Design — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 140, INP 176, and either GDT 140 or INP 182, all courses minimum grade "C"

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

Using current industry-standard image editing, Web authoring, and 2D animation software; students plan, design, produce, and publish Web design deliverables on the World Wide Web. Students analyze "client" need and target audience, and utilize principles of visual proposals and functional Web sites that communicate content effectively.

GDT 274 GDT Co-op Education II — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain further skills from continued experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

GDT 290 Professional Practices — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 48 credits in Graphic Design or Illustration program; consent required

45 lecture, 0 lab, 0 clinical, 45 other, 90 total contact hours

This class prepares students for seeking employment in graphic design and illustration. Topics covered include graphic design and illustration career options/specialties, job hunting skills/techniques, freelancing, resume and portfolio preparation, and includes a professional review of students' portfolios. This course should be taken during the final semester prior to graduation. This course was previously GDT 230.

Health Science — HSC

HSC 100 Basic Nursing Assistant Skills — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 3

40 lecture, 24 lab, 26 clinical, 0 other, 90 total contact hours

This course prepares students for employment in hospitals, long-term care facilities or home care as a Nursing Assistant, using classroom, laboratory and clinical methods for learning basic nursing skills. Students must be at least 17 years of age. Criminal background check clearance is required. Attendance is mandatory for all sessions. There is no make-up time permitted. Any absences will result in withdrawal from the course.

HSC 101 Healthcare Terminology — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course is designed to introduce healthcare professionals to terminology used in the workplace. Lecture material is supplemented by independent student computer assignments.

HSC 102 Introduction to Physical Therapy — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course examines careers in physical therapy with an emphasis on the physical therapist assistant. It provides an overview of the educational requirements, the state law regarding delivery of physical therapy services, the role of the physical therapist assistant as a member of the health care team, and the career opportunities for the physical therapist assistant. This course also allows students to explore the physical therapist assistant career and gain experience from entering the college environment.

HSC 115 Medical Office and Laboratory Procedures — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

37.5 lecture, 22.5 lab, 0 clinical, 0 other, 60 total contact hours

This course consists of lecture on office examining room procedures, sterile techniques, medical emergencies, specimen collection and minor surgery. Laboratory experience applies course material from the lectures.

HSC 131 CPR/AED for the Professional Rescuer and First Aid — 1 credit

Level I Prerequisites: No Basic Skills

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This American Red Cross CPR/AED first aid training program prepares students to respond to injuries and sudden illness. This course provides students with the knowledge and skills necessary to prevent, recognize, and provide basic care for injuries and sudden illness. The course includes adult CPR/AED, child and infant CPR, and first aid.

HSC 131B CPR/AED for the Professional Rescuer - Review — .5 credit

Level I Prerequisites: No Basic Skills

7.5 lecture, 0 lab, 0 clinical, 0 other, 7.5 total contact hours

This American Red Cross CPR/AED is a training program to prepare students to respond to sudden illness. This course provides students with the knowledge and skills necessary to prevent, recognize, and provide basic care for sudden illness. The course includes adult CPR/AED and child and infant CPR.

HSC 138 General and Therapeutic Nutrition — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course presents normal nutrition and its relationship to health. It includes a study of the nutrients and nutrition planning guides. Nutritional needs throughout the lifecycle are studied. Concepts of general nutrition are applied to various diet therapies prescribed for common disease states in clinical practice. This course contains material previously taught in HSC 118 and HSC 128.

HSC 147 Growth and Development — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 107 or ENG 111, minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers physical, cognitive and psychosocial changes of individuals from birth until death. The role of the family and theories of death and mourning also are included. This course meets nursing program requirements and is also open to the general student population. This course may transfer to four-year institutions. Contact the transfer college to confirm course equivalency.

Heating, Ventilation, and Air Conditioning HVA

HVA 101 Heating, Ventilating, and Air Conditioning I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

75 lecture, 15 lab, 0 clinical, 0 other, 90 total contact hours

This course introduces the concept of thermodynamics and principles of refrigeration. Major units covered include HVAC mathematics, refrigeration systems, refrigerants, refrigerant tables, contaminants, dryers, moisture in the air, refrigeration components (i.e. compressors, condensers, evaporators, metering devices, motors and accessories) and defrost systems. The components and operation of residential furnaces will be discussed. An overview of heating and AC systems and components will be provided from an operation and service perspective.

HVA 102 Sheet Metal Fabrication 4 credits

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071, may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091, may enroll concurrently; Academic Math Level 2

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course focuses on elementary sheet metal layout with an emphasis on developing sheet metal patterns by standard short-cut methods. Students gain hands-on experience fabricating the patterns into actual sheet metal locks, seams, clips, connectors, ducts, elbows, tees, and offsets. This course was previously TRI 103.

HVA 103 Heating, Ventilation, and Air Conditioning II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This course covers basic electrical theory as applied to heating, ventilation, air conditioning and refrigeration systems. Students solve electrical problems, construct and troubleshoot series-parallel circuits, identify and troubleshoot electrical components, apply alternating current principles, identify, test and troubleshoot motors and motor control circuits, and interpret electrical diagrams and use them to troubleshoot HVACR systems.

HVA 105 Residential and Light Commercial Heating Systems 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2 or MTH 067 may enroll concurrently; HVA 101 and HVA 103, minimum grade "C"; HVA 101 may enroll concurrently

75 lecture, 15 lab, 0 clinical, 0 other, 90 total contact hours

This course builds on the heating system skills and knowledge learned in prerequisite courses. Major units covered include HVAC mathematics, service and preventative maintenance for residential electric, gas, oil or hydronic, and heat pump systems. Students get an overview of indoor air quality, air distribution and installation concepts and techniques. The title of this course was previously Heating, Ventilation and Air Conditioning III.

HVA 107 Residential and Light Commercial Air Conditioning Systems 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2; HVA 101 and HVA 103, minimum grade "C"

75 lecture, 15 lab, 0 clinical, 0 other, 90 total contact hours

This course offers a review of basic electrical and refrigeration principles needed for maintaining and troubleshooting equipment. Sequence of operational, mechanical and electrical failures are covered for residential and light commercial equipment. This includes logical diagnostic techniques which are simulated on both computer simulators and live lab equipment. The title of this course was previously Heating, Ventilation and Air Conditioning IV.

HVA 108 Residential HVAC Competency Exams and Codes 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2; HVA 105 and HVA 107, minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

Students will learn the relevant codes to residential heating, ventilation, and air conditioning. Other topics include residential air conditioning requirements, proper operating conditions, and servicing requirements. Students will take a nationally recognized competency exam upon completion of the course.

HVA 201 Energy Audits 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 105 and HVA 107; may enroll concurrently in both courses

40 lecture, 20 lab, 0 clinical, 0 other, 60 total contact hours

This course provides a foundation for conducting energy audits. The course also provides fundamental energy audit-related information needed by HVAC technicians. Students develop the energy management skills needed to perform energy audits in commercial, industrial and residential settings. Topics include: techniques to reduce consumption of fossil fuels and electric power; heat recovery; thermal storage; continuous improvement; operations and maintenance practices; and energy waste elimination.

HVA 202 Air System Layout and Design 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 101 and HVA 103, minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an overview of duct systems, air flow, design, and analysis of indoor air quality issues. This includes components of air distribution systems, fan principles and sizing, noise troubleshooting, and system pressure losses.

HVA 203 Refrigeration Systems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 201 and HVA 202

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the fundamentals of refrigeration system operations, installation, maintenance, and troubleshooting. Topics covered include: types of refrigeration systems and their components; single and two-stage refrigeration cycles; evaporators; compressors; valves; pressure vessels; refrigerant choices; coefficient of performance; and food storage.

HVA 204 Central Heating Plants 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 201 and HVA 202

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an introduction to large boiler system operations. Topics covered include: low and high pressure boilers; boiler heat exchangers; fuels; combustion; heat exchangers; pumps; large boiler control systems; water treatment; air handling equipment; maintenance; and troubleshooting.

HVA 205 Hydronic Systems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 201 and HVA 202

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the fundamentals of hydronic (water) systems. Topics covered include open and closed hydronic system components, theory of operation, piping, pumps, expansion tanks, and water chillers.

HVA 206 Central Cooling Plants **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 201 and HVA 202

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an introduction to large scale cooling operations. Topics covered include: absorption systems including ammonia and lithium bromide; water chillers; cooling towers; air handling systems; pumps; control systems; maintenance; and troubleshooting.

HVA 207 Commercial Industry Standards with Competency Exams **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3; HVA 203 and HVA 205, minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

Students will learn the relevant codes to commercial heating, ventilation, air conditioning and refrigeration systems. Other topics include commercial air conditioning and refrigeration installation requirements, proper operating conditions, and servicing requirements. Students will take nationally recognized competency exams.

HVA 208 Codes and Industry Standards with Industrial ICE **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HVA 201 and HVA 202

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course reviews various electrical, plumbing, and mechanical codes as well as HVACR industry standards for design, operation, and maintenance of HVACR equipment and systems in relation to industrial systems. The Industrial Industry Competency Exam (ICE) is also administered.

History HST

HST 121 Western Civilization I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the essential social, cultural, political, economic and religious developments in Europe and the Mediterranean from ancient times to the Renaissance.

HST 122 Western Civilization II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the essential social, cultural, political, economic and religious developments in Europe from the Reformation to the end of the nineteenth century.

HST 123 The Twentieth Century **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will examine the essential social, cultural, political, and economic developments of the twentieth-century world, paying particular attention to the role of the Unites States in that world.

HST 150 African American History **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will provide the student with a framework for understanding the ways in which African Americans have contributed to American history and culture by examining the significant cultural, social, political, economic, and religious developments from 1619 to the present. While focusing on events in America, the course will also address important events in Africa that connect with African Americans.

HST 200 Michigan History **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The Michigan History course is a review and analysis of the social, economic and political history of the State of Michigan. Within the purview of the course is the study of the full extent of human experience from contact with the indigenous peoples through the arrival and implantation of European culture. The significant historical periods covered are Colonization, Territorial Years, Development from 1836 to 1861, Civil War and Post-War Development, the Progressive Era, World War I, the Great Depression, World War II and Post-War developments. This course can fulfill the Michigan history requirement for Teacher Certification in Social Studies (RX).

HST 201 United States History to 1877 **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course traces the development of the United States from its earliest beginnings up through the cataclysm of the Civil War and the subsequent Reconstruction Era. The approach is largely chronological, stressing cause and effect relationships, the roles played by prominent people, and the ways in which the events of the past have shaped contemporary society and its institutions.

HST 202 United States History Since 1877 **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course traces the development of the United States from the end of the Reconstruction Era through the late 20th century. The approach is largely chronological, stressing cause and effect relationships, the roles played by prominent people, and the ways in which the events of the past have shaped contemporary society and its institutions.

HST 210 U.S. Women's History **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the political, economic, social, and cultural contributions of women to the development of the United States, as well as the changing role of women in the formation of the nation's identity. The course also considers the ways in which race and ethnicity shape the differing experiences of women in American society.

HST 215 History of U.S. Foreign Relations **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course traces the history of U.S. foreign policy from the Revolutionary era to the present. It will address the relationship between the American economic, social, and political systems and the conduct of the nation's foreign policy. The role played by race, economics, ideology, and "national interest" will be assessed. Emphasis will be placed on the conduct of diplomacy immediately before, during, and immediately after periods of military conflict. The conduct of the Cold War will be reviewed in detail.

HST 216 U.S. Military History, Colonial Times to Present **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course traces the American military from its pre-colonial origins to the present. It addresses the relationship between the American economic and social systems and the nation's military, and addresses the effect of the nation's geography on the mission and organization of the military. Key conflicts such as the American Revolution, the Civil War, the Second World War, and the Vietnam conflict are addressed in detail in an effort to discern if there is a unique "American Way of War."

HST 220 The Civil War Era, 1845 - 1877 **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course deals with the causes, conduct, and impact of the American Civil War. It focuses on the political, social, economic, and racial background to the conflict, the conduct battles and campaigns, the formulation of strategy, the mobilization of the nations' societies and economies, wartime diplomacy and politics, and the numerous issues surrounding Reconstruction. The course will assess the impact of the war on the nation's society, political system, and economy.

HST 230 History of the Holocaust **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course investigates the origins, development, and legacies of the Nazi onslaught against the European Jews from 1933 to 1945.

HST 235 African History **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The African History course is a survey of the development of African society, its culture and institutions, with emphasis on the 13th century to the present. It will address the effects of Christianity, Islam, the Slave Trade and colonialism on the African continent. Emphasis will also be placed on the process of decolonization and industrialization in modern Africa.

HST 240 The History of the Modern Middle East, 1798 - Present **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to the history of the modern Middle East from the end of the eighteenth century to the present, focusing on the territories of the Ottoman Empire and its successor states. Major topics and themes will include Ottoman and Islamic institutions, the decline of the Ottoman and Persian empires and the rising influence of European powers, the emergence of Arab nationalism, the origins and development of the Arab-Israeli conflict, the emergence of radical Islamic movements, and contemporary events.

HST 251 War in the Modern World, 1500 - Present **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course deals with war and military institutions in Europe and North America since the beginnings of modern states (about 1500), while placing particular emphasis on the more recent period, from just before the American and French Revolutions to the present time. Its focus is on the interaction of warfare - a changing set of techniques and technologies - with the broader political, social, economic, and intellectual aspects of war as well as with the aftermath of war. Some attention is given to particular military campaigns and battles, but mainly to make clear the technical aspects of war and to illustrate important trends and patterns. The approach of the course is comparative, between the differing histories of nation-states, and between the divergent military experiences of Europe and North America. While touching on the global experience of war during the last four centuries, the course aims to explain the central role played by war in the history of the modern Western world.

HST 260 History of England to 1688 **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will provide the student with framework for understanding the various ways in which the English have influenced American history and culture by examining the essential social, cultural, political, economic, and religious developments in the British Isles from ancient times to 1688. While focusing on England, the course will also address important developments in Ireland, Scotland, and Wales.

HST 270 History of China **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course offers an introduction to the political, economic, social, and cultural history of China. After addressing the Ancient and Imperial periods, the emergence of modern China in the 20th century is examined in detail. The course also considers the factors leading to China's emergence as a global power in the 21st century.

Human Services Worker HSW

HSW 100 Introduction to Human Services **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to basic human service work, including discussion of the various target populations, the types of professions and careers, social organizations and systems, history, professional roles, ethics, and legal considerations. Students are challenged through group discussions to determine whether the field is suitable for them, and whether their values are congruent with values espoused by human service professions.

HSW 150 Helping Approaches for Groups **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces the beginning helper to using groups to promote change. The student learns how to screen candidates for groups, prepare potential members to use the group productively, use basic group techniques, attend to group process, and use specific activities and techniques to achieve desired outcomes. Students with experience equivalent to HSW 100 may contact the instructor for permission to waive the prerequisite.

HSW 200 Interviewing and Assessment **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to basic interviewing skills in the helping professions, as well as to the process of individual needs assessment. Students will learn both attending and influencing skills. In addition, they will learn how to write goals, objectives, and progress notes in the context of a client intervention strategy.

HSW 225 Family Social Work **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100 or SOC 100, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the theory and practice of social work with families. Students will learn how to analyze American families as social systems, and to identify common patterns in their structure and functioning. Common problems and special circumstances in family functioning will be addressed. Students will learn how to engage families and how to conduct a family intake assessment. Beginning theory on how to intervene with families will be addressed.

HSW 230 Field Internship and Seminar I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100, HSW 200, and SOC 220, minimum grade "C"

15 lecture, 0 lab, 180 clinical, 0 other, 195 total contact hours

This course integrates students into the working world by having them complete field work in a human service agency. The student will have the opportunity to progress from observations to directly supervised client contact, to indirectly supervised client contact. The field work will be integrated with course work during a one hour per week seminar. Learning objectives are individualized according to the field internship and career goals of each student.

HSW 232 Field Internship and Seminar II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100, HSW 200, HSW 230, and SOC 220, minimum grade "C"

Corequisites: HSW 220

15 lecture, 0 lab, 180 clinical, 0 other, 195 total contact hours

This course integrates students into the working world by having them complete field work in a human service agency. The student will complete this internship at a different agency from the internship held in HSW 230, or will hold a significantly different role in the same agency. The field work will be integrated with course work during a one hour per week seminar. Learning objectives are individualized according to the field internship and career goals of each student.

Humanities HUM

HUM 101 Humanities I - Ancient to Medieval Times **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Basic Computer Literacy is required Blackboard, e-mail, Internet research, typing

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an inquiry into a culture or a period through the creative disciplines of human artistic output focusing on the Western World. Class instruction will cover all periods through at least three media. The periods covered include: Prehistoric, Egypt Mesopotamia, Aegeans, Greece, Rome, and the Middle Ages. The media used includes: history, visual arts (painting, sculpture, architecture), literature, philosophy, music, and religion.

HUM 102 Humanities II - Renaissance to Modern Times **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: Basic Computer Literacy is required Blackboard, e-mail, Internet research, typing

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an inquiry into a culture or a period through the creative disciplines of human artistic output focusing on the Western World. Class instruction will cover all periods through at least three media. The periods covered include: Renaissance, Baroque, 18th, 19th, and 20th Centuries up to WWII. The media used includes: history, visual arts (painting, sculpture, architecture), literature, philosophy, music, and religion.

HUM 103 Introduction to Humanities - 20th Century **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the arts and cultural achievements of the 20th century in the Western world. It explores the political, social, and cultural ramifications of various events (i.e. World War I and II, Freud, technological advances etc.) on the arts. The student will understand the world around them by exploring the arts of the previous century.

HUM 140 Special Topics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Courses offered in this Special Topics series will provide a unique opportunity for alternative learning. With an emphasis on field work (trips to local museums, galleries, or studios), research projects, discussions, student presentations, and lectures, a wealth of material will be gathered to foster an understanding of the arts of one or more cultures or artistic periods. Areas of study focus on the fine arts and architecture but also include religion, way of life, cultural traditions, music, literature, and history.

HUM 145 Comparative Religions **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will examine the basic beliefs and practices of a variety of Eastern and Western religious traditions. During this examination, the central elements or concepts of these traditions will be explored, as will the role of religious practice in society and the lives of human beings.

HUM 146 Mythology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents myths from around the world and it explores the relationship between the development of a culture and its myth. The course also focuses on the similarities of the mythologies of all cultures, while touching on key points from other disciplines including psychology, science, and literature. Influences of these myths into Western culture will also be traced.

HUM 150 International Cinema **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of important foreign films and film makers (primarily, though not exclusively, European). The films viewed in class are discussed in terms of film techniques as well as in terms of content. No foreign language ability is assumed.

HUM 160 American Film **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The development of American cinema from its beginnings in 1896 to the present is studied. The films, viewed in class, are discussed in terms of technique as well as in terms of content. The course relates American cinema to themes in American culture.

HUM 170 Montreal World Film Festival **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This brief course will be held at the Montreal World Film Festival in late August. Students travel to Montreal to attend screenings of films at the festival. The course will appeal to those with an interest in film or in cross-cultural travel as it offers both intensive film-viewing and an introduction to the largest French-speaking community in North America. The course fee will cover round trip train travel from Windsor, hotel accommodations in Montreal, passes to ten Festival films and the Festival program guide. Orientation sessions will be held both on campus and in Montreal.

HUM 175 Arts and Cultures of Middle East (3000 BCE - 1800 CE) **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the arts and cultural achievements of the middle east from ancient times through the Ottoman Empire. It explores the political, social, and cultural ramifications of various events in the arts, literature, music, philosophy, and architecture of the area, with an emphasis on the Islamic period. The student explores the human experience in Middle Eastern culture through the evolution of artistic expressions.

HUM 185 The Horror Film **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a study of the horror film with emphasis on cultural relevance and aesthetic qualities. The student will explore cinematic expressions of the horror genre in terms of technique as well as content. Both feature films and documentaries will be viewed and analyzed.

Interior Design IDN

IDN 111 Interior Design Studio I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This course is the first in a series for interior design studios. The students will learn how to read construction drawings and related specifications as they apply to interior design planning. Students will obtain working knowledge of all residential and commercial construction material that affects interior design planning. Interior design students will learn how to integrate their profession with the architects and builders and create drawings and sketches of interior design spaces that conform to industry standards.

IDN 113 Theory of Interior Design I **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Students will investigate basic design elements and principles, as they relate to the design of interior spaces. Design elements and principles included in this course are fit, form, functionality, balance, harmony, variety, contrast, focus, unity, and rhythm. Attention to scale and proportion is also covered. These elements and principles will be utilized as the basic toolbox of interior design projects.

IDN 114 Human Needs in Design **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course introduces human needs as a factor in interior design. The principles of ergonomics and anthropometrics and how they influence the design of interior spaces will be discussed. The main focus of this course is on the physical, social and psychological factors that influence human behaviors and their impact on environmental design.

IDN 122 Interior Design Studio II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 111, IDN 113, and IDN 114, minimum grade "C"

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This course is the second in a series for interior design studios. The students will utilize both team and individual problem solving skills to design interior spaces for both residential and commercial sites. Application of anthropometrics, ergonomic, and appropriate building codes and regulations shall be demonstrated in design. Further development of interior design graphic presentation skills are emphasized in this course.

IDN 133 Theory of Interior Design II **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 113 minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course continues the application of psycho-sociological theories to the design of interior spaces. Students will learn how to use the perception of color, the effects of light, and environmental and behavior theories as they apply to the design of interior spaces.

IDN 137 Interior Design Materials **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course covers the various materials used in the design of interior spaces including both organic and inorganic supplies and resources. Specific materials may include fabrics, ceramics, wood, plastics, steel, and other materials. Attention to sustainable and durable materials and textiles will be addressed in this course.

IDN 201 Building Systems for Interior Design **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 122 minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course explores existing construction methods and building systems that affect the design of interior spaces. Students will be able to distinguish between the various framing/structural methods that create both load bearing and non-load bearing walls. Students will learn about common mechanical, electrical, data communications and plumbing systems that influence the layout of interior spaces.

IDN 211 Interior Design Studio III **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 122, IDN 133, and IDN 224, minimum grade "C"; IDN 224 may enroll concurrently

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This course is the third in a series for interior design studios and builds upon skills developed in the second studio course. In this studio, students will be designing more complex interior spaces that have historical theme requirements. Complex interior spaces may include retail floor space and residential spaces that may be restricted by historical district guidelines and regulations.

IDN 222 Interior Design Studio IV **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 211 minimum grade "C"

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

This is the final course in a series for interior design studios. This is a capstone course and will require students to solve for interior design issues working within the guidelines of the National Council for Interior Design Qualifications (NCIDQ). Students will be expected to complete all designs to professional standards independently and within strict time constraints.

IDN 224 History of Interior Design I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents the history of interior design from prehistoric times thorough the Renaissance period, focusing primarily on the various developments in architecture, interiors, decorative items, furniture, and fine arts. Topics will include the social and political climates, the relationship of applied arts to the fine arts, and technological innovations that had major impacts on materials used for the design of interior spaces and furniture.

IDN 234 History of Interior Design II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 224 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents the history of interior design from the Baroque period to the present, focusing primarily on European and American furniture and interior design movements and pioneering interior and furniture designers. Topics will include the social and political climates, the relationship of applied arts to the fine arts, and technological innovations that had major impacts on materials used for the design of interior spaces and furniture.

IDN 240 Interior Design Building Codes **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; IDN 122 and IDN 137, minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course takes an in-depth look at regional, municipal, fire and national building codes that are applicable to the interior space. Other jurisdictional statutes, regulations, national standards, and guidelines will also be consulted for the design of interior spaces. Green standards and sustainable design issues will be addressed.

Internet Professional INP

INP 140 Building a Web Site **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: CIS 100 or CIS 110, minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Many people find it desirable or necessary to create a Web site as part of their larger responsibilities in an organization or small business. This course takes such people through the process of planning a Web site, creating the pages with Macromedia Dreamweaver, and publishing them on the Web. In addition, the course teaches techniques for organizing information on the Web in the context of other information an organization typically disseminates, and making sure Web visitors can find what they need quickly and effectively. The focus of this course is not on graphic image design, and is not intended for people seeking a career as a professional Web designer.

INP 150 Web Coding I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to creating pages for the Web using Extensible Hypertext Markup Language (XHTML) and Cascading Styles Sheets (CSS). Students will create Web pages using a text editor and publish them on a server using an FTP program. Upon completion of this course, students will have a comprehensive understanding of document structure and formatting techniques as well as develop effective troubleshooting skills. A test-out is available for students with prior Web coding experience; interested students should consult with an INP faculty member.

INP 152 Web Graphics I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to the fundamentals, tools, and techniques of Web interface design and an introduction to Web design software applications. Students will gain an in-depth understanding of Web graphics production, including creating, manipulating and optimizing images and interfaces for the Web. Industry-standard software applications for Web design will be used in a PC-based classroom. This course was previously INP 143.

INP 153 Designing User Experience I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students learn the principles and practices of user-centered design, as well as the fundamentals of information architecture and interface design for the Web. The focus will be on critical evaluation of existing Web sites, and creating deliverables that a user experience professional would typically produce. Upon completion of this course, students will have a working knowledge of approaches, tools, and techniques pertaining to a variety of Web topics such as content design, interface design, navigation, organization, labeling, and site mapping.

INP 170 Web Coding II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 150 minimum grade "C-" or INP 150 Test minimum score 70%

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students will learn advanced coding and formatting techniques for creating Web pages. Students will create complex image-based layouts using XHTML and CSS, enhance their troubleshooting skills and learn to code for accessibility. Students will also discuss the process of coding for multiple devices and media.

INP 174 Internet Professional Co-op I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

Level II Prerequisites: Complete two INP core courses and two courses in the option

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Co-op courses provide the student with worksite skills and experience in an approved, compensated position related to their chosen field of study. Together with an instructor, an employer, and the Workplace Learning Center, the student determines work assignments and learning objectives to connect classroom learning with career-related work experience. Registration for a cooperative education course requires attendance at a co-op orientation.

INP 176 Web Animation I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 152, GDT 139, or GDT 140, minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the basic skills and techniques used to create animation for the Web. The class will use the latest industry-standard software to create simple animated Web presentations, Web sites, and interactive games. Students will gain an understanding of all aspects of animating for the Web from concept and storyboarding, to final production and implementation. This course was previously INP 272.

INP 182 Web Graphics II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 152 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students will gain an in-depth understanding of the features and uses of Adobe Photoshop and ImageReady in the context of Web deliverables. Topics covered include interface layout techniques, navigation systems design, image manipulation with raster and vector tools, masking, and advanced collage techniques. Software applications for Web design and development will be used in a PC-based classroom.

INP 190 Web Project Management — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 153, INP 170, and INP 182, minimum grade "C-"; INP 170 and INP 182, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students learn the concepts and practices involved in managing and tracking a Web development project from concept to completion. Students work in teams to develop a comprehensive Web site project plan, and then implement this plan to create a simple, functional Web site. Course content includes preproduction tasks such as estimating, planning, and writing specifications, as well as developing test plans, conducting quality assurance testing, and exploring site analytics.

INP 203 Designing User Experience II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 153 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students will gain experience with various methods for evaluating and improving Web site usability and accessibility, as well as learn about technologies and techniques for presenting and managing Web content. In exploring the area of accessibility, the students will use adaptive technology to better understand how users with disabilities experience Web sites. Students will also research recent developments in the user experience field and explore opportunities for employment and further education in the field.

INP 212 Web Graphics III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 152 and INP 182, minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students will gain an in-depth understanding of Web interface design techniques, including layout, style, audience, and navigation systems. Using Adobe Photoshop and Image Ready, students will create Web interfaces that effective and aesthetically resolve interface design challenges. Topics covered include user centered design, experimental design, full-graphic interface development and slicing techniques. Software applications for Web design and development will be used in a PC-based classroom.

INP 253 Designing User Experience III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 203 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students will be working with clients to assess and improve the user experience of their Web sites and Web applications. Classroom material will supplement that real-world experience by exploring the usability issues that arise in e-commerce Web sites, e-government Web sites, intranets, extranets, and other environments. Best practices for AJAX, form design, personalization, internationalization, and providing Web content to hand-held devices are also considered.

INP 271 Web Coding III — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 170 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on Web application development using JavaScript and the Document Object Model. Accessible, unobtrusive, and standards-compliant coding techniques are stressed. Asynchronous JavaScript and XML (AJAX) approaches are also considered.

INP 274 Internet Professional Co-op II — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Co-op courses provide the student with worksite skills and experience in an approved, compensated position related to their chosen field of study. Together with an instructor, an employer, and the Workplace Learning Center, the student determines work assignments and learning objectives to connect classroom learning with career-related work experience. Registration for a cooperative education course requires attendance at a co-op orientation.

INP 275 Web Database — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 170 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to database concepts and the implementation of database-driven Web applications using ASP.Net. Students will learn C# and SQL and will use industry standard development tools and databases. Students will also gain some experience in configuring an ASP.Net Web server. No prior database experience is required. This course was previously INP 283.

INP 276 Web Animation II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 176 minimum grade "C-"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course students will learn advanced animation techniques for the Web, with a focus on creating effective, interactive user interfaces. The class will combine both interface design concepts and basic programming using ActionScript to create animated Web presentations, interactive Web sites and advanced games. This course is intended for students interested in enhancing their Flash skills and gaining a basic knowledge of object-oriented programming concepts.

INP 281 Web Coding IV — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 271 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to server-side scripting languages for the Web. PHP and Ruby are given the greatest focus, with consideration also given to frameworks such as Ruby on Rails. Core server-side concepts are stressed, including data storage and retrieval as well as template-based Web development.

INP 285 Web Server Security — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 121 minimum grade "B"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to Web server security using Linux, Apache, MY Sql, and PHP (LAMP). Students learn how to identify security risks, how to configure the Apache web server to avoid unwanted access, where to find and how to read system log files, where to turn services on and off, and the basic theory of a firewall. Students also configure Linux servers to both allow and disallow various types of access, including password protecting directories, turning file transfer (FTP) on and off, and setting up file system permissions.

INP 290 Web Design Practicum — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; At least 20 credits of INP classes, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the capstone course in the INP degree and advanced certificate programs. Students will work as teams to plan, produce, and implement fully functional client Web sites. Students will also learn how to create template-based, dynamic Web sites as part of exploring advanced site management techniques. This course was previously INP 260.

INP 295 Professional Practices — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 20 credits in INP discipline at 100 level or above

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This class prepares students to seek employment in the Web design industry. Students will explore career options and gain experience in the job search process, including developing a resume, cover letter, and an online portfolio Web site. Students will have the opportunity to interact with Web professionals working in various Web design roles.

Machine Tool Technology — MTT

MTT 102 Machining for Auto Applications — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

20 lecture, 40 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an introduction to basic machine tool operations. Much emphasis is placed on shop safety. Topics covered include: inch and metric precision measurement tools, tool identification, cutting speed calculations, drilling and tapping. Lab projects cover the basic operation of horizontal band saw, contour band saw, vertical milling machine, surface grinder, lathe, and threading on lathe. Machining contours is demonstrated on a CNC machining center.

MTT 105 Machine Tool Skills Laboratory — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTT 102 or MTT 111, minimum grade "D"

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This class is designed to give students enrolled in other courses an opportunity to use the machine shop with faculty instruction. Many classes on campus require students to build or modify parts. For example, classes such as robotics require students to design and build working manufacturing cells. Lecture, along with demonstration, will be used to make students aware of various machine tool setups. Students who want to maintain their machine tool skills can select from dozens of projects available.

MTT 111 Machine Shop Theory and Practice — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course provides an introduction to machine tool operation. Much emphasis will be placed on shop safety. Other topics that will be covered include: basic measurement, drawings, hand tools, feeds and speeds and rotary tools. In addition to the above, students will gain valuable "hands on" experience learning basic operations on the sawing machines, engine lathes, milling machines, and grinding machines.

MTT 174 MTT Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTT 202; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Students are placed in an approved work experience to gain skills and knowledge offered by the employer. Together with the instructor and the employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experiences. Students with experience equivalent to MTT 202 may contact the instructor for permission to waive the prerequisite.

MTT 203 Advanced Machine Tool Operations — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 151 and MTT 111, minimum grade "C-"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is a continuation of MTT 111, and will give students advanced machine tool skills required by industry. Topics include: carbide tooling identification and uses, threading and thread forms, cutting internal and external tapers, precision measurement, advanced layout and set-up techniques, and grinding. The student will attain a higher comprehension level for set-up and tooling requirements needed for CNC programming and CAD/CAM classes.

MTT 240 Mechanical Trades — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course addresses mechanical fundamentals for students in the millwright and mechanical trades. Topics include safety, safe working loads for ropes and cables, structural materials/applications, types/applications of lubricants, bearings, belts, chains, sprockets, sheaves, fasteners, conveyor systems, cranes, and power lifts. Projects apply plant layout and material handling methods, manufacturing sequencing, line balancing, flow requirements, workstation layout, ergonomic and space requirements. This course contains material previously taught in MTT 140.

MTT 274 MTT Co-op Education II 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTT 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Students are placed in an approved work experience to gain skills and knowledge offered by the employer. Together with the instructor and the employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experiences.

Mathematics MTH

MTH 067 Foundations of Mathematics 4 credits

Level I Prerequisites: Academic Reading Level 4; no minimum writing level; Academic Math Level 1

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the first of two courses in the developmental math sequence. Basic calculations with whole numbers, decimals, integers, and fractions are mastered. Applications including percents, statistics, measurement, and problem solving are introduced. A systematic method leading to algebraic problem solving is stressed. Students who complete this course, and pass the Basic Skills Exam with a minimum score of 75%, are prepared for Foundations of Algebra.

MTH 097 Foundations of Algebra 4 credits

Level I Prerequisites: Academic Reading Level 4; no minimum writing level; Academic Math Level 2

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the second of two courses in the developmental math sequence. The scope and content of this course is equivalent to a first-year high school algebra course. Topics include the real number system, algebraic operations, solving equations, practical applications, graphing, systems of equations, polynomial expressions, introduction to roots and radicals, and quadratic equations. Students who complete this course, and pass the LEE Exam with a minimum score of 75%, are prepared for college-level mathematics.

MTH 125 Everyday College Math 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is intended to further student's mathematical knowledge of concepts and applications they might encounter in everyday adult life. Students will investigate topics including, but not limited to: advanced consumer math (mortgage interest, investing, credit cards), probability, graphs and statistics (including the normal curve), basic logic, clock arithmetic, and voting methods. This course has replaced MTH 163.

MTH 148 Functional Math for Elementary Teachers I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is the first in a two-course sequence presenting the mathematical concepts and problem-solving techniques necessary for success in a teaching career at the elementary school level. It is not a course solely for math teachers; rather it provides a general mathematical background for teachers of all subjects. Topics include problem solving, sets, numeration systems, number theory and the whole, integer, and rationale number systems.

MTH 149 Functional Math for Elementary Teachers II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 148 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is the second in a two-course sequence presenting the mathematical concepts and problem-solving techniques necessary for success in a teaching career at the elementary school level. It is not a course solely for math teachers; rather it provides the general mathematical background for teachers of all subjects. Topics include probability, an introduction to statistics, introductory geometry, congruence and similarity, and measurement concepts.

MTH 151 Technical Algebra 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This course introduces algebraic, geometric, and trigonometric concepts in an applied setting and is primarily for trade and technical students. Topics, which emphasize applications, include: a review of the fundamentals of fractions, decimals and percents; terminology and applications of geometry; measurements and conversions; algebraic expressions, equations, and formulas; ratio and proportions; summary graphs and charts; and an introduction to right triangle trigonometry.

MTH 157 Practical Geometry and Trigonometry 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course in the measurement of geometric shapes. Topics include: general measurement principles; perimeter; area; volume; and the measurement of length and angle (in general and applied settings). A two-line scientific calculator is required for this course. See the time schedule for current brand and model. This course contains material previously taught in MTH 107 and MTH 152.

MTH 160 Basic Statistics 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides students with a general understanding of statistical concepts dealing with the processing and interpretation of numerical information. Topics covered include describing a numerical data set, central tendency, variability, probability distributions, inference, and hypothesis testing. A graphing calculator is required for this course. See the time schedule for current brand and model.

MTH 166 Math for Radiography 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is intended for students who plan to participate in the radiography program at WCC. It satisfies the math requirement of that program. Students will prepare for radiography concepts through arithmetic and algebraic applications, working with proportions and the square laws, and interpreting graphical and statistical information.

MTH 167 Math Applications for Health Science 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course reviews the mathematical and algebraic skills required to solve calculations in health-related fields. This course relates these skill applications in the nursing field. The topics which emphasize applications in the nursing field include: mathematics through algebra; the metric, apothecary, and household systems; proportions, conversion factors, and an introduction to statistics.

MTH 169 Intermediate Algebra 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Intermediate Algebra is the second course in the algebra sequence. Topics include relations, linear functions, linear systems, quadratic functions, polynomials, exponents, inequalities, absolute value, rational and radical functions. A graphing calculator is required for this course. See the time schedule for the current brand and model.

MTH 176 College Algebra 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides the necessary background for pre-calculus when combined with a course in trigonometry. Topics include properties of real and complex numbers, relations and functions, graphs, rational functions, exponential and logarithmic functions, quadratic functions, inverses, non-rational functions, and systems of equations and inequalities. A graphing calculator is required for this course. See the time schedule for the current brand and model. This course was formerly MTH 179.

MTH 178 General Trigonometry 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 5 or MTH 169 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a rigorous background in trigonometry necessary for students intending to study calculus. Topics include: trigonometric functions, inverse trigonometric functions, radian measure, trigonometric graph, identities, solutions of trigonometric equations, solution of triangles, rotation, and vector triangles. A graphing calculator is required for this course. See the time schedule for current brand and model. It is recommended that MTH 176 be taken before or concurrently with this course.

MTH 180 Precalculus 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This course provides the necessary college algebra and trigonometric background for calculus for those with a background in the study of trigonometry. Topics include relations and functions rational and non-rational; exponential, logarithmic, and trigonometric functions; and analytic geometry. A graphing calculator is required for this course. See the time schedule for the current brand and model.

MTH 181 Mathematical Analysis I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course teaches the methods and applications of finite mathematics applied to social science and business. Topics covered include solution to linear equations and inequalities, mathematics of finance, matrices, linear programming, sets, probability and statistics. To confirm transfer equivalency, consult a counselor or check the Web page of the college to which you are transferring. A graphing calculator is required for this course. See the time schedule for current brand and model.

MTH 182 Business Calculus 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 5

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course teaches the elementary methods of calculus applied to social science and business. Topics covered include functions, differentiation of algebraic functions, optimization, constrained optimization, exponential functions and logarithmic functions and their derivatives, integration, the definite integral as accumulation, and an introduction to multivariate calculus. This course emphasizes applications and problem setup. A TI-83 or TI-84 graphing calculator is required. The title of this course was previously Mathematical Analysis II.

MTH 191 Calculus I 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 7

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is first-semester college calculus of one variable. Topics include: limits, continuity, derivatives, applications of derivatives, elementary integration, and transcendental functions. A graphing calculator is required for this course. See the time schedule for current brand and model.

MTH 192 Calculus II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 191 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is a second semester college calculus course of one variable. Topics include applications of integration, integration techniques, L'Hospital's Rule, improper integrals, infinite series, parametric equations and polar coordinates. A graphing calculator is required. See the time schedule for current brand and model. This course transfers to four-year institutions.

MTH 197 Linear Algebra 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 191 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is an introductory college course in linear algebra. Topics include linear systems of equations, properties of vectors and matrices, determinants, vector spaces, linear transformations, eigenvalues, and applications. A graphing calculator is required for this course. See the time schedule for current brand and model.

MTH 293 Calculus III 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 192 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is the third-semester college calculus of more than one variable. Topics include geometry in the plane and in space, vector-valued functions, partial derivatives, multiple integrals, and an introduction to vector calculus. To confirm transfer equivalency, consult a counselor or check the Web page of the college to which you are transferring. A graphing calculator is required for this course. See the time schedule for current brand and model.

MTH 295 Differential Equations — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTH 197 and MTH 293, minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an introduction to the concept of differential equations which is necessary for students in engineering, physics, and other science majors. Topics include methods for solving ordinary differential equations, numerical methods, Laplace transforms, and techniques for solving systems of linear differential equations and their applications. A graphing calculator is required for this course. See the time schedule for current brand and model.

Motorcycle Service Technology — MST

MST 110 Motorcycle Service Technology I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This entry level course provides an understanding of the operation of a motorcycle service department. It will instruct the student in the proper use of hand and shop tools. The theory, operation, tolerances, and specification of basic internal combustion engines will be covered. Included in this class are the proper procedures for new vehicle set up and mileage-based maintenance and installation of accessories.

MST 120 Motorcycle Service Technology II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 110 minimum grade "C"

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours

Students learn to identify and explain the operational theory of motorcycle drivelines, to diagnose, service and repair primary and final drive systems, clutch assemblies, transmissions, wheels, brakes, and front and rear suspension components. They also learn the theory of frame geometry and design.

MST 130 Motorcycle Service Technology III — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 120, MTT 102, and WAF 105, minimum grade "C"

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours

This course focuses on problem-solving strategies for isolating defective components and the troubleshooting and repair of: wiring harnesses, charging systems, ignition systems, and starting systems. The principles, components, operation, troubleshooting, service, and repair of both carbureted and fuel-injected systems will be covered.

MST 140 Motorcycle Service Technology IV — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 130 minimum grade "C"

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours

Through the use of manufacturer's service and parts manuals, the student learns the proper procedure for preparing complete and accurate damage repair estimates. Using a combination of classroom and hands-on skills training, students learn to diagnose, service, and repair single- and multiple-cylinder engines.

MST 210 Performance Engine Technology — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 140 minimum grade "C"

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours

The student learns to identify the theory and components of a performance engine. They also learn the advantages and disadvantages of raising the level of peak performance of an engine. The course will supply the knowledge to design and install a performance enhancement package.

MST 220 Dynamometer Operations — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 140 minimum grade "C"

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours

Students learn to identify the components and operation of a load control dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic and tuning tool. The course will instruct the student in the design and application of custom fuel and ignition mapping.

Music — MUS

MUS 103 WCC Jazz Orchestra — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Jazz Orchestra is a performance-oriented course with an emphasis on musical phrasing, blending, and improvisation. This course will focus on melodic, harmonic, and rhythmic skills necessary for performing in a big-band setting. The class will perform in the community and on campus. The lessons focusing on musical skills vary depending on the musical selections, which change each semester; therefore, there is no limit as to how often the course can be repeated. However, this course can only be repeated for credit up to a maximum of four times.

MUS 104 Top 40 Combo — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This class will put emphasis on performing the type of music that is popular with dance, wedding receptions, and nightclub audiences. It will examine the different elements that make songs popular and more appropriate for dancing. The instrumentation in this type of combo will consist of lead and rhythm guitars, electric bass guitar, piano and synthesizers, drums, saxophone, trumpet and vocals. This class will perform in different venues throughout the community.

MUS 105 Basic Combo and Improvisation — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This is a basic performance skills class for instrumental and vocal solo or small group expression. Students learn basic improvisation and listening skills, how to express their original ideas through the acquisition of chord and scale relationships, and communication and group interaction skills. Students must demonstrate basic competency on their instruments.

MUS 106 Jazz Combo and Improvisation — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is designed for the musician with some degree of competency to gain experience and skill in performance and improvisation of different styles of music. This is a performing group which offers concerts at WCC and in the community-at-large.

MUS 135 Chorus — 1 credit

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This is a course in performance of a wide variety of choral music. This group is open to all students. It may be repeated for credit up to a maximum of three times.

MUS 136 Gospel Chorus — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course in vocal studies covers ensemble and solo singing in the gospel music tradition. Vocal and breathing exercises, rehearsal techniques, improvisation, gospel vocal arranging skills, and a brief history of gospel music will be covered. Class performances will be presented each semester.

MUS 140 Music Theory I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give prospective musicians (hobby to professional) a basic foundation in the reading, writing, and understanding of musical notation. Students will explore the basic concepts of musical form, rhythm, meter, pitch notation, and creative use of music as it relates to their individual goals. Students should have some prior experience in performing with an instrument, creating music, or have a desire to perform or study music further.

MUS 142 Music Theory II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MUS 140

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to provide musicians (hobby to professional) a more advanced knowledge of music composition and performance vocabulary. Students will work on ear training, music notation, and analysis of creative composition of music techniques. Students will learn to make career and music theory plans and to implement these plans.

MUS 146 Songwriting and Creative Improvisation — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

For the prospective song writer, this class deals with lyric writing and musical accompaniment. Students collaborate using their talents to produce songs and also become acquainted with musical styles through recordings and demonstrations. Music industry procedures concerning how to get a song published and recorded is discussed. Other areas of study include recording, the recording studio, record pressing and copyright procedures.

MUS 147 Entertainment Law — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This is a music course for the serious music student and professional musician covering basic agreements, contracts, royalties, copyrights and other legal aspects in the music industry.

MUS 162 Music Sequencing and Programming — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class demonstrates how to compose songs using a MIDI keyboard workstation and focuses on making the recording process a one-person operation. The student will record and edit original compositions using multiple tracks and will quantize rhythms and simulate instruments such as piano, drums, guitar, and bass guitar. The class will include string and horn arranging.

MUS 170 Computer Applications in Music — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course uses computer applications to provide basic instruction in the theory of computer-aided composition and sequencing. Terminology and theory in MIDI, digital audio, keyboard synthesis, and sequencing as are covered. Students will apply themselves to basic assignments in the areas cited above and complete individual and group projects.

MUS 175 Audio Recording Technology I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to provide students with the fundamentals necessary for a career-oriented study in creative audio recording. Audio-visual and hands-on experience (professional recording studio access) is provided, as is lecture and studio experience on multimedia recording and mixing techniques.

MUS 180 Music Appreciation — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This introduction to music, using innovative techniques on how to listen to music after becoming acquainted with the socio-cultural values of people who produced the many kinds of music of our world. All music styles are covered. Presentations deal with the growth and development of musical forms and different styles through recording, demonstrations, instructor and student generated demonstrations and projects.

MUS 204 Voice I — 3 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

This course is a beginning course in voice, enabling the student to effectively sing with proper technique as well as perform beginning repertoire in class. The course covers fundamentals of vocal technique, basic anatomy and physiology of the voice, basic music terminology, and exposure to various vocal styles and genres. A significant amount of class time is spent on individual performance in a studio class setting.

MUS 205 Voice II — 3 credits

Level I Prerequisites: No Basic Skills

Level II Prerequisites: MUS 204 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

This course is a continuation of MUS 204, providing studies beyond the beginning stage. It focuses more on individual development in terms of technique, repertoire, and performance. The course also further develops the student's knowledge of theory, sightsinging and basic musicianship as they apply to the singer. Students with experience equivalent to MUS 204 may contact the instructor for permission to waive the prerequisite.

MUS 209 Musical Theatre Song Performance Seminar — 2 credits

Level I Prerequisites: No Basic Skills; MUS 204

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is a studio/seminar on song performance in the musical theatre genre, and is intended for students with background in voice. Vocal technique, diction, performance techniques, and development of repertoire are emphasized in a studio class setting. Students perform frequently in class and receive coaching from the instructor as well as feedback from their classmates. It is suggested that this course be taken the first time in conjunction with DRA 209, Acting for Musical Theatre. Students with experience equivalent to MUS 204 may contact the instructor for permission to waive the prerequisite. Course may be repeated up to three times for credit.

MUS 210 Functional Piano I — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

In this course, students who wish to learn the fundamentals of playing the piano develop the ability to read and execute keyboard music harmonically and melodically. The course covers basic musicianship, fundamentals of piano technique, elementary keyboard harmony, sight-reading, pedal technique, and keyboard facility for use in support of other music classes. The course also offers an introduction to how the piano works, its development, and composers and pianists in various styles.

MUS 211 Functional Piano II — 2 credits

Level I Prerequisites: No Basic Skills

Level II Prerequisites: MUS 210 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is a continuation of MUS 210, providing studies beyond the beginning stage. The focus is on individual development in terms of technique, expression, and performance. The course also provides further keyboard skills and historical and theoretical background. This course was previously MUS 213.

MUS 216 Blues and Jazz Piano I — 3 credits

Level I Prerequisites: No Basic Skills; MUS 210 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course about the basic styles of Blues and Jazz piano which covers the origin of Blues piano along with the forms and structuring of primary chord progressions, scales, and 8 bar blues, 12 bar blues, jazz piano voicing and styling. This course will also involve Blues and Jazz improvisation as well as performing Blues and Jazz standards.

MUS 217 Blues and Jazz Piano II — 3 credits

Level I Prerequisites: No Basic Skills; MUS 216 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of Blues and Jazz Piano I. It is an advanced examination of jazz keyboard improvisational concepts, executing all styles of jazz standards from ballads to swing to Latin Jazz. The course will include a preparatory study of jazz voicing, phrasing, and improvisation techniques with a special emphasis on Blues and melodic improvisational concepts for both solo piano and ensemble styles.

MUS 233 Beginning Guitar — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Designed for those with limited or no experience playing the guitar, this course teaches basic chords and techniques as well as folk and Blues songs. Class is keyed to students' interests and needs.

MUS 236 Intermediate Guitar — 2 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is for students with a basic knowledge of guitar playing. There are opportunities to learn more advanced techniques as well as learning about song arrangements and theory. Class is keyed to students' interests and needs.

MUS 237 Finger-Style Blues and Slide Guitar — 3 credits

Level I Prerequisites: No Basic Skills; MUS 233 and MUS 236, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course draws from the history of the musicians from the Delta regions of Mississippi in the 1930's and beyond. It will focus on the finger picking techniques and the alternate tunings used by the great blues artists who inspired the blues tradition from Robert Johnson to Stevie Ray Vaughn. Students will execute various right hand techniques, such as alternating bass rhythms, shuffle bass rhythms, and Delta strumming rhythms. Left hand techniques will include advanced chord formations associated with blues theory, chord formations associated with the alternate tunings as well as techniques associated with the use of bottleneck slide. The student will also illustrate and explore blues theory and progressions.

MUS 239 Jazz Guitar I — 3 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

This course will focus on the styling of jazz guitar greats like Wes Montgomery, Kenny Burrell, and Joe Pass. Students will examine Montgomery's chord melody solos, the melodic content of his solos, and the use of playing with octaves. Students will learn the importance of Burrell's dynamics sensitivity, and will gain insight into Pass' playing of chords, walking bass lines, and improvising. Through the use of videotape these guitar masters will be introduced into the classroom.

MUS 240 Jazz Guitar II — 3 credits

Level I Prerequisites: No Basic Skills; MUS 239 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class will focus on the styling of jazz guitar greats such as Wes Montgomery, Kenny Burrell and Joe Pass. It will examine chord melody solos, the melodic content and playing with octaves. Through this study the student will learn the importance of dynamics and sensitivity. The class will give insight into improvisationally playing chords and walking bass lines simultaneously.

MUS 241 Rock Guitar — 2 credits

Level I Prerequisites: No Basic Skills; MUS 236 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course provides the student the opportunity to learn several techniques from the rock guitar genre. Classes will cover several styles from the fifties through current rock music trends. Students will need an electric guitar, small amplifier, and an understanding of tablature notation.

MUS 244 Rock Guitar: Tones and Techniques — 2 credits

Level I Prerequisites: No Basic Skills; MUS 236 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Rock Guitar: Tones and Techniques details how famous guitarists have achieved the sounds and styles heard on hit records and in concert. Students will learn how they can apply these principles to develop commercially viable sounds of their own. The course takes a hands-on approach to using equipment (guitars, amplifiers, effects devices) and to developing techniques for soloing and playing rhythm, as well as performing professionally in a variety of venues.

MUS 245 Music Producing and Arranging — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MUS 175 minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This class covers string and horn arranging with emphasis on arranging a rhythm section (guitar, bass guitar, drums, piano and keyboards). Also covered, is the role of the producer and the skills necessary for creating a finished recording product for the commercial market. The student should have some knowledge of general music theory.

MUS 248 Sound Reinforcement for Stage — 3 credits

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

This class covers all aspects of theatrical amplification from the spoken word to musical performances. It will demonstrate how to equalize sound in order to amplify it. The class emphasizes the importance of monitoring the stage and mixing console while making volume and equalization adjustments for diverse musical and theatrical events.

MUS 251 Classical Piano I — 3 credits

Level I Prerequisites: No Basic Skills; MUS 210 or MUS 211, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to introduce students to proper techniques of classical piano. Techniques include hand position, tone, dynamics, phrasing, and meter. The student will also learn music theory (form, chord structures, voice leading) and history as it pertains to the music. Short preludes and etudes and other appropriate repertoire will be introduced to further develop technique and reinforce an understanding of classical style. The student will have an opportunity to study works of master classical composers such as Bach, Beethoven, Mozart and Chopin.

MUS 252 Classical Piano II — 3 credits

Level I Prerequisites: No Basic Skills; MUS 251 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of the Classical Piano I course and is designed to move the student to the next level of study. The student will move on to advanced study of the classical piano focusing on advanced techniques for the left and right hand, tone, dynamics, phrasing and meter. The student will study works of master classical composers such as Beethoven, Mozart, J.S. Bach, Tchaikovsky, Chopin and others.

MUS 271 Beginning Classical Guitar — 3 credits

Level I Prerequisites: No Basic Skills; MUS 233 and MUS 236, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to introduce students to proper finger-style techniques by focusing on the classical guitar approach. Techniques include proper left and right hand position, tone, dynamics, phrasing and meter. Students will be introduced to short preludes and etudes to further develop technique. A nylon string classical guitar is recommended.

MUS 272 Intermediate Classical Guitar — 3 credits

Level I Prerequisites: No Basic Skills; MUS 271 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of the Beginning Classical Guitar course and is designed to move the student to the next level of study. The student will move on to advanced study of the classical guitar focusing on advanced techniques for the left and right hand position, tone, dynamics, phrasing, and meter. The student will be introduced to complex preludes and etudes to further develop technique. The student will study works of master classical composers such as Beethoven, Mozart, J.S. Bach, Tchaikovsky, Handel, and others. A nylon string classical guitar is recommended.

MUS 275 Audio Recording Technology II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MUS 175

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a career-oriented course for advanced audio technology recording. Students apply basic theory and recording skills to progressive recording of solo instrumental, small group and finally multi-track large ensembles. Students are assigned projects to record both students and professional groups within the college or externally.

MUS 280 Voice III - Classical Voice — 3 credits

Level I Prerequisites: No Basic Skills; MUS 204 and MUS 205, minimum grade "C+"; MUS 205 may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will expose students to the techniques and fundamental principles involved in the preparation and study of classical vocal repertoire. The class will assume knowledge of vocal production and stage presence from Voice I and Voice II. The curriculum will include the provision of theoretical vocal and musical concepts, as well as the application of classical voice principles through studio and/or outside performances.

MUS 285 Self Management for Working Artists — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class will teach students to market their skills as a musician. The class will instruct students on interpersonal skills, preparing a portfolio, booking performances, preparation and analyzing contracts, and negotiating skills to determine a monetary value for a musicians work. It will teach students how to manage their business while creating a multi-faceted career. Careers include an entertainer, engineer, arranger, producer, instructor, publisher, author, manager and, booking agent.

Numerical Control — NCT

NCT 101 Introduction to Computerized Machining (CNC) - I — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is the first course of the numerical control series. It is a beginning level course. Students are exposed to various aspects of automated machining centers used in automated manufacturing. Studies include an introduction to; controllers, fundamentals of set-up and operation, programming CNC controllers, CAD CAM software, and simulation software. This course contains material previously taught in NCT 112.

NCT 110 Introduction to Computerized Machining (CNC) - II — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NCT 101 minimum grade "C"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of NCT 101. This class focuses on the set-up and operation of CNC mills and lathes in the laboratory. Different parts will be machined, to specification, though variations of set-up and interactions with the machine tool controllers. Students will be able to operate the CNC vertical mills and CNC lathes in the lab after successful completion of this class. This class prepares students for the manual programming and advanced programming classes where students will be required to program, set-up and cut various parts. This course contains material previously taught in NCT 112.

NCT 121 Manual Programming and NC Tool Operation — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; MTT 111, NCT 101, and NCT 110, minimum grade "C-"; NCT 101 and NCT 110, may enroll concurrently

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This is the first in a two-course study of manual programming of CNC milling and turning centers. Students experience the entire process of part manufacturing by processing working drawings of sample parts, writing and editing of programs, set up and operation of CNC machine tools, and inspection of the finished products. Feeds and speeds, fixed cycles, program editing, set up procedures, and tape preparation are major topics presented. Laboratory time is required outside of class time. Students with experience equivalent to NCT 101 and NCT 110 may contact the instructor for permission to waive the prerequisites.

NCT 174 NCT Co-op Education I **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NCT 221; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Students are placed in an approved industrial work experience to gain skills and knowledge offered by the employer. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

NCT 221 Advanced Manual Programming and NC Tool Operation **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NCT 121 minimum grade "C-"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This is the second of a two-course study of manual programming and CNC Machine Tool Operation. Complex cutter path generation, cutter compensation, repetitive programming, multi-quadrant circular interpolation, three axis interpolation, threading, and other advanced programming techniques are practiced. Geometry creation using CAD/CAM software will be presented and used in this class. The class format is similar to that of NCT 121. Students with experience equivalent to NCT 121 may contact the instructor for permission to waive the prerequisite.

NCT 249 CAD/CAM CNC Programming **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NCT 221 minimum grade "C-", may enroll concurrently

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Students learn to use CAD/CAM software to design parts and generate CNC machine tool programs for part manufacture. Students practice the input of geometry as the basis for tool path generation. Both 2D and 3D wireframe geometry are practiced. Various methods of surface creation are presented and practiced. CNC machine tool programs are created for the manufacture of parts within the software. Drilling pocketing and contour milling are typical 2D machining applications presented. Students are provided time in the CNC machine tool laboratory.

Nursing NUR

NUR 039 State Board Preparation **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 231 and NUR 261 minimum grade "C-", may enroll concurrently; consent required

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course assists Nursing program graduates in preparing for the State Board of Nursing Examination. Emphasis is placed on reviewing learned materials and on taking a national competitive examination. Grading uses the satisfactory/unsatisfactory system.

NUR 100 Introduction to Nursing - Care of Healthy Older Adults **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Registered Nursing program

15 lecture, 22.5 lab, 22.5 clinical, 0 other, 60 total contact hours

This course provides the foundation for the entire nursing program. Topics include philosophy and history of nursing, and nursing core competencies. Professional behaviors and communication are emphasized. Principles of self-care for healthy, non-institutionalized older adults are also addressed, such as: accommodations to normal changes of aging, commonly encountered challenges to health achievement, and disease prevention and health maintenance programs in the community. This course contains material previously taught in NUR 101 and NUR 104.

NUR 102 Fundamentals of Nursing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Registered Nursing program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course introduces the nursing process as the organizing framework for nursing practice and provides the foundation for other nursing courses. Topics related to patients' basic needs are emphasized including teaching/learning, communication, pain, sleep, psychosocial and cultural factors, holistic healing and alternative therapies, and end-of-life issues. This course builds on knowledge gained in prerequisite courses.

NUR 103 Fundamentals of Nursing - Theory/Lab Practice/Clinical **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Registered Nursing program

15 lecture, 45 lab, 45 clinical, 0 other, 105 total contact hours

Using the nursing process as the organizing framework, students will learn the procedures and rationale for basic nursing skills. These skills are developed in the laboratory in preparation for the clinical experience. After completing the theory and lab components of the course, students apply the nursing process and basic nursing skills in an extended care facility. The student must successfully complete the lab theory and lab practice components before progressing into clinical practice. This course contains material previously taught in NUR 103, NUR 103C, and NUR 103L.

NUR 115 Pharmacology **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to APNURS or APNURT program is required; BIO 212 and MTH 167, minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course includes basic principles of pharmacology and major drug classifications using a body systems approach and the nursing process. Pharmacology builds on previous knowledge of Pathophysiology and drug dosage calculation. General mechanisms of drug action, clinical indications for use, common adverse reactions, general nursing implications, and significant drug interactions are discussed. This is a required course in the nursing program, but may also be taken for transfer with consent of the instructor.

NUR 122 Nursing as a Societal and Interpersonal Profession **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Nursing Transfer program; consent required

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

The purpose of this course is to provide students with a foundation in the scientific and social dimensions of nursing as a discipline and a health profession. Students will examine the historical development of nursing and assess the impact of that development on contemporary nursing. Cultural variables and personal values will be examined by the student. Finally, the social context within which nursing is practiced is reviewed, providing the student with an appreciation of the health care system, with particular emphasis on legal and ethical frameworks.

NUR 123 Acute Care Nursing I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 100, NUR 102, and NUR 115, minimum grade "C-" and NUR 103 with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course uses the nursing process to understand the care of adults and their families during health and illness. Principles of nursing care for adults experiencing and adapting to health deviations in the following areas are covered: cardiovascular, respiratory, urinary, endocrine, and hematologic. This course builds on knowledge gained in prerequisite courses and is the first of two medical-surgical nursing courses.

NUR 124 Acute Care Nursing I - Clinical Practice — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 123 minimum grade "C-", may enroll concurrently

0 lecture, 12 lab, 78 clinical, 0 other, 90 total contact hours

This medical-surgical clinical experience builds on knowledge and basic skills from previous courses. The lab component covers advanced nursing skills associated with the acutely ill adult. In the clinical component, students gain increased competence in assessment skills and medication administration. Using the nursing process, students learn to care for one (1) patient with moderately complex medical-surgical needs in the acute care setting. Pre-clinical assessment time is required prior to and outside of the scheduled clinical hours.

NUR 130 Health Promotion and Risk Reduction — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Nursing Transfer program and NUR 122 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Students gain an understanding of concepts of health, healthy lifestyle behavior, health promotion, levels of prevention, diversity, and risk; factors that influence health and healthy lifestyle behaviors; basic dynamics of behavioral change; and substantive content in nutrition, physical activity, and psychological well-being. Theoretical and empirical support for promoting health and reducing risk behavior is examined as a basis for understanding ways that diverse individuals can positively influence their own health and wellness. The role of professional nursing in promoting health behaviors will be examined. Using substantive content, exemplar behaviors of nutrition, physical activity, and coping and adaptive behaviors is examined from the student's perspective to gain an understanding of their contribution to health and wellness. Underlying dynamics such as self-efficacy and resilience, will be examined within the context of the theoretical and empirical literature and standards for the nursing profession. Students will examine potential strategies for influencing health behavior change. Students will participate in a service-learning experience, arranged by faculty that facilitates their understanding of factors that enhance health promotion and risk reduction behaviors.

NUR 131 Nursing of the Childbearing Family — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 100, NUR 102, and NUR 115 minimum grade "C-" and NUR 103 with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course uses the nursing process to understand basic nursing care of the family during the childbearing process, including the antepartum, intrapartum, postpartum, and normal newborn period. Topics of fertility, infertility, and deviations from the normal maternity and newborn experience will be addressed. This course builds on knowledge previously gained in prerequisite courses.

NUR 132 Nursing of the Childbearing Family - Clinical Practice — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 131 minimum grade "C-", may enroll concurrently

0 lecture, 12 lab, 78 clinical, 0 other, 90 total contact hours

Students use the nursing process to provide care for the childbearing family within the lab and hospital setting. Emphasis is placed on health teaching to assist the family in adapting to parenting and recovery from childbirth. Some experience with high-risk mothers and newborns is provided.

NUR 222 Health Assessment Throughout the Lifespan — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: RN, LPN, or RN student

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course provides the beginning knowledge needed to assess the health status of individuals from infancy through old age, including physical, developmental, psychological, cultural and spiritual dimensions. The laboratory experience provides students the opportunity for skill acquisition in history taking, assessment skills, and documentation of findings, focused on the adult client.

NUR 223 Acute Care Nursing II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 123 and NUR 131, minimum grade "C-"; and NUR 124 and NUR 132, with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the second course of the two-part medical-surgical nursing sequence that uses the nursing process to understand the care of adults and their families during health and illness. Principles of nursing care for adults experiencing and adapting to health deviations in the following areas are covered: gastrointestinal, integumentary, nervous, musculoskeletal, reproductive, and immune. This course builds on knowledge gained in prerequisite courses.

NUR 224 Acute Care Nursing II - Clinical Practice — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 223 minimum grade "C-", may enroll concurrently

0 lecture, 12 lab, 78 clinical, 0 other, 90 total contact hours

This medical-surgical clinical experience builds on knowledge and skills from previous courses, with emphasis on progressive development of technical skills, time management, and prioritization of patient care. Using the nursing process, students learn to care for two (2) patients with moderately complex medical-surgical needs in the lab and acute care settings. Pre-clinical assessment time is required prior to and outside of the scheduled clinical hours.

NUR 231 Nursing of Children — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 223 and NUR 255, minimum grade "C-"; and NUR 224 and NUR 256, with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course uses the nursing process to focus on the care of children and their families during health and illness. Concepts learned in the previous semesters are applied to develop nursing interventions to care for this population. Principles of nursing care for children of all age groups experiencing health deviations and their adaptation to the stressors of hospitalization are addressed. Promoting health and fostering normal growth and development are emphasized.

NUR 232 Nursing of Children - Clinical Practice **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 231 minimum grade "C-", may enroll concurrently

0 lecture, 6 lab, 84 clinical, 0 other, 90 total contact hours

This course uses the nursing process to focus on care of hospitalized children and support of their families in the acute care setting. Students focus on incorporating growth and development assessment, as well as response to illness, into the development of nursing interventions appropriate for the specific child and family. Opportunities for interaction with the well child are provided. Pre-clinical assessment time is required prior to and outside of scheduled clinical hours.

NUR 255 Mental Health Nursing **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 123 and NUR 131, minimum grade "C-"; NUR 124 and NUR 132, with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course uses the nursing process to understand basic mental health nursing care for selected individuals in the hospital and community. The central focus is to help the student become more sensitive to human behavior and to act in a therapeutic manner. Understanding disturbed patterns of coping, prevention of mental illness, and maintenance and restoration of mental health are discussed. This course builds upon knowledge gained in prerequisite courses.

NUR 256 Mental Health Nursing - Clinical Practice **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 255 and PSY 100, minimum grade "C-", may enroll concurrently

0 lecture, 4 lab, 86 clinical, 0 other, 90 total contact hours

This course uses the nursing process to apply mental health nursing concepts for individuals and families in hospital and community settings. Students gain experience with current methods of prevention, maintenance, and treatment when caring for at least two (2) moderately complex individuals with disturbed patterns of coping. Pre-clinical assessment time is required prior to and/or outside of the scheduled clinical hours.

NUR 261 Advanced Medical-Surgical Nursing/ Transition to RN Nursing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 223 and NUR 255, minimum grade "C-"; NUR 224 and NUR 256 with grade "P"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course uses the nursing process to understand the care of patients with complex, multi-system needs and builds upon the principles of medical-surgical nursing. Concepts of leadership and management are addressed in preparing students for transition from classroom to the workforce. This course builds on knowledge gained in prerequisite courses. This course contains material previously taught in NUR 261 and NUR 263.

NUR 262 Advanced Medical-Surgical Nursing/ Transition to RN Nursing - Clinical Practice **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 261 minimum grade "C-", may enroll concurrently

0 lecture, 23 lab, 112 clinical, 0 other, 135 total contact hours

This capstone medical-surgical clinical experience is intended to socialize students into the role of a professional nurse, which includes the roles of delegator and team leader. Using the nursing process, students manage care for three (3) patients with moderately complex medical-surgical needs in the lab and acute care settings. Experience is provided for each student to function collaboratively with members of the health care team. The title of this course was previously Transition to the Registered Nurse Role – Clinical Practice.

Pharmacy Technology PHT

PHT 100 Introduction to Pharmacy and Health Care Systems **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Pharmacy Technology program

Corequisites: PHT 103 and PHT 140 and PHT 150

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

In this course, students are introduced to our healthcare system and various pharmacy practice settings. The technician's role of assisting the pharmacist, maintaining the pharmacy, and controlling inventory is emphasized. Students learn drug information skills, computerized pharmacy business practices, and the application of the HIPPA. Discussion includes legal and ethical responsibilities and the importance of pharmaceutical organizations for the advancement of the pharmacy technician profession.

PHT 101 Pharmacology for Pharmacy Technicians **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHT 100, PHT 103, PHT 140, and PHT 150, minimum GPA 2.0

Corequisites: PHT 198

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Students learn the purposes, actions, side effects, precautions and significant interactions of major drug classes with special attention on dosage forms and commonly used drug names. The student learns to describe the use of these agents in the management of disease states and their effects on body systems.

PHT 103 Pharmaceutical Calculations **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Pharmacy Technology program

Corequisites: PHT 100 and PHT 140 and PHT 150

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Applications of pharmaceutical dosage calculation are presented in this course. Accuracy of calculations is stressed to assure that the patient receives the correct dose. This course prepares students for second semester laboratory and clinical course work.

PHT 140 Pharmacy Prescription Processing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: PHT 100 and PHT 103 and PHT 150

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is an introduction to the operation of a pharmacy dispensing system. Students participate in practical exercises pertaining to prescription processing on a computer, relative to the pharmacy environment.

PHT 150 Pharmacy Operations and Compounding **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: PHT 100 and PHT 103 and PHT 140

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students will gain knowledge and hands-on experience in sterile and nonsterile compound product preparation, institutional pharmacy policies and procedures, drug information resources, telephone communication skills, fitting durable medical equipment, assessment of patient blood pressures and basic principles of robotic technology. Emphasis is on aseptic technique and parenteral product preparation where students develop skills in manipulation of parenteral drug products.

PHT 174 PHT Co-op Education I 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHT 100, PHT 101, PHT 103, PHT 140, PHT 150, and PHT 198; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course students gain skills from a new experience in an approved, compensated position related to their chosen field of study. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences courses.

PHT 198 Pharmacy Experience 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHT 100, PHT 103, PHT 140, and PHT 150, minimum GPA 2.0

Corequisites: PHT 101

0 lecture, 0 lab, 360 clinical, 0 other, 360 total contact hours

Skills and knowledge acquired in the first semester of the Pharmacy Technology program are applied in pharmacy practice settings. All experience is under the supervision of a registered pharmacist. Students will obtain experience with ambulatory care and acute care pharmacy skills that can be applied to a wide variety of pharmacy practice. The student will spend 3 days per week, 8 hours per day in each experience site assignment. This course is graded on a pass/no pass grading system.

PHT 274 PHT Co-op Education II 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHT 100, PHT 101, PHT 103, PHT 140, PHT 150, PHT 174, and PHT 198

Level II Prerequisites: consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, the student gains skills from a new experience in an approved, compensated position related to the chosen field of study. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two possible co-op experiences.

Philosophy PHL

PHL 101 Introduction to Philosophy 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The course will examine the discipline of philosophy from a topical perspective. Major figures and concepts in this discipline will be studied in the context of central problems or issues in the history of philosophy. Issues or topics to be studied may include: the meaning of life, freewill and determinism, the mind-body problem, moral realism v. moral relativism, moral theory or the nature of moral judgment, metaphysics or the study of reality, epistemology or the study of knowledge, the question of the existence of God or ultimate reality as the rationality of religious belief.

PHL 123 Critical Thinking 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to provide and foster an environment within which students can learn the basic principles of reasoning at the introductory level, and how to use these principles in informal discourse and argumentation. Although students will be introduced to some basic deductive (formal) argument forms, the focus of the course will be on inductive (informal) argumentation, since inductive reasoning is the form of argumentation that is most prevalent in our contemporary discourses, including philosophical, political, legal, ethical, and religious discourse. Consequently, the student, by learning the principles of inductive argumentation, can learn how to think and argue in critically appropriate and successful ways about important topics and themes.

PHL 200 Existentialism 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Does life have meaning? Can values exist if God does not? This course considers the works of central existentialist figures such as Kierkegaard, Nietzsche, Sartre and Camus as well as related literary works. It addresses such themes as authentic existence, freedom, nihilism, meaning, subjectivity and values. The course is both an introduction to this body of work and an attempt to raise individual awareness of the human condition within which our existence takes place.

PHL 205 Ethics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is offered as an introductory ethics course, where students are introduced to at least four of the main classical ethical theories within the Western tradition, as well as two of the most prevalent theories of justice. Although additional theories and approaches may be covered, such as Feminist Ethics, Moral Egoism, or Eastern Ethical Theories, the study of the following classical theories will provide the course's main foci: Ethical Relativism, Virtue Ethics, Deontological (duty) Ethics, Utilitarian Ethics, the Utilitarian Conception of Social Justice, and Justice as Fairness.

PHL 240 Social-Political Philosophy 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introductory social-political philosophy course, within which students shall be introduced to various classical and contemporary social-political philosophies and the conceptions of human nature that underlie them. The following movements will be discussed: Political Naturalism, Social Contract Theory, Utilitarianism, Marxism, Contemporary Political Liberalism, and Feminist Political Theory.

PHL 244 Ethical and Legal Issues in Health Care 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to issues arising from the application of philosophical ethics or moral theory to the health care context. Different models of ethical decision-making will be used to examine current issues in health care. The course also provides an overview of legal theory and responsibility as it applies to the health care context with an emphasis placed on professional negligence. Topics to be discussed may include: patient's rights, informed consent, confidentiality, medical research or experimentation, genetics, treatment of impaired newborns, end of life care, HIV/AIDS, and moral/legal responsibilities toward colleagues.

PHL 245 Philosophy of Religion 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is offered as an introductory philosophy of religion course, where students are introduced: (1) to various forms of Theism, Atheism, and Agnosticism, emphasis will be given to their theoretical-philosophical justifications, and (2) to some of the basic concepts, belief systems, and practices of various religions, including those of Christianity, Judaism, Islam, Hinduism, Buddhism (and perhaps others), where the focus will involve an examination of the theoretical-philosophical defenses or justifications of the traditions.

PHL 250 Logic **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course offers an introduction to the discipline of philosophical logic. Emphasis will be placed on the distinction between deductive/formal reasoning and inductive/informal reasoning. With regard to the former, the course will examine different methods for the evaluation of deductive/formal arguments or reasoning. With regards to the latter, the course will again explore methods of evaluation, highlighting common mistakes in informal or everyday reasoning.

Photography PHO

PHO 090 General Photography **2 credits**

Level I Prerequisites: Academic Reading Level 4 or REA 070 or REA 071 may enroll concurrently; Academic Writing Level 6 or ENG 090 or ENG 091 may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course for students wishing to understand basic photography and its processes. Primary emphasis is on understanding and using the camera and related equipment, picture taking, composition, lighting, film, etc. Students should own or have the use of some type of camera. No darkroom work is included in this course.

PHO 101 Photography on Location **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is course studies methods and visual approaches of documenting and interpreting various locations with the camera. Emphasis is placed on making photographs on location and reviewing the results both on location and in critique. Students will learn to prepare equipment for location photography, review results on site and make photographs under special conditions. Locations and meeting times will vary by semester. Students are responsible for their personal transportation to locations; student carpools are encouraged.

PHO 103 History of Photography **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a study the chronology of photographic processes, the progression of social uses of the medium, and the history of photography as a technology and an art form.

PHO 105 Digital Photography Abroad **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course offers students an opportunity to explore digital capture abroad. Through a series of on-location shoots, lectures, critiques, and digital imaging demonstrations, students will create portfolios of photographs revealing their impressions of the chosen location and culture. Digital workflow issues will be addressed throughout the course. An online portfolio will be used as an integral part of the course to exhibit current work. Basic photographic and computer skills are required. Digital cameras will be available for use during the course or students may use their own.

PHO 111 Photography I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This is a first-term course in basic photography. Areas of study include: camera operation, lighting and composition, laboratory equipment and procedures, image processing, printing and final presentation techniques. Students must have their own manually adjustable camera and anticipate additional costs for materials for the course. Some sections are film based and are for students with 35mm film cameras. Other sections are digitally based and are for students with digital cameras. See the time schedule to choose the appropriate section.

PHO 116 Studio Portraits **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: PHO 117

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is an introductory, hands-on course in commercial and illustrative portrait techniques to create expressive portraits of people. Students learn to effectively utilize artificial light sources and examine the advantages of various camera formats, including high-end digital image capture. Students also experience a deeper exploration of color E-6 process films, C-41 process films, black and white films, filters, gels, diffusion, and light modulation tools. Business and legal issues regarding reproduction rights are also discussed.

PHO 117 Introduction to the Studio **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-"

Level II Prerequisites: PHO 127 minimum grade "C-"

30 lecture, 0 lab, 0 clinical, 60 other, 90 total contact hours

This course is a comprehensive overview of photo-studio lighting with an emphasis on technical systems, which is inclusive of medium-format cameras, tungsten lights, and electronic strobes. Photo assignments incrementally investigate the tools of lighting along with color-photo media such as Polaroid films, E-6 films, and digital cameras. Emphasis is placed on studio-based compositional skills.

PHO 122 Darkroom Techniques **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course teaches advanced methods for controlling tone and contrast using film, fiber-based paper and darkroom processes. Darkroom Techniques teaches students the craft of creating high-quality darkroom prints which maximize the expressive qualities of the original camera images and the resulting film negatives. Prior film and/or darkroom experience is not required.

PHO 127 Digital Photo Imaging I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is a comprehensive overview of current digital photographic technologies. Students utilize image input devices, such as scanners and digital cameras, and imaging software applications to optimize output for print and electronic publication. Assignments investigate color theory, a variety of technical controls in Photoshop, and color management.

PHO 129 Black and White Digital Imaging — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 127 minimum grade "C-"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course explores a variety of methods and strategies for making monochrome and toned black and white images using digital processes. Students learn to prepare images for printing, digitize film for monochrome processing, use digital cameras to create black and white photographs, convert color images to monochrome, and utilize a variety of modern printing technologies.

PHO 174 PHO Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

Level II Prerequisites: PHO 111

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

Students are placed in an approved industrial work experience to gain skills and knowledge offered by the employer. Together with the instructor and the employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experiences. This is the first of two possible co-op experiences.

PHO 204 Color Photo Design — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 and PHO 127, minimum grade "C-"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is a continuation of color image workflow to produce images with strong color, composition, and impact. Students increase their proficiency with film and/or digital SLR camera systems and implement techniques of how to see, approach, and capture the dynamics of subject matter and color at different times of day. Emphasis is placed on output, creating images in-camera, and digitally processing them with a minimal amount of post-production manipulation, compositing, or collage. This course was previously PHO 124.

PHO 210 Alternative Processes — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: PHO 122

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course is an investigation of alternative processes and new technologies currently in use by commercial and artistic photographers. Students employ a variety of traditional and non-traditional darkroom techniques including digital image manipulation, to create new and exciting photographs. Emphasis is placed on the exploration of new techniques to develop a broad sense of options in visual problem solving. Students are required to purchase photographic supplies.

PHO 211 Large Format Photography — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course introduces students to monorail and flatbed large format cameras. Students learn to load and process sheet film, Polaroid film and learn to print large format negatives. Students also learn the use of perspective and depth of field controls and other topics unique to large format photography. Assignments will be completed both in black and white and color.

PHO 212 Large Format Photography II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 211 minimum grade "C-"

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course continues the exploration of the technical and visual components of large format photography, with a strong emphasis on developing a personal project. Demonstrations include the use of roll film adapters, formats other than 4x5, focus and perspective enhancement with view camera movements, contact printing, the integration of digital technology with large format photography. Students are expected to develop an individual large format project in this course.

PHO 216 Environmental Portraiture — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
Level II Prerequisites: PHO 117
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is an introductory course in commercial and illustrative portrait techniques to create expressive portraits of people on location. Students learn to effectively utilize natural and artificial light sources and examine the advantages of various camera formats. Students also experience a deeper exploration of color E-6 films, process films, C-41 process films, black and white films, alternative process films, filters, and light modulation tools.

PHO 219 Photographic Design — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
Level II Prerequisites: PHO 111
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is an intensive review of photographic composition and design techniques with emphasis on design in the photographic image through lecture, demonstration, critique, and darkroom practices. Included is a survey of contemporary photographers and new directions in modern photographic images and design.

PHO 220 Advanced Studio Techniques — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: PHO 117 and PHO 127

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course is a deeper exploration of medium and large format cameras utilized in a commercial studio with film and digital image capture technologies. An emphasis is placed on logistical coordination of the components needed to produce an image. Assignments range from studio still life to on-location fashion work, yet individual choice of subject is also encouraged.

PHO 227 Photojournalism — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: PHO 111

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

In this course students receive a variety of photographic assignments involving newsworthy events, contemporary social issues, and human interest stories. Students work with black and white negative and color transparency films. An introduction to digital imaging technologies as they relate to photojournalism is included in the course. Students must own a manual electronic flash.

PHO 228 Digital Photo Imaging II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Level II Prerequisites: PHO 127

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course provides an advanced level of investigation into digital photographic tools and techniques. Students will expand their understanding of digital input devices, photo imaging software, and output devices. Students will be encouraged to work toward developing their own creative style. Students with experience equivalent to PHO 127 may contact the instructor for permission to waive the prerequisite.

PHO 230 Portfolio Projects **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 117 and PHO 228, minimum grade "C-"

Level II Prerequisites: PHO 122 or PHO 129, minimum grade "C-"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course offers students the opportunity to work on an extended photographic project of the individual's choosing. Emphasis is placed on developing a personal style. Students improve their visual problem solving skills through researching the technical and aesthetic concerns for their projects and through individual and group critiques. Recommended as a corequisite with Portfolio Seminar.

PHO 231 Portfolio Seminar **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 117 and 6 additional PHO courses 100 level or above; minimum grade "C-" all PHO courses

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is a capstone experience for students completing the photography program. Students will produce a professional portfolio, self-promotional materials and publish their portfolios on the Web. Professional critiques will be conducted on individual portfolios. Students will make contacts with potential employers, clients, or transfer schools. PHO 230 may be taken concurrently by students seeking additional emphasis on the production of their final portfolios.

PHO 274 PHO Co-op Education II **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

Physical Education Activity PEA

PEA 102 Cardiovascular Training **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

The purpose of this course is to develop a basic understanding of the equipment and physical requirements necessary for improved cardiovascular endurance and body fat reduction (caloric expenditure). Students are provided with an exercise recommendation based upon American College of Sports Medicine (ACSM) guidelines. Equipment includes treadmills, stairmasters, Nordic tracks, rowing ergometers, airdynes, bicycle ergometers, and elliptical machines.

PEA 103 Beginning Golf **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is designed for the beginning player who wants to learn the basics of golf. Priority is given to the general golf swing, chipping, putting, and course management. Students are given information on what type of equipment to use and how to use it, including proper warm up and stretches. Students in this course will pay greens fees and provide their own clubs.

PEA 104 Intermediate Golf **1 credit**

Level I Prerequisites: No Basic Skills; PEA 103

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is designed for the intermediate player who wants to learn more about golf. Priority is given to golf etiquette, course management skills, golfing strategies, and golfing for conditions. Students will practice a variety of trouble shots and more advanced shots. Students in this course will pay greens fees and provide their own clubs. It is recommended that students have a golf score of 110 or less for 18 holes or have had PEA 103 before registering for this course.

PEA 105 Weight Training - Cybex/Free Weights **2 credits**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

The purpose of this course is to develop basic weight training skills. Using Cybex and free weight equipment, students develop an understanding of the basic weight training exercises associated with each major muscle group. Emphasis is placed on understanding the proper form and technique necessary to train safely and effectively. (Free weight training is optional.)

PEA 109 Beginning Tennis **1 credit**

Level I Prerequisites: No Basic Skills

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

The purpose of this course is to introduce students to the game of tennis. The fundamentals of the game are taught in a progressive learning experience. Students are instructed in the areas of skill development and scoring. A tennis racquet and tennis shoes are required.

PEA 115 Health and Fitness Experience **.5 credit**

Level I Prerequisites: No Basic Skills; Minimum of 18 years of age; Student must be enrolled in at least 3 other credit hours. May use winter semester hours to meet spring/summer requirements.

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Providing access to the Health & Fitness Center at Washtenaw Community College, this course encapsulates the benefits of regular and varied physical fitness activities. Students must be 18 years of age and enrolled in a minimum of 3 credits in the term of enrollment. Students who wish to register for spring/summer may apply 3 credits of enrollment in either spring/summer or the previous winter term (same calendar year) to meet this restriction. This course can be repeated for credit five (5) times for a total of 3 credits.

Physical Therapist Assistant PTA

PTA 100 Fundamentals of Physical Therapy **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Physical Therapist Assistant program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course serves as an introduction to the Physical Therapist Assistant Program and includes the historical overview of the physical therapy career, the role of the physical therapist assistant as a member of the health care team, and the scope of practice of the physical therapist assistant with emphasis on the State of Michigan's standards. It includes ethical behavior, interpersonal communication, patient motivation, and basic documentation. Students are expected to relate health care observations and experiences to course materials and discussions.

PTA 150 Therapeutic Procedures I — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Physical Therapist Assistant program

15 lecture, 60 lab, 0 clinical, 0 other, 75 total contact hours

This course introduces the physical therapist assistant student to the fundamental procedures of patient care and management. It prepares the student to safely and appropriately administer these procedures. Emphasis is on the development of decision making and problem solving skills while performing patient care activities. Content includes but is not limited to bed mobility, transfers, body mechanics, wheelchairs and wheelchair management and aseptic techniques.

PTA 160 Therapeutic Procedures II — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 150 minimum grade "C"

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course provides the physical therapist assistant student with patient care and patient management skills for safe and appropriate use with patients. Lecture, demonstrations, lab practice, and patient simulations will be used to develop decision making and problem solving skills with an emphasis on safety. Topics include wound management and muscle performance, but are not limited to, gait training with assistive devices, accessibility, pulmonary hygiene, and orthotics and prosthetics.

PTA 180 Clinical Kinesiology — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Physical Therapist Assistant program

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course studies human movement and includes the principles of basic physics and biomechanics. It examines the relationship of structures (skeletal, joint, neural, muscle) to function and examines normal and abnormal movement. Emphasis is on functional application to provide a foundation and rationale for therapeutic interventions necessary for the physical therapist assistant student. Laboratory experiences correlate to the lectures which include the study of the head and trunk, extremities, posture and gait. This course contains material previously taught in PTA 180 and PTA 190.

PTA 195 Introduction to Disease — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 180 minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course introduces the study of disease and disease processes in humans. Emphasis is on the impact on body systems, development, and rehabilitation. Lecture and student presentations will describe diagnosis and pathology, treatment, medication, prognosis, and implications for physical therapy treatment by the PTA under the direction and supervision of a licensed physical therapist.

PTA 198 Soft Tissue Management — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 195

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course applies and builds on the knowledge of human anatomy and clinical kinesiology and instructs the PTA student in soft tissue techniques including basic soft tissue massage, measurement of joint range, stretching, and manipulation.

PTA 200 Therapeutic Modalities — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 180 minimum grade "C"

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course introduces the physical therapist assistant student to the principles and skills necessary for the safe and appropriate administration of physical therapy modalities under the guidance and direction of a licensed physical therapist. Correlating lecture and laboratory experience topics will include therapeutic heat and cold, and select physical agents and modalities.

PTA 220 Therapeutic Exercise I — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 180

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course introduces the PTA student to the theory, principles, and procedures of therapeutic exercise providing the basis for safe and appropriate selection, administration, monitoring, and adjustment of exercise programs (including balance, strengthening, and posture). Students develop a rationale for the selection and use of basic exercise equipment and practice the development, selection, and progression of goal-directed therapeutic exercise programs as well as monitoring and documenting patient performance and response. Laboratory activities correlate with lecture topics and include practice, patient simulations, and demonstrations.

PTA 225 Therapeutic Exercise II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 220

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This class continues PTA 220 (Therapeutic Exercise I), and continues the study and application of theory, principles, and procedures of developing, utilizing, modifying, and instructing safe, appropriate, goal-directed exercise as a treatment modality. General exercise as well as exercise for specific populations and diagnoses is included. Students practice the selection and development, instruction, progression, and justification of exercise programs as well as monitoring and documentation patient and/or simulated patient interaction. Laboratory activities correlate with lectures and include practice, patient simulations, and demonstrations.

PTA 230 Clinical Education I — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 220 minimum grade "C"

0 lecture, 0 lab, 48 clinical, 0 other, 48 total contact hours

This course provides the qualified physical therapist assistant student with the opportunity to observe and participate in structured and supervised experiences in health care settings. Students will be placed by their program clinical education coordinator in off-site locations and given limited opportunity to safely and appropriately apply therapeutic interventions. This initial clinical experience will also provide the background and foundation for future coursework. This course is graded on a pass/no pass grading system.

PTA 240 Clinical Education II — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 230 with grade "P"

0 lecture, 0 lab, 128 clinical, 0 other, 128 total contact hours

This second clinical experience provides the qualified physical therapist assistant student with supervised clinical learning experiences and the opportunity to further develop and practice necessary clinical decision making, treatment, and documentation skills. Students will be assigned to varied off-site health care settings for 3 weeks, 40 hours/week, under the supervision of a licensed PT or PTA from an accredited two-year program. This course is graded on a pass/no pass grading system.

PTA 250 Clinical Education III **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 240 with grade "P"

0 lecture, 0 lab, 480 clinical, 0 other, 480 total contact hours

This third clinical experience consists of full-time clinical placements in off-site health care settings. Qualified physical therapist assistant students will perform activities of supervised patient care, documentation, and family instruction, acting as a member of the health care team with the purpose of achieving entry-level competency. This course is graded on a pass/no pass grading system.

PTA 280 Clinical Concepts **1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PTA 240

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course reviews and builds upon classroom and clinical education experiences to discuss ethical considerations in patient care, relationships and communication between Physical Therapists and Physical Therapist Assistants, preparation for employment, professional growth after graduation, and critical appraisal of published research.

Physics PHY

PHY 059 Fundamentals of Physics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course for students with no previous physics background. The emphasis is on acquiring the basic conceptual understanding necessary to succeed in later courses. The course is recommended for those students wishing to improve their physics background before taking 100 level physics courses, or students desiring an exposure to physics. Physics topics focus on mechanics and include motion, force, momentum, energy, rotation, and gravity.

PHY 100 Physics for Elementary Teachers **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours

In this course students study the basic laws governing the physical universe. This course helps prospective educators learn to explain everyday physical phenomena in elementary terms. Prospective educators will also learn to select materials and provide instruction for hands-on activities that help students construct a picture of our physical universe.

PHY 105 Conceptual Physics **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Designed for both transfer and vocational students with no physics experience, but desiring a working knowledge of physics, PHY 105 surveys the major topics of motion, heat, waves, electricity, magnetism, light, and atomic energy using a conceptual approach with a minimum of mathematics.

PHY 110 Applied Physics **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

Technical-Vocational students with no previous experience with physics should take this course to fulfill their program requirements. Topics covered are: properties of matter, motion, force, energy, machines, fluids, and heat. Laboratory exercises give students an opportunity to test theoretical principles.

PHY 111 General Physics I **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; COMPASS College Algebra = 46, MTH 178 or higher MTH course (excludes MTH 181, 182, and 210), minimum grade "C", may enroll concurrently

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This is the first of a two-course sequence in algebra-trigonometry based Newtonian physics for pre-professional and liberal art students. Physics 111 introduces and develops the concepts of kinematics, forces, work-energy, impulse-momentum (translational and angular), fluids, vibration and waves, and heat. Laboratory exercises are included to assist students in understanding the above topics.

PHY 122 General Physics II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHY 111 minimum grade "C"

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is the second part of a two-course sequence in algebra-trigonometry based physics for preprofessional and liberal arts students. The course covers the concepts of electricity, magnetism, light, and modern physics extending the students' knowledge of physics learned in PHY 111. Laboratory exercises are included to assist students in understanding the topics listed above.

PHY 211 Analytical Physics I **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; high school physics or PHY 105 or PHY 111 and MTH 191; minimum grade "C" all MTH, PHY, and high school requirements

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

The first of a two-course sequence in calculus-based physics for students intending to major in science or engineering, PHY 211 develops the concepts of mechanics, heat, and wave motion. Laboratory exercises are included to assist students' understanding of these topics.

PHY 222 Analytical Physics II **5 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; PHY 211 minimum grade "C"

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This second part of a two-course sequence in calculus-based physics covers the concepts of electricity, magnetism, light, and modern physics.

Political Science PLS

PLS 112 Introduction to American Government **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class studies the forms and functions of American government with emphasis on national government. The decision-making process in Congress, the Presidency and the federal court system are studied. The course also examines the relationship of political parties and public opinion to the electoral process.

PLS 150 State and Local Government and Politics **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In the current political environment, many functions formerly performed by the national government are being shifted to the state and local governments examined in this course. Special emphasis on the governments of Michigan and Washtenaw County provide for an investigation of the challenges of making decisions and governing a society in response to the immediate needs of its citizens in a global society.

PLS 211 Introduction to Comparative Government 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class surveys the political systems of Great Britain, France, Italy, Germany, the former Soviet Union, and China. It is recommended that students take one course from the ANT, GEO, HST, or PLS disciplines or contact the instructor for permission before registering for this course.

PLS 220 Politics and the Media 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PLS 112 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to the role of the mass media in the political process. It critically examines the role of the mass media in shaping American political life, focusing on the historical development of the mass media in American society, the economic and political forces that shape news coverage of political leaders and institutions, the influence of the mass media on the American public, and normative assessments of how well the media promotes public deliberation in a democracy.

PLS 250 Campaigns and Elections 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is an introduction to campaigns and elections in the United States. The purpose is to provide students with an intellectual understanding and practical working knowledge of the electoral process. The course will examine key actors in the electoral system: candidates, parties, interest groups, voters, and the mass media. Although the focus will be on national elections, both congressional and presidential, state and local elections will also be examined. This course will provide students with the knowledge that will equip them to become more informed and effective citizens in the electoral process.

Psychology PSY

PSY 100 Introductory Psychology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class provides an introduction to the scientific study and interpretation of human behavior surveying such topics as psychological development, learning, thinking, motivation, emotion, perception, intelligence, aptitudes and personality. Basic principles and their practical application are discussed.

PSY 107 African American Psychology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is organized around the premise that there is a distinctive Afro-American psychological frame of reference that is evident in the behavior and lifestyles of African Americans. This course aims to build a conceptual model to help analyze and explain the psychological behavior of African Americans.

PSY 150 Psychology of Work 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides knowledge, tools, and experiences to facilitate students entering an organization and comprehending their role in it. Students will learn about the interdependency of the organization and the individual. The foundation of this course is based in Organizational Development, I/O Psychology, General Psychology, Social Psychology, and Personality Theory.

PSY 200 Child Psychology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course stresses the child as an individual, his or her original nature and temperament and position as part of the group. Introduction of social raw materials is considered. In addition, such topics as the conditioning and reconditioning of behavior patterns and the individuality and similarity of responses are developed.

PSY 206 Life Span Developmental Psychology 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides an overview of the biological, cognitive, social, and affective domains of human growth and development from the prenatal period until death. The course emphasizes the relationship of growth and development to behavior through the life span. Major theories of human development, as well as research methods, are reviewed and contrasted. The course is especially constructed and taught to be of value to those entering the fields of social work, elementary or secondary education, or nursing and various allied health fields.

PSY 207 Adolescent Psychology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PSY 100 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers the full spectrum of introductory topics in adolescent psychology. The area of greatest emphasis is on the psychological development of the adolescent. Major topics covered also include peer and adult interactions, self-image, teenage suicide, drugs, and depression. Resolution of the child/adult conflict, which is the essence of this developmental stage, is also discussed.

PSY 209 Psychology of Adjustment 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a study of the processes involved in the adjustment of the individual to the problems of everyday living. Emphasis is given to the study of the development of techniques or adjustment to meet conflict situations in the social environment. It includes consideration of adjustment mechanisms of major societal institutions.

PSY 210 Behavior Modification 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100 or PSY 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers basic behavioral principles and their applications to individuals with mental illness, developmental disabilities, closed head injuries, problems with aging, and problems of daily living. Students will learn to conduct psychosocial rehabilitation and psycho-educational groups.

PSY 220 Human Development and Learning 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PSY 100

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers developmental topics including cognitive and psychosocial development from birth through adolescence. Major emphasis is placed on the role of parents and teachers in fostering learning and development. The topics of readiness to learn, learning theory, and planning for and assessing learning outcomes are addressed. For students planning to transfer to EMU, it is recommended that FETE 201 is taken at Eastern Michigan University concurrently with PSY 220.

PSY 232 Psychology of Women 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PSY 100

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The goals of this course include: Analyzing psychological theories and research concerning women and gender; examine multiple potential causes of gender differences e.g. biology, socialization; identify sexist bias in the research process and American culture. Students will develop critical thinking skills that will allow them to assess, describe and recognize gender bias in society and how it affects women from a political, social, economic and medical perspective.

PSY 240 Drugs, Society, and Human Behavior 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The purpose of this course is to provide an overview of the use and abuse of legal and illicit drugs from a psychological perspective. The course covers the prevalence of use and abuse of psychoactive drugs, both historically and currently; the physiological mechanisms of action of different categories of psychoactive drugs; the individual and societal determinants and consequences of drug use; and the relevance of these issues to prevention and treatment programs. It is recommended that PSY 100 and/or BIO 102 be taken before or concurrently with this course. This course contains material previously taught in PSY 130.

PSY 251 Education of Exceptional Children 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101, PSY 100, PSY 200, PSY 206, or HSC 147, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course presents an overview of the major categories of exceptionality. Methods for identifying and working with children in child care, recreational and educational settings are explored. Working with an interdisciplinary team and partnering with parents is a major focus. A working knowledge of resources, a comfort level for working with exceptional children and their families, and exploring the roles of professionals who work with exceptional populations are stressed.

PSY 257 Abnormal Psychology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; PSY 100 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a course dealing with the abnormalities of certain types of personalities, their origin, symptoms, developments and treatment, short of psychiatric competence. Main topics include: simple maladjustment; disturbances of emotional nature, or perception, memory, judgment, thought, disorders of mobility, speech, etc.; early symptoms of schizophrenia.

PSY 260 Introduction to Human Sexuality 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a survey of the psychological research concerned with human sexuality. Areas presented include: research, anatomy, dysfunctions and their treatment, family planning methods, sexual communication, sexually transmitted diseases and sexual variation.

PSY 273 Psychology of Parenthood 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers three major areas: the psychological, sociological and biological development of children from birth through young adulthood; the psychological, biological and sociological impact of parenthood on the parent's self-perception, role in society and identity; and theories of parent-child interaction and communication.

Radiography RAD

RAD 100 Introduction to Diagnostic Imaging 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a prerequisite for admission to the radiography program. The purpose of this course is to provide an overview of the specialized diagnostic medical imaging modalities used today. Students will learn how each imaging modality evolved and its use in diagnosing and treating patients.

RAD 101 Methods in Patient Care 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is designed to teach the student how to therapeutically communicate with patients. Students will also learn to assess a patient's condition and how to provide quality patient care. This course will include laboratory sessions which will teach the patient care skills that are within the scope of practice for a radiologist technologist, i.e. vital signs, blood pressure, venipuncture, airway management; patient transfer and immobilization techniques; infection control practices; aseptic and non-aseptic techniques.

RAD 110 Clinical Education 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 101 minimum grade "C-"

0 lecture, 0 lab, 240 clinical, 0 other, 240 total contact hours

This course provides structured clinical experience in the application of knowledge and skill in positioning the upper extremity, chest and abdomen; and demonstration of knowledge concerning professional ethics, courtesy and empathy in handling patients, film processing/imaging plate (IP) handling and image archiving, and radiographic equipment.

RAD 111 Fundamentals of Radiography 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 100 minimum grade "C"

15 lecture, 15 lab, 0 clinical, 0 other, 30 total contact hours

This course is designed to prepare students to operate radiographic equipment in the clinical setting. Students will acquire the knowledge and skills needed to operate basic x-ray equipment and accessory devices that are used to produce quality diagnostic radiographic images. This course will include laboratory sessions which will integrate the theories of image production with the practical application of equipment operation.

RAD 112 Radiographic Positioning I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 101 and RAD 110, minimum grade "C-"; RAD 110 may enroll concurrently

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course introduces general principles relating to radiographic terminology, positioning, preliminary steps in radiography, operation of the control panel, and processing radiographs. Students will learn the routine procedures for producing and critiquing radiographs of the chest, abdomen, and upper extremity.

RAD 120 Clinical Education — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program, RAD 110 and RAD 123, minimum grade "C-"; both courses may enroll concurrently

0 lecture, 0 lab, 240 clinical, 0 other, 240 total contact hours

This course provides a structured clinical experience in the application of knowledge and skill in positioning the upper and lower extremities, chest, abdomen, spinal column, bony thorax, and selected contrast studies. The student will demonstrate knowledge in professional ethics, courtesy and empathy in handling patients, film processing and radiographic equipment.

RAD 123 Radiographic Positioning II — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 112 and RAD 120, minimum grade "C-"; RAD 120 may enroll concurrently

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the routine radiographic projections for the lower extremity, vertebral column, and bony thorax. Students will learn routine patient positioning methods and how to critique radiographs.

RAD 124 Principles of Radiographic Exposure — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 101 minimum grade "C-"

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

This course includes a comprehensive study of radiographic exposure techniques, radiographic quality, the use of radiographic accessory devices, and how to select and apply this equipment in the clinical setting. This course contains material previously taught in RAD 127.

RAD 125 Radiographic Procedures and Related Anatomy — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 110 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers radiographic procedures in which a contrast medium is used for demonstrating structures which are not well visualized on routine radiographs.

RAD 150 Clinical Education — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program and RAD 120 minimum grade "C-"

0 lecture, 0 lab, 440 clinical, 0 other, 440 total contact hours

This course provides a structured clinical experience in the application of knowledge and skill in positioning all upper and lower extremities, chest, abdominal procedures, spinal column, bony thorax, and selected contrast studies. Clinical rotations will be established to provide a broader experience in positioning the geriatric, pediatric, and trauma patient. Students will demonstrate knowledge in professional ethics, patient care, film processing, and radiographic equipment.

RAD 190 Physical Foundations of Radiography — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 110 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers the theoretical and practical application of radiation physics with an emphasis on electromagnetic radiation, electricity, magnetism, x-ray circuitry, radiation production, and radiation's interaction with matter.

RAD 215 Radiography of the Skull — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 150 and RAD 217, minimum grade "C-"; RAD 217 may enroll concurrently

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to teach the student how to obtain quality radiographic images of the skull. Students will also be able to critically analyze the radiographic images of the skull and identify the pertinent anatomy. Laboratory sessions are included to provide the student with experience in skull positioning.

RAD 217 Clinical Education — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program, RAD 150, and RAD 215, minimum grade "C-"; RAD 215 may enroll concurrently

0 lecture, 0 lab, 336 clinical, 0 other, 336 total contact hours

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper and lower extremities, chest, abdomen, spinal column, contrast studies, and skull. Students demonstrate their knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography. Students participate in surgical procedures that require diagnostic imaging and demonstrate competency in operating portable radiography units.

RAD 218 Radiation Biology and Protection — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 120 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will present the principles of radiobiology and radiation protection. Students will analyze the basic theories of the biological, genetic, and somatic effects of radiation on human cells and tissue and learn the current radiation protection standards and practices used in the healthcare setting to protect themselves, patients, and others from exposure to radiation.

RAD 222 Pharmacology in Diagnostic Imaging — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 217 minimum grade "C-"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides the student with an introduction to pharmacology and contrast media administration as it relates to the medical imaging profession. Students gain an understanding of diagnostic contrast media and the effects of these agents on the human body. Students also receive instruction in basic techniques of venipuncture, appropriate patient care practices during drug administration, and management of medical emergencies in the diagnostic imaging department.

RAD 223 Sectional Anatomy — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 217 minimum grade "C-"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course presents an introduction to sectional anatomy. Students learn the basic protocols for obtaining and analyzing sectional images. The sectional anatomy of the head, neck, chest, abdomen, pelvis, spine, and joints is studied.

RAD 225 Clinical Education — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program; RAD 135, RAD 200, and RAD 217, minimum grade "C-"; RAD 135 and RAD 200, may enroll concurrently

0 lecture, 0 lab, 360 clinical, 0 other, 360 total contact hours

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper and lower extremities, chest, abdomen, spinal column, contrast studies, skull, surgical procedures, and portable radiography. Students will demonstrate their knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 226 Radiographic Quality Assurance **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 217 minimum grade "C-"

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces the student to the basic concepts of quality assurance as it relates to diagnostic imaging equipment. The evaluation of radiographic equipment to assure consistency in the production of diagnostic images is investigated. Students perform test and management procedures in the radiography lab to gain a better understanding of the theories and practices associated with quality assurance programs in the diagnostic imaging department. This course contains material previously taught in RAD 113.

RAD 235 Pathology for Radiographers **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 150 minimum grade "C-"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a survey of basic pathology and includes a study of the disease process and how various diseases alter the appearance and function of human organisms, including infectious diseases, tumors, chemical injuries and the conditions of illness involving the systems of the body.

RAD 240 Clinical Education **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program and RAD 225 minimum grade "C-"

0 lecture, 0 lab, 225 clinical, 0 other, 225 total contact hours

This course provides structured clinical experience in all areas of radiography. Elective rotations in specialized areas of the diagnostic imaging are explored (i.e., ultrasound, computed tomography, magnetic resonance imaging, radiation therapy, and mammography).

RAD 290 International Studies in Radiography **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

5 lecture, 25 lab, 0 clinical, 0 other, 30 total contact hours

This course offers students in radiography the opportunity to use their radiography training in a new and exciting venue. Each year the students will travel to Peru to do field work and research on mummies, human and animal bones, pottery, and other artifacts. Students will also get the opportunity to compare the cultural differences between Peru and the United States, and will visit various historical sites within Peru.

Reading REA

REA 070 Reading Comprehension I **4 credits**

Level I Prerequisites: Academic Reading Level 3; no minimum writing level

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Reading Comprehension I is the first course in the sequence of developmental reading courses. This course is designed to develop the critical reading skills necessary for success in college-level courses. Satisfactory/unsatisfactory grading is used. Satisfactory completion of REA 070 is required to advance to REA 071. Successful students may not repeat this course; unsuccessful students may repeat the course once. This course was previously ACS 070.

REA 071 Reading Comprehension II **4 credits**

Level I Prerequisites: REA 070 with grade "S"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of REA 070. It meets along with a REA 070 class, however students are required to complete more advanced individual and Reading Center assignments. Satisfactory/unsatisfactory grading is used.

Real Estate RES

RES 100 Real Estate Principles and Prelicensure **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is an introductory survey course in real estate principles, practices, and concepts. Students see a broad overview of the real estate field including varieties of residential and commercial brokerage, property financing, appraisal, investment, property management, land planning, property description, legal documents and contracts, title insurance, construction, condominiums, fair housing, civil rights, Board of Realtor functions, and State licensure and regulation. The course can begin an academic foundation in real estate, provide information to homeowners and investors, determine a career interest in real estate, or meet the state course prerequisite to taking the State of Michigan exam for a Real Estate Salesperson's license. This course is approved by the State of Michigan.

RES 120 Real Estate Finance **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers methods of financing residential, commercial, and income properties. Includes sources of funds, affordability issues, applications for loans, lender processing and risk analysis, creative financing, government programs, tax considerations, and secondary marketing. This course can help satisfy the State of Michigan education requirements for Real Estate Brokers. It is recommended, but not required, that RES 100 be taken before RES 120.

RES 130 Real Estate Appraisal **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers the nature of value, foundations of appraisal, valuation processes (including cost, market, income approaches, capitalization theory, and discounted cash flow). Also covered are appraisal ethics and reporting, and uses of the computer in residential and commercial appraising and valuation consulting. This course helps satisfy the State of Michigan course requirements for Real Estate Broker and Real Estate Appraiser licenses. It is recommended, but not required, that RES 100 be taken before RES 130.

RES 140 Real Estate Law **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers the laws and legal principles involved in residential and commercial real estate. Topics include evidence of title, deeds, financing, sale contracts, legal position of brokers, leases, zoning, fair housing and real estate taxes. This course helps satisfy the State of Michigan requirements for Real Estate Appraiser and Real Estate Broker licenses. It is recommended, but not required, that RES 100 be taken before RES 140.

RES 150 Real Estate Investment — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers investment in and development of land, homes, apartments, office buildings retail centers, warehouses and hotels. Examples from the community and other states are used to illustrate the course objectives. Topics include financing, taxation and exchanges. This course helps satisfy the State of Michigan Real Estate Broker education prelicensure requirement. It is recommended, but not required, that RES 100 be taken before RES 150.

RES 160 Real Estate Property Management — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to all the subfields of real estate property management including apartments, office, retail, and warehouse management. Materials used in this course are from the Institute for Real Estate Management (IREM), which is part of the National Association of Realtors (NAR) and other sources. This course helps satisfy the State of Michigan Real Estate Broker education prelicensure requirement. It is recommended, but not required, that RES 100 be taken before RES 160.

Robotics — ROB

ROB 101 Robotics I - I — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

20 lecture, 25 lab, 0 clinical, 0 other, 45 total contact hours

This is the first course of the robotics series. It is a beginning level course where students are exposed to various aspects of industrial robots and automated manufacturing. Studies include an introduction to hands-on programming using industrial robotic simulation software. This course contains material previously taught in ROB 121.

ROB 110 Robotics I - II — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 101 minimum grade "C"

25 lecture, 20 lab, 0 clinical, 0 other, 45 total contact hours

This course is a continuation of ROB 101 and includes more on the types of robots, application of flexible automation, open and closed loop control systems, tooling, and types of sensors and their operation. Integrating use of inputs, outputs (I/O), and counters into structured robot programs. Field trips to local manufacturing firms using robotic equipment help the student understand and witness concepts presented in class. This course contains material previously taught in ROB 121.

ROB 171 Introduction to FIRST Robotics — 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

In this course, students prepare to participate in the FIRST (For Inspiration and Recognition in Science and Technology) Robotics program and competition. Students are presented with the vision and the ethos of FIRST (Gracious Professionalism) including activities necessary for successful robotics competition. This course contains material previously taught in ROB 170.

ROB 172 FIRST Robotics Competition — 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 60 lab, 0 clinical, 0 other, 60 total contact hours

In this course, students prepare to participate in the FIRST (For Inspiration and Recognition in Science and Technology) Robotics program and competition. Students are presented with the vision and the ethos of FIRST (Gracious Professionalism) including activities necessary for successful robotics competition. This course contains material previously taught in ROB 170.

ROB 174 ROB Co-op Education I — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences.

ROB 212 Robotics II — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 101 and ROB 110

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This class concentrates on programming techniques for industrial robots. Students learn to program different types of robots incorporating inputs and outputs into their programs. The course is based on a series of student projects that, step by step, introduce each new command or concept. Students spend most of the class time in the lab and are expected to spend extra hours during scheduled open labs. Students with experience equivalent to ROB 101 and ROB 110 may contact the instructor for permission to waive the prerequisite.

ROB 222 Robotics Simulation — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: ROB 223

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to Robotic Simulation using the IGRIP software. Students learn how to build computer simulated models of robotic workcells. Programming and running these simulations are also covered. Hands-on use of the software is an integral part of the course.

ROB 223 Robotics III — 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 212

Corequisites: ROB 222

15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours

Students learn to work with peripheral devices in various robotic workcells. Labs include part recognition, sorting, counting, measuring, and palletizing. Programmable controllers are used to interface robots with other automated equipment. Students are introduced to automated conveyors, vision systems, bar coding, and automated welding. It is recommended that students complete ELE 224 Programmable Controllers before taking this course.

ROB 224 Robotics IV — 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 223

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course involves advanced programming of robots and programmable controllers in an integrated workcell. Problems related to maintenance and trouble-shooting constitute a major segment of the course. A group project involving the design and construction of a workcell that simulates some industrial process is an enjoyable conclusion to this program.

ROB 274 ROB Co-op Education II — 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 174; consent required

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses.

Science SCI

SCI 101 The Nature of Science 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course allows students to acquire an appreciation of the importance of the natural sciences to everyday life. The emphasis is on science as a way to evaluate the validity of scientific information in the media and on the Internet. The goal is for students to be able to apply the basic laws, concepts, and themes that underlie our natural world in order to place important public issues such as the environment, energy, and medical advances in a scientific context.

SCI 102 Applied Science 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Member of the United Association

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course prepares members of the pipe trades to accurately apply principles of physics to their work. Five major areas are studied: water and steam; hydraulics and pneumatics; mechanics; metals, alloys, synthetics; and corrosion. Within each of these areas, apprentices will develop their understanding of the concepts underlying the various aspects of their trade so that they can perform to accepted standards. This course is open only to apprentices in the United Association.

Sociology SOC

SOC 100 Principles of Sociology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the foundation of sociology as the basis of group behavior in a society, which includes social interaction, social control, social inequality, as well as social change. Emphasis is placed on the impact of social institutions on the self.

SOC 155 Hip-Hop Culture and Society 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course offers a critical analysis of Hip-Hop culture through an application of sociological and psychological concepts. Theories will be applied to current ethical and social issues as expressed through Rap lyrics. Topics to be examined include race, class, gender, materialism, alienation, crime, religion, sex, and misogyny. Biographical studies of Rap artists will investigate the relationship between Hip-Hop culture and the larger society.

SOC 202 Criminology 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

An examination is provided of the theories which attempt to explain criminal behavior. Punishment versus rehabilitation schools of thought is dealt with as well as capital punishment. Attention is also given to the functioning of police and court systems.

SOC 205 Race and Ethnic Relations 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the social and historical development of racial and ethnic stratification, and the legacy of inter-group conflict, racism, and discrimination. It covers sociological approaches to understanding the patterns of ethnic relations in the United States and other countries. Additionally, it analyzes the complex nature of social, economic, and power inequalities stemming from the intersection of social class, religion, and gender within and among racial-ethic groups. This course requires an understanding of sociological concepts.

SOC 207 Social Problems 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines how social forces can create and maintain or prevent major social problems that result from people's efforts to meet their growth and survival needs. Emphasis is placed on the structural, institutional, technological and social-psychological causes, consequences, and solutions of problems relevant to inequality, institutional crises, deviance and social control, population pressures and ecological problems.

SOC 220 Group Dynamics and Counseling 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100 or SOC 100, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces the student to using small groups to promote change. Group dynamics and developmental theory are studied in depth. Concepts such as norms, conformity, cohesion, and patterns of interaction are covered. Problems such as scapegoating and triangulation are analyzed. The following competencies are taught: screening candidates; composing the group; attending to thoughts and feelings; linking; observing group process; using activities and exercises; and ethical group practice.

SOC 225 Family Social Work 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSW 100 or SOC 100, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the theory and practice of social work with families. Students will learn how to analyze American families as social systems, and to identify common patterns in their structure and functioning. Common problems and special circumstances in family functioning will be addressed. Students will learn how to engage families and how to conduct a family intake assessment. Beginning theory on how to intervene with families will be addressed.

SOC 230 Marriage and Family 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course surveys the principles, practices, and problems of: mate selection; marriage and family; and singlehood from a sociological and social-psychological perspective. Emphasis is placed on how socio-cultural changes are reshaping lifestyle choices, parenting, communicating, and building and maintaining relationships. Some issues to be examined pertain to family planning, sexuality, sex education, single parenting, divorce, child, and spouse abuse.

SOC 250 Juvenile Delinquency 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

The growing-up process of late childhood and adolescence from a sociological and cultural viewpoint is a focus of this class. Problems of the individual in his/her social environment, group forces which lead to maladjustment and sociological principles for working with youth from the viewpoint of parent, teacher, police and youth organization leader are analyzed.

Spanish SPN

SPN 109 Beginning Conversational Spanish I 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Conversational in approach, this course assumes that the student has no previous knowledge of the language. It is designed for those who want to practice the fundamentals of spoken Spanish to enhance their travel enjoyment in Spain and Latin America. The course also promotes an appreciation of the Hispanic world. This course does not satisfy four-year college language requirements. This course was previously SPN 120.

SPN 110 Beginning Conversational Spanish II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 109 or one semester of college Spanish

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This is a continuation of SPN 109. This course is designed to further develop the skills acquired in Spanish 109. It is for students interested in expanding their speaking and comprehension skills, and their knowledge of Spanish grammar and Hispanic culture. This course does not satisfy four-year college language requirements. This course was previously SPN 121.

SPN 111 First Year Spanish I 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This course emphasizes basic conversation tools and grammatical structures. Class work includes written, oral, and audio exercises for students to develop their comprehension and communication skills. Students are expected to spend significant time studying outside of class and actively participating in class discussion. Cultural aspects of the Spanish-speaking world are also highlighted. The course is transferable to several four-year colleges.

SPN 119 Spanish Language Adventures 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 0 lab, 0 clinical, 15 other, 15 total contact hours

This course of independent study can be undertaken during any of the college field trip "Adventures" to Spanish-speaking countries. Students live in the host country for the duration of the Adventure, visit and study first-hand the outstanding cultural attractions, and have the opportunity to practice Spanish throughout their stay.

SPN 122 First Year Spanish II 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 111 minimum grade "C"

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

A continuation of SPN 111, this is a transferable course which emphasizes basic conversation tools and grammatical structures. Class work includes oral, written, and audio exercises for students to develop their communication and comprehension skills. Cultural aspects of the Spanish-speaking world are also highlighted. Students must demonstrate SPN 111 proficiency.

SPN 201 Second Year Spanish I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 122 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course emphasizes intermediate level communication. Study includes conversation tools and grammatical structures. Class is interactive and participatory. Grammar studies include a review and refinement of prerequisite grammar concepts then introduction and practice with the imperfect subjunctive and its uses including "si" clauses, the sequence of tenses, verbs that take prepositions, the impersonal with se, and the passive voice. Cultural studies will enable students to make connections and comparisons of Spanish and Latin American cultures through investigation and analysis of cultural products such as literature, movies, advertising, and videos. This course has replaced SPN 213.

SPN 211 Intermediate Conversational Spanish 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 110

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This flexibly structured course provides vocabulary expansion and cultural insights through total student involvement in the conversation practice sessions. Students with experience equivalent to SPN 110 may contact the instructor for permission to waive the prerequisite.

SPN 224 Second Year Spanish II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 201

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a continuation of second year Spanish, with special attention to reading and translating Spanish and Latin American short stories, essays, poetry, etc. Students with extensive experience may contact the instructor for permission to waive the prerequisite.

Tax TAX

TAX 101 Income Taxes for Individuals 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a beginning course in Individual Tax Return preparation covering both Federal and Michigan taxes that affect individuals. Students receive practical experience in preparation of an income tax return, both manually and using tax return computer software. The course is the beginning of a series of courses designed for those seeking employment as paraprofessionals in the tax field. Individuals who simply wish to understand their own taxes can benefit as well. Students must be able to work with numbers and computer applications. It is recommended that students complete MTH 125 or have a minimum Academic Math Level of 3.

United Association Sprinkler Fitters UAR

UAR 160 Introduction to Sprinkler Fitter Practices 3 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers introductory topics for new sprinkler fitter apprentices including: job safety and health, heritage in the pipe trades, and use and care of tools. Limited to United Association students.

UAR 162 Basic Drawing and Introduction to Automatic Sprinklers **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Basic drawing covers preparation of working drawings including orthographic projection, dimensioning, illustrating pipe threads, section views and isometric drawings. Introduction to Automatic Sprinklers includes the fundamentals of sprinkler protection and the standards governing systems. Topics also include the hazard categories specified in NFPA 13, wet and dry systems, flushing sprinkler systems, and the fundamentals of inspecting and testing systems. Limited to United Association students.

UAR 164 Reading Automatic Sprinkler Piping Drawings **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course familiarizes the student with the drawings most often found in the sprinkler trade. Topics include standard sprinkler system drawings, common symbols, and abbreviations found on the drawings. Limited to United Association students.

UAR 166 Installation of Sprinkler Systems **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers the installation regulations governing fire protection systems, which includes design, installation and testing. Other topics include the regulations with respect to piping, fittings, and other appurtenances for fire protection systems. Limited to United Association students.

UAR 168 Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Architectural working drawings and blueprint reading covers reading the types of prints found in a complete set of working drawings. The course includes correcting or compensating for inconsistencies found in drawings. Limited to United Association students.

UAR 170 Sprinkler Water Supply and The Automatic Sprinkler **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The automatic sprinkler portion of the course includes how sprinklers operate, regulations applicable to sprinklers, recognizing and installing the proper sprinkler, modifying sprinklers to address specific needs. The water supply portion of this course addresses water supply requirements for sprinkler systems. Topics include the relationship of occupancy classifications to water supply requirements, the installation of fire service mains, pumps, controllers, and tanks. Limited to United Association students.

UAR 172 Types of Fire Protection Systems and Alarms **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers various types of fire protection systems which include wet pipe and anti freeze systems. Topics include the design principles, specification, installation, and operation of fire protection systems. Limited to United Association students.

UAR 174 Special Application Sprinkler Systems and Hydraulics **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The special application sprinkler systems course addresses a wide range of systems found in the field. The course covers: latch clapper and differential type valves, pilot line systems, and preaction systems. The hydraulics portion of the course covers pressure, total force, specific gravity/density, pressure generation, flow rate, sprinkler system design, pressure loss and calculated systems. Limited to United Association students.

UAR 176 Human Relations **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course is an overview of the most important aspects of the role of foreman. Topics include the primary duties of the foreman, understanding what it takes to work well with others, and communicating effectively with others. Limited to United Association students.

UAR 178 Technical Writing **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Technical Writing covers the basic reports and forms used in the fire protection industry. Topics include specific instructions on how to complete reports and forms in a manner acceptable to others in the fire protection industry. Limited to United Association students.

United Association Pipefitters UAF

UAF 102 Introduction to Arc Welding, Soldering, and Brazing **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is the introductory course in welding, soldering, and brazing. Topics include: safety in welding, cutting and allied processes, oxyacetylene cutting and welding, procedure for setting up oxy-fuel cutting and welding equipment. Related safety is covered in all topics. Limited to United Association students.

UAF 120 Introduction to Pipefitter Practices **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course is the introduction to pipefitting for new apprentices. Course topics include the Heritage Program, use and care of tools, pipe, fittings, valves, supports and fasteners, job safety and health and soldering and brazing. Related safety is covered in all topics. Limited to United Association students.

UAF 122 Drawing Interpretation and Plan Reading **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is an introductory course in drawing and reading blueprints. Course topics include: introduction to basic drawing tools, measuring tools, lettering skills, three-view, plan view, elevation view drawings, graphic symbols for pipe fittings and valves, interpretation of technical diagrams, piping drawings, and interpretation of building plans and building specifications. Limited to United Association students.

UAF 124 Oxy Fuel Cutting and Shielded Arc Welding **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is an intermediate course in shielded metal-arc oxy-fuel cutting and welding leading to certification. Limited to United Association students.

UAF 126 Hydronic Heating and Steam Systems **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course is concerned primarily with the technical aspects of design and installation of several types of hydronic systems found in the pipe trades. Topics also include information concerning the installation of high-efficiency heating and cooling systems, low and high temperature, radiant heat and solar hot water heating systems. The steam system portion of the course includes: generating steam, installing steam piping and accessories and troubleshooting all types of steam systems. Limited to United Association students.

UAF 128 Refrigeration and Electrical Controls **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers the basic principles of air conditioning and refrigeration. The basic components of the refrigeration cycle are identified. Topics include operation and proper installation of the devices and equipment required to control the flow of refrigerant in air conditioning and refrigeration systems. Limited to United Association students.

UAF 130 Advanced SMAW Welding **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This advanced shielded metal-arc welding course leads to Shielded Metal-Arc Welding certification. Limited to United Association students.

UAF 132 Advanced Pipefitter Topics **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers special topics for pipefitters. Topics may include customer relations, appearance, and on-the-job conduct, and effective leadership/supervision. Related safety is included in all topics. Limited to United Association students.

UAF 134 Controls and Instrumentation **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The purpose of this course is to teach the fundamentals of basic electricity and the fundamentals of electrical controls found in mechanical equipment installations such as air conditioning, heating, fuel burning, water heating, and refrigeration. Safety is stressed. Limited to United Association students.

UAF 136 GTAW Welding **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The Gas Tungsten Arc Welding (GTAW) process provides a method of joining difficult-to-weld metals. This course shows how this process has been adapted to the welding of carbon steel and stainless steel pipe. The course covers equipment, shielding gases, tungsten electrodes, etc. along with safe work practices unique to this type of welding. Limited to United Association students.

United Association Plumbers UAP

UAP 100 Introduction to Plumbing Practices **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course is the introduction to plumbing for new apprentices. Course topics include the Heritage Program, use and care of tools, pipe, fittings, valves, supports and fasteners, job safety and health, and soldering and brazing. Related safety is covered in all topics. Limited to United Association students.

UAP 102 Introduction to Arc Welding, Soldering, and Brazing **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is the introductory course in welding, soldering, and brazing. Topics include: safety in welding, cutting and allied processes, oxyacetylene cutting and welding, procedure for setting up oxy-fuel cutting and welding equipment. Related safety is covered in all topics. Limited to United Association students.

UAP 104 Drawing Interpretation and Plan Reading **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is an introductory course in drawing and reading blueprints. Course topics include: introduction to basic drawing tools, measuring tools, lettering skills, three-view, plan view, elevation view drawings, graphic symbols for pipe fittings and valves, interpretation of technical diagrams, piping drawings, and interpretation of building plans and building specifications. Limited to United Association students.

UAP 106 Oxy Fuel Cutting and Shielded Arc Welding **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

All phases of welding are covered in this course beginning with oxyacetylene and oxy-fuel cutting and welding progressing through shielded metal-arc welding test procedures. Topics include tools, equipment, types of rod, weld positions, proper gaps, bevels, and the various types of lap and butt joints. Safety is stressed throughout. Limited to United Association students.

UAP 108 Water Supply and Drainage **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Water supply topics include: water treatment, water mains and services, building water supply systems, and hot water supply. The course provides a detailed description of the purpose and function of the various components of a water supply system. The drainage portion of this course presents the various types of drainage systems installed and maintained by pipe trades journeyworkers. The course includes: sewage disposal, sewers and drains, building drainage systems, the plumbing trap, and venting.

UAP 110 Customer Service Techniques **2 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This training encompasses all aspects of customer service. Topics include customer relations, appearance, and on-the-job conduct. Limited to United Association students.

UAP 112 Plumbing Fixtures and Appliances **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course presents the handling and installation of the various types of plumbing fixtures and appliances including information on accessories and fixture controls (flushmeters, faucets, etc). Limited to United Association students.

UAP 114 Plumbing Codes and Regulations **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers plumbing code construction, general use of codes, and code application. appropriate state, local, or provincial codes are reviewed. Limited to United Association students.

UAP 116 Medical Gas and Backflow Prevention Techniques **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course provides introduction to the concepts and procedures of medical gas installation. Topics include certification procedures and requirements for installers of medical gas systems, including brazer qualification. This course also presents the importance of backflow prevention and the dangers of cross connections. Topics include guidelines for acceptable testing practices, annual inspection and repair, and maintenance of backflow prevention assemblies used in modern plumbing installations. Limited to United Association students.

UAP 118 Advanced Plumbing Practices **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course addresses advanced plumbing practices including supervision/leadership, pipe systems design, and advanced drawing procedures. Limited to United Association students.

United Association Service Technician UAE

UAE 140 Introduction to HVACR Service **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course is the introduction to HVACR for new apprentices. Course topics include the Heritage Program, use and care of tools, pipe, fittings, valves, supports and fasteners, job safety and health and soldering and brazing. Related safety is covered in all topics. Limited to United Association students.

UAE 142 Soldering and Brazing **3 credits**

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The preparation and joining of the cup type copper tube is covered in detail in this course both by the soldering and the brazing methods. The student is taught the proper and safe use of tools, torches, solders, filler metals and fluxes used in making a soldered/brazed joint. Related safety is included in every topic. Limited to United Association students.

UAE 144 Refrigeration — 2 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This is the introductory refrigeration course. Topics include basic physics, basic electricity, and the basic refrigeration cycle of reciprocal, centrifugal, rotary, screw, and absorption systems. Control and sequence of operation of the above systems is included. Introduction to environmental impact of refrigerant handling is included. Related safety is covered in each topic. Limited to United Association students.

UAE 146 Air Conditioning — 2 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers air conditioning systems, installation, and service. Topics include: psychrometric properties of air, building heating and cooling load calculations, control applications, energy conservation and heat recovery, in addition to a review of basic science. Limited to United Association students.

UAE 148 Electrical Controls — 2 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The purpose of this course is to teach fundamental theory and operation of electric/electronic controls used in starting, stopping, and cycling electromechanical equipment encountered in the HVACR field. Related safety is included in each topic. Limited to United Association students.

UAE 150 DC Electronics — 2 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers the fundamentals of direct current applications in control theory and basic electronics. Limited to United Association students.

UAE 152 Advanced Electrical Controls and Pneumatic Controls — 3 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

The pneumatic controls portion of the course is a presentation of basic pneumatic control principles. Theory of operation, basic principles, and troubleshooting are included. Related safety is included in each topic. Limited to United Association students.

UAE 154 Advanced Air Conditioning and Refrigeration — 3 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course presents special topics in air conditioning and refrigeration. Topics may include introduction to building automation, load calculations, duct sizing, Universal CFC certification, and air distribution. Limited to United Association students.

UAE 156 Air and Water Balancing and Motor Alignment — 3 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course covers principals of balancing forced air systems, balancing flow in hydronic loops, pumps, principles of alignment, and vibration elimination. Limited to United Association students.

UAE 158 Advanced HVACR Practices — 3 credits

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

Special topics covered in this course may include advanced building automation, leadership/supervision, customer relations, importance of clear and concise reporting (work orders), and safety. Limited to United Association students.

United Association Supervision — UAS

UAS 111 Construction Supervision I: Motivating Employees — 3 credits

Level I Prerequisites: Admission to Construction Supervision program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an introduction to the study of organizational behavior for students enrolled in the United Association Construction Supervision certificate and associate degree programs. As the first in a series of courses, it emphasizes concepts and principles on which future courses will build. Topics such as learning, motivation, personality, conflict, communication, group dynamics, and leadership are highlighted.

UAS 122 Construction Supervision II: Supervisory Skills — 3 credits

Level I Prerequisites: Admission to Construction Supervision program and UAS 111 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is one of the series of five courses for students enrolled in the United Association Construction Supervision certificate and associate degree programs. This course teaches students practical and operational supervisory skills specifically in the areas of planning, organizing, leading, and controlling construction projects.

UAS 210 Construction Supervision III: Legal and Personnel Aspects — 3 credits

Level I Prerequisites: Admission to Construction Supervision program and UAS 111

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to the law of contracts, certain aspects of labor agreements, and other legal relationships as they apply to the construction industry. Additionally, in this course students explore personnel issues such as recruiting, pay incentives, evaluations, and training. Finally students will understand various aspects related to managing their careers.

UAS 222 Construction Supervision IV: The Construction Project — 3 credits

Level I Prerequisites: Admission to Construction Supervision program and UAS 122

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course examines the various stakeholders of the construction project and their relationship to each other, with an emphasis on the balance maintained among the competing needs of these parties. Students become familiar with the basic functions of a project and how the activities performed contribute to the overall profitability and health of the project as a whole. The course prepares students to handle conflict in the workplace. Emphasis is on the impact at work and how to choose and apply approaches for resolving conflict. The course examines problem-solving techniques and methods.

UAS 230 Construction Supervision V: Scheduling and Project Management — 3 credits

Level I Prerequisites: UAS 111, UAS 122, UAS 210, and UAS 222, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the last course of a series for students enrolled in the United Association Construction Supervision certificate and associate degree programs. This course introduces students to the various processes used to develop and manage the schedule of a project. Additionally, in this course students will examine various tools used to assist in scheduled development and management. Finally students will explore the desktop scheduling software Microsoft Project.

United Association Training UAT

UAT 110 UA/MCA Foreman Certification 3 credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers methods of teaching about becoming a foreman. With the UA and the Mechanical Contractors' Association (MCA) recognizing the need for effective leaders this course introduces current and potential foreman to the topics that are critical in the workplace. It focuses on leadership functions, commitment, people skills, communications, teamwork, and organization. Students will be strongly urged to implement this Foreman Certification Program at the local union level. Limited to United Association program participants.

UAT 111 Introduction to Industrial Teacher Training 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on the principles of learning, elements of trade teaching and the methods of teaching an applied technical skill.

UAT 121 Industrial Teacher Training II 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on developing instructional objectives, planning and presenting related information lessons and the methods of teaching a second applied technical skill.

UAT 131 Industrial Teacher Training III 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on the development of written tests, an elective professional skill, and a third teaching demonstration in a technical skill area.

UAT 141 Industrial Teacher Training IV 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on discussion and interaction techniques, an elective professional skill and the teaching methods in a fourth technical skill area.

UAT 151 Industrial Teacher Training V 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on innovations and problems in trade teaching, an elective professional skills, and methods of teaching in a fifth technical skill area.

UAT 161 Technical Seminar 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on the methods of teaching a technical skill area. Special approval required and will replace UAT 121, 131, 141, or 151.

UAT 171 Professional Seminar 3 credits

Level I Prerequisites: Admission to Industrial Training program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will focus on instructional methodology and practices for the trade-related instructor. Special approval required and will replace UAT 121, 131, 141, or 151.

UAT 201 Advanced Instructor Training I 3 credits

Level II Prerequisites: UAT 151

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 202 Advanced Instructor Training II 3 credits

Level II Prerequisites: UAT 151

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 203 Advanced Instructor Training III 3 credits

Level II Prerequisites: UAT 151

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 204 Advanced Instructor Training IV 3 credits

Level II Prerequisites: UAT 151

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 205 Advanced Instructor Training V 3 credits

Level II Prerequisites: UAT 151

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 207 Using UA Resources 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

The focus of this course is to provide students with the knowledge and skills to use technology to teach with Blackboard and Microsoft Office and to use everything available to them through UANET. This course will focus on the apprentice registration process, the UA Smart System, and state and federal grants. Students taking this course should have a working knowledge of how to operate a computer. Limited to United Association program participants.

UAT 210 Public Speaking 1.5 credits

20 lecture, 2.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed to help students acquire essential speaking and listening skills for the classroom. In-class exercises focus on the delivery of lecture material and conducting demonstrations. Students polish organization and delivery skills, as well as gain a heightened awareness of the relationship between a speaker and an audience. Students are encouraged to bring materials from classes they are currently teaching as reference for class exercises. Limited to United Association program participants.

UAT 211 Trade Teaching Overview **1.5 credits**

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This introductory professional course provides students with an understanding of trade education in the American education system, goals of trade education, the uniqueness of trade education, and the responsibilities good trade teachers have in structuring a learning environment where change takes place. Students will recognize differences in learning outcomes, and design instruction to meet different learning needs. Limited to United Association program participants.

UAT 212 Structures for Learning **1.5 credits**

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about structured learning. The purpose of this course is to provide tools to help UA instructors develop new courses or modify existing ones. The course focuses on: the purposes of trade education; the role of setting objectives for daily instruction; the nature of behavioral objectives; identifying the elements of behavior/skills; and identifying consistent standards of performance; and the principles of evaluating learner progress. Limited to United Association program participants.

UAT 213 Planning and Presenting Lessons **1.5 credits**

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about planning and presenting two types of lessons: skills and information. Students will learn to use traditional and UA electronic resources for planning lessons, managing courses, and teaching. Students will learn to choose methods, techniques, and technologies appropriate to a particular class and situation. Working together, students will develop a lesson plan, deliver a brief lecture, and demonstrate a task. Limited to United Association program participants.

UAT 214 Techniques in Classroom Interaction **1.5 credits**

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This covers methods of teaching teachers about how to create interactive classroom discussions and the techniques associated with developing individualized instruction. Topics include: the process of creating interactive discussions in trade teaching; guidelines for conducting classroom discussions; issues related to group dynamics; and concerns about teaching a diverse group of students. Limited to United Association program participants.

UAT 215 Problem Solving in Trade Teaching **1.5 credits**

12 lecture, 4 lab, 0 clinical, 6.5 other, 22.5 total contact hours

This course covers methods of teaching problem resolution and innovation implementation in the local UA school. Topics include analyzing and solving teaching problems, recognizing student learning disabilities, evaluating student performance, and implementing innovative solutions in the local school. Students should come prepared to share innovative ideas from their local school. Limited to United Association program participants.

UAT 219 Introductory ATR Training **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about the fundamentals of the UA Welder Certification Program. Participants will be able to perform the duties and responsibilities of an authorized testing representative (ATR) as defined in the program, from administrative functions to performing visual inspections of welded coupons to determining their acceptability and verifying compliance of radiographic examinations. Limited to United Association program participants.

UAT 220 Pipe Trades Applied Mathematics **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about pipe trades applied mathematics. Topics to be covered include: teaching styles and methods, creating exam questions, and applying mathematics to the plumbing and pipefitting industry. There will be a refresher on some important math functions, such as offsets, metric systems, and calculator usage. On the final day of class students will be required to demonstrate a basic math lesson to the class. Limited to United Association program participants.

UAT 221 Gas and Oil Burner Service **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about gas and oil burner service. Topics to be covered include: gas installations, gas and oil burner design flame safeguard controls, and burner set-up, maintenance and repair. Curriculum presentation techniques, application of ideas to local classroom situations, and training mock-ups will also be discussed. On the final day of class students will be required to give a basic presentation to the class. Limited to United Association program participants.

UAT 222 Basic Computer for the Trade Teacher **1.5 credits**

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course introduces the basics of computers. Students will learn to produce documents using a word processor, create electronic spreadsheets to help prepare budgets and manage numerical information, prepare presentation graphics, and learn search techniques on the Internet. Topics include: hardware and software, Windows operating system, Word, spreadsheet, creating course handouts, PowerPoint, and Internet navigation. Limited to United Association program participants.

UAT 223 Centrifugal Water System Analysis **1.5 credits**

12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the theoretical and practical analysis of various chilled water systems. A thorough review of P/E diagrams, basic thermodynamics, and system design will be covered. Troubleshooting of common problems found in chilled water systems will be discussed as well as refrigerant handling, recovery, maintenance, and operation. Limited to United Association program participants.

UAT 224 OSHA for the Construction Industry **3 credits**

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers methods of teaching about OSHA standards. The course is designed for "new" students only and emphasis will be placed upon those areas in construction that are most hazardous. OSHA Standards that apply to the construction industry will be used as a guide. Students will be briefed on effective instructional approaches and the effective use of visual aids and handouts. After completion of course, students will receive a certificate from the Department of Labor. Limited to United Association program participants.

UAT 225 Plumbing Fixtures **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about the various types of plumbing fixtures. Topics to be covered include: the history of plumbing fixtures; the theory of design; the principles of installation and operation of these fixtures; the fixture controls; and related appliances. Students taking this class should have a working knowledge of plumbing fixtures. Limited to United Association program participants.

UAT 228 Online Teaching Techniques 1.5 credits

7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers the use of the Internet as a teaching tool. Forums, chat rooms, online testing, online assignments, using external links, and other Internet features will be explained and demonstrated. Methods for converting traditional class materials into an online format will be emphasized. Procedures and standards for class page creation and maintenance will be presented. Students will have hands-on practice in creating online course materials. Student taking this course should be familiar with using an Internet browser and must have an email account. Limited to United Association program participants.

UAT 229 Introduction to Variable Frequency Drives 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to provide the Local Union instructor with the necessary presentation materials and teaching techniques to introduce a variable frequency drives (VFD) class in their curriculum. Students taking this course should have a good knowledge base of controls and AC induction motors, and be working in the HVAC service field. Installation, setup/programming and troubleshooting techniques will be covered. Limited to United Association program participants.

UAT 230 3D Computer-Aided Drafting (CAD) 3 credits

20 lecture, 25 lab, 0 clinical, 0 other, 45 total contact hours

This course covers methods of teaching about 3D computer-aided drafting (CAD). Topics to be covered include: the 3D CAD environment; creation of 3D piping; 3D pipefittings and other complex solids; creating surfaces; editing solids; and utilizing AutoCAD and Quickpen Pipe Designer 3D software. Limited to United Association program participants.

UAT 231 UA Green Awareness Certification 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about "green" awareness. It emphasizes concepts and principles related to the specification, purchase, and application of energy efficient products. Upon successful completion of this course and certification exam, students will receive a certification that attests to their knowledge of the emerging trends, terminologies, systems, and products that are considered green. Limited to United Association program participants.

UAT 232 Drainage 1.5 credits

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about drainage. Topics to be covered include: history of the plumbing system; private and public sewage disposal systems; sewers and drains; grading; compaction; building drainage systems; the plumbing trap; and venting the drainage system. Limited to United Association program participants.

UAT 233 CAD for the Piping Trade 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the efficient and productive implementation of computer-aided drafting to the piping drawing production environment. Utilizing AutoCAD software, issues relating to maximizing the efficiency of on the job CAD drawing production are addressed, such as configuration of peripheral equipment and AutoCAD software configuration. Students taking this course should have working knowledge of basic drafting. Limited to United Association program participants.

UAT 235 Power Piping 1.5 credits

18 lecture, 0 lab, 0 clinical, 4.5 other, 22.5 total contact hours

This course covers methods of teaching about the fundamentals in the design of ASME B31.1 Power Piping. It focuses on the installation of proper pipings, pipe supports, history of the ASME codes, material science, mechanical behaviors, piping metallurgy, welding metallurgy, metal failures, and proper material acquisitions. Basic fossil-fired plant steam-water cycle, feed-water cycle, and piping hanging loads will be covered. Limited to United Association program participants.

UAT 236 Coyne First Aid for the Trades 1.5 credits

12.5 lecture, 2 lab, 0 clinical, 8 other, 22.5 total contact hours

This train-the-trainer course will certify the student instructors to teach/conduct the Coyne basic life support/first aid training program. Topics to be covered include: providing basic life support for adults, infants, and children; performing first aid for musculoskeletal injuries and burns; using the automated external defibrillator; and administering proper care in diabetic emergencies, seizures, and near drowning. Limited to United Association program participants.

UAT 237 Geothermal Certification 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This train-the-trainer course will certify the student instructors to teach geothermal heating and cooling. Topics to be covered include: principles of geothermal heating and cooling; design and material options; energy independence; and environmental security. Upon completion of the training program and passing the exam, students will be issued IGSHPA accreditation and be certified as a UA/IGSHPA trainer/installer. Limited to United Association program participants.

UAT 240 Applied Electrical Fundamentals 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about applied electrical fundamentals. It deals with the application of the fundamental electrical principles to the electrical controls commonly used in the pipe trades. How to use simple test equipment safely will be stressed as the students learn to make checks on circuits and to measure voltage, amperage, and resistance. Limited to United Association program participants.

UAT 241 Advanced Water Supply 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about advanced potable hot water and water supply. The focus of the course is to provide students with a background in water supply and the installation and maintenance of domestic water heating equipment. Topics to be covered include: water mains and services; building water supply systems; and cross connections, valves, and pumps. Limited to United Association program participants.

UAT 242 Advanced Centrifugal Water Chillers 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about centrifugal overhaul procedures, precision measuring techniques, teardown techniques, start-up, and chiller analysis. Compressor component functionality will be stressed in order to give the student a good working knowledge of centrifugal compressor design and operation, including a step-by-step centrifugal teardown procedure. There will be 2 days of hands-on training at which time a centrifugal compressor shall be completely disassembled and rebuilt. Limited to United Association program participants.

UAT 245 Teaching with Exam View **1.5 credits**

16 lecture, 6.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course teaches best practices of how to use Exam View test creation software. Instructors will create and administer classroom and on-line quizzes and exams using supplied question banks. There will be a demonstration on creating question banks based on the assignments which correspond to UA textbooks. Students will learn how to convert their existing testing material into the Exam View format. Converting tests for use with Blackboard on-line classes will also be covered. Limited to United Association program participants.

UAT 247 ASME b31.1 Code **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about ASME B31.1 Power Piping Code. Topics include: B31.1 scope, code history, material selection and use, fabrication rules and their bases, inspection, weld & base metal discontinuities, NDE and testing requirements. Provide examples of problems that develop from not understanding the Code requirements. Cover the development of Quality Control Manuals for Code use, and the application for an ASME Pressure Piping Stamp and its renewal requirements. Limited to United Association program participants.

UAT 248 Valves **1.5 credits**

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about plumbing and pipefitting valves. Topics to be covered include: valve designs, valve functions, multi-turn valves, check valves, ball valves, butterfly valves, and typical valve failures. The material of valve construction and the specifications and standards governing their construction and use will also be discussed. Students taking this course should have a working knowledge of valves. Limited to United Association program participants.

UAT 249 Methods in Teaching Arc Welding **1.5 credits**

12.5 lecture, 0 lab, 0 clinical, 10 other, 22.5 total contact hours

This course covers methods of teaching about the fundamental theories and practical applications of arc welding. Topics to be covered include: principles of basic welding, metallurgy, shielded metal arc welding, gas tungsten arc welding, gas metal arc welding, flux core arc welding, and oxyfuel cutting. Students taking this course should have working knowledge of arc welding. Limited to United Association program participants.

UAT 250 Advanced Applied Drawing **1.5 credits**

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about advanced plan reading and related drawing. Topics to be covered include: principles of drawing, proper drawing techniques, sleeve and piping sketches, coordinated drawing, deck layout, and piping systems design. Limited to United Association program participants.

UAT 251 Related Science **1.5 credits**

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the principles of science for plumbing and pipefitting tradespeople. Topics to be covered include: properties and characteristics of water and steam, hydraulics and pneumatics, mechanics, metals, alloys, synthetics, and corrosion. This course is designed to assist students with generating ideas for their own classrooms and understanding the science related to both the plumbing and pipefitting trades. Limited to United Association program participants.

UAT 252 Introduction to Computer-Aided Drafting **3 credits**

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed as an introduction to computer-aided drafting (CAD) and the CAD environment. Emphasis is placed upon the fundamentals of CAD software and the creation of two-dimensional CAD piping drawings. AutoCAD drafting software and Windows 2000 or Windows XP operating systems are utilized. It is suggested that each student bring a USB thumb drive to use with this course. Limited to United Association program participants.

UAT 253 Copper Piping Systems **1.5 credits**

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the copper piping systems. Topics to be covered include: copper production; standards and codes regulating the manufacture, specification and installation of copper systems; soldering and brazing of copper to copper and copper to dissimilar metals; alternative joining systems including roll-grooving, press-connect, push-connect and mechanically formed tees; and installation-related field failure troubleshooting and prevention. Limited to United Association program participants.

UAT 254 Centrifugal Water Chiller Controls **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about centrifugal water chiller - controls, including electrical and electronic applications. It covers the fundamentals of microprocessors in relations to control of solid state starters, frequency drives, and control systems associated with centrifugal water chillers. Carrier, Trane, and York demonstrator panels and labs will be utilized for hands-on training. Those attending should have knowledge of refrigeration principles. Limited to United Association program participants.

UAT 255 Fundamentals of Rigging **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about the basic fundamentals of rigging. Topics to be covered include: rigging safety in basic knots and their uses, wire ropes, web slings and their applications in the trades. Also, signaling methods and practical, safe uses in every day installations in the piping industry will be discussed. Limited to United Association program participants.

UAT 256 Pneumatic Controls **1.5 credits**

14.5 lecture, 8 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the fundamentals of pneumatic control. Topics to be covered include: basic control theory and definition; control loops and the air supply; control valves; velocity reset control; calibration; single and dual thermostats; transmitters; auxiliary devices; single and dual receiver controls; and control dampers. Limited to United Association program participants.

UAT 257 Hydronic Heating and Cooling **1.5 credits**

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about hydronic heating and cooling. Topics include: low pressure boilers, heat exchangers, system controls and accessories, one, two, three and four pipe systems, two-way and three-way control valves, centrifugal pumps and pump curves, system curves, primary and secondary pumping, balancing, venting, zoning, water chillers, chilled and condenser water systems, cooling towers, and water source heat pump systems. Limited to United Association program participants.

UAT 258 Advanced Residential Plumbing 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about advanced residential plumbing. Topics to be covered include: multi-unit housing installations, phases of work, job planning, layout, prefabrication, tools and equipments, residential work advantages, myths about residential plumbing, and residential service. Students taking this course must have experience in the plumbing field. Limited to United Association program participants.

UAT 259 Backflow Repair and Maintenance 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the repair and maintenance of large diameter backflow assemblies from various manufacturers. The main topics covered include troubleshooting and repairing the assemblies and following appropriate safety measures. Students who wish to be certified as "Backflow Repair and Maintenance Instructors" must receive a passing grade on the written and practical examinations, and must have a current backflow prevention certificate. Limited to United Association program participants.

UAT 260 Advanced Steam Technology 1.5 credits

20 lecture, 2.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about advanced steam technology. Topics to be covered include: behavior of steam and condensate; removing condensate; air and non-condensable gases; piping design considerations; live steam; operation of steam traps; and heat exchange coils. Limited to United Association program participants.

UAT 261 Thermoplastic Fusion 1.5 credits

11 lecture, 11.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about thermoplastic fusion. Topics to be covered include: thermoplastic fusion technology and methods used in the semiconductor, pharmaceutical, and chemical processing industries; hands-on operation of the IR (infrared) 63, IR 225, BCF Plus, and socket fusion machines; and the Weld Inspection Program. Students taking this course are expected to wear appropriate work clothes. Limited to United Association program participants.

UAT 262 Pipe Trades Advanced Drawing 1.5 credits

7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about pipe trades applied drawing. Topics to be covered include: three view, plan view, and elevation view drawings; graphic symbols for pipe fittings and valves; interpretation of technical diagrams and piping drawings; and building specifications. Limited to United Association program participants.

UAT 263 Fundamentals of Building Automation 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the basic fundamentals of direct digital control. An overview of different building automation system applications, as applied to the HVAC & R industry will supply students with the necessary information to be knowledgeable about this topic. Students attending this course should have HVAC & R control experience. Limited to United Association program participants.

UAT 264 Electronic Controls 1.5 credits

16 lecture, 6.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers the basic fundamentals of electronic controls pertaining to the HVAC industry and the commercial and industrial refrigeration industries. The objective of the course is to familiarize students with the application and teaching principles of electronic controls commonly used in the pipe trades industry. Students taking this course should have knowledge of electrical controls and should currently work in the air conditioning and refrigeration fields. Limited to United Association program participants.

UAT 265 HVACR Apprenticeship Practicum 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching the Five-Year Heating, Ventilating, Air Conditioning, and Refrigeration apprentice training program. Special emphasis is placed on how to teach aspects of classroom instruction. The use of pressure-enthalpy diagrams will be stressed. This course will also prepare students to reach an introductory HVAC & R familiarization course to apprentices and journey-people who have limited HVAC & R experience. Limited to United Association program participants.

UAT 266 Air and Water Balance 1.5 credits

15 lecture, 4 lab, 0 clinical, 3.5 other, 22.5 total contact hours

This course covers methods of teaching about air and water balance. The principles of heat transfer and fluid flow as related to hydronic balancing and system performance as well as electrical testing and measurement will be covered. The application and operation of system components such as fans, pumps, duct systems, and hydronic piping systems will also be discussed. Limited to United Association program participants.

UAT 267 Advanced HVAC & R Troubleshooting 1.5 credits

17 lecture, 4 lab, 0 clinical, 1.5 other, 22.5 total contact hours

This course covers methods of teaching about electrical and refrigerant controls as they apply to heating ventilation, air conditioning and refrigeration technologies. This course demonstrates the use of the psychrometric properties of air in practical troubleshooting applications and various skills will be demonstrated in the classroom and on working equipment. Several psychrometric charts will be presented to clarify theory and practical applications. Limited to United Association program participants.

UAT 268 Technical Classes for Sprinkler Fitters 1.5 credits

18 lecture, 0 lab, 0 clinical, 4.5 other, 22.5 total contact hours

This course covers methods of teaching about the mechanics, protocols, and proper techniques of sprinkler fitting. It also addresses how to adapt to the various codes and product changes in the fire sprinkler industry. Other topics to be covered include: fire sprinkler alarms, fire sprinkler spray patterns, sprinkler inspections, lift training, technical changes to NFPA, and water mist. Students who wish to be enrolled in this course must have prior experience with sprinkler fitting. Limited to United Association program participants.

UAT 269 Medical Gas 3 credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course covers methods of teaching about the codes and standards that govern medical gas, medical-surgical vacuum piping systems installation and testing, requirements for installer qualification, and requirements for brazer qualification in accordance with ASME Section IX. A written exam will be administered at the end of the course. General and specific information needed to develop local medical gas training programs throughout the UA will be provided. Limited to United Association program participants.

UAT 270 Properties of Metals 1.5 credits

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the properties and characteristics of metals commonly used in the pipe trades. Emphasis will be given to explaining the nature of ferrous and non-ferrous metals in both their raw and manufactured form, the physical and mechanical properties of common metals, and the processes used to create desired changes. Limited to United Association program participants.

UAT 271 Steam Heating Systems 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about steam heating systems. Topics to be covered include: the identification, modification, installation, and trouble shooting of steam heating systems; properties of saturated steam; piping of heat exchange equipments; and fluid draining. Boiler basics, co-generation, and the role steam plays in the production of electricity will also be discussed. Limited to United Association program participants.

UAT 272 Wire Feed Orbital Welding 3 credits

20 lecture, 20 lab, 0 clinical, 5 other, 45 total contact hours

This course covers methods of teaching about wire feed orbital welding. Topics to be covered include: wire feed orbital equipment capacity/capabilities and their accessories; installation and set-up of equipments; machine and weld head calibrations; weld joint design; tack-up; weld preparation; and welding parameters. Students taking this class should already be well versed in orbital tube welding. Limited to United Association program participants.

UAT 273 Introduction to the Transit and Level 1.5 credits

10 lecture, 4.5 lab, 0 clinical, 8 other, 22.5 total contact hours

This course covers methods of teaching about the fundamental use of the transit, the builder's level, the rotating laser level, the pipe laying laser level, and the relationship to other surveying equipment. Practical job applications will be covered, such as learning how to set up and use the instruments, transferring of elevations, running a level net to prove that elevations are correct, and the proper set-up of pipe and rotating lasers. Limited to United Association program participants.

UAT 274 Oxy-Acetylene Cutting and Welding 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about oxy-acetylene safety, welding, layout and cutting procedures. Experts will demonstrate the techniques and procedures employed in successfully teaching this subject. Each student will have the opportunity to try the methods being discussed. This course will cover the technical aspects as well as the practice of cutting and welding pipe with oxy-acetylene. Students selecting this course should come to class in safe working clothes. Limited to United Association program participants.

UAT 275 Trade Related Trigonometry 1.5 credits

12.5 lecture, 0 lab, 0 clinical, 10 other, 22.5 total contact hours

This course covers methods of teaching about trade related trigonometry applications to first-year apprentices and journey-people. The majority of class time will consist of performing assignments in class. Teaching techniques will be addressed and problematic areas will be discussed to provide student instructors with intimate course knowledge. Limited to United Association program participants.

UAT 276 Orbital Tube Welding 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about orbital fusion welding as used in semiconductor, food and beverage, pharmaceutical and biotechnology industries. This course is designed for students with a TIG welding background. Limited enrollment permits extensive hands-on welding time on the equipment. Students selecting this course should come to class in safe working clothes. Limited to United Association program participants.

UAT 277 GTAW - Wire Feed Machine Welding 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course provides the welder/operator a basic understanding of the orbital pipe welding process. The course introduces the theory of operation, technology comparison of analog and microprocessor-controlled systems, equipment set-up, and safety issues. The course features the Liburdi/Dimetric GTAW wire fed machine welding equipment.

UAT 278 GTAW Wire Feed Welding 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about the Gold Trac GTAW wire feed machine pipe welding process at the local level. This course introduces the operation, technology, comparison of analog and microprocessor-controlled systems, hot wire welding, and equipment set-up and safety issues. Additionally, the course covers process variables, system programmer control functions, weld parameter selection and development, and Dimetrics power supplies such as GT2. Limited to United Association program participants.

UAT 279 UA Certified Machine Cutting, Severing, and Beveling 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed to teach the Journeyperson how to machine the many different joint designs used in our industry today. Each student is required to have a calculator, ruler, paper and pencil, safety glasses, and attend class in safe working clothes. To receive UA certification in this course, each journeyperson is required to pass a practical and written exam.

UAT 280 Aluminum Pipe Welding (GTAW) 1.5 credits

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching aluminum pipe welding utilizing the Gas Tungsten Arc Welding (GTAW) Process. The main focus will be on welding aluminum pipes in all positions. This course is supported by various technical presentations of industry representatives. Enrollment shall be limited to those who have a minimum of five years of GTAW experience. Limited to United Association program participants.

UAT 281 Gas Installations 3 credits

20 lecture, 20 lab, 0 clinical, 5 other, 45 total contact hours

This course covers methods of teaching about gas installations. The focus of this course is to examine gas trainers that simulate the operation of appliances and electrical control systems. Topics to be covered include: the gas codes, burner management, flame sensing systems, valves and regulators, and electrical control systems. Limited to United Association program participants.

UAT 282 Plastic Welding 1.5 credits

10 lecture, 12.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching plastic welding process. The main focus will be on welding plastic pipes in all positions. Topics to be covered include: welding flat plate in horizontal and vertical positions; welding schedules in stationary position; backwelding glued joints; and welding in 5G position. Limited to United Association program participants.

UAT 283 Art of Tube Bending 1.5 credits

12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about the parts of a bender, the bending process, setbacks as they relate to any bend, and the layout of bends. This course shows the layout, common mistakes, and correction of single bend errors. It also explains the use of props, line up, leveling of tubing in the bending process, isometric drawing, wire templates, numbering the bending order, and safety concerns at the bending table. Limited to United Association program participants.

UAT 284 Gas Metal Arc Welding 1.5 credits

12 lecture, 6 lab, 0 clinical, 4.5 other, 22.5 total contact hours

This course covers methods of teaching about the technique of Gas Metal Arc Welding (GMAW). This course emphasizes set-up of GMAW equipment, selection of project consumables, selection of the proper gases, and trouble-shooting techniques. Hands on welding instruction will be given on plate and pipe in all positions. Specialized applications of flux core, metal core, aluminum, and pulse mig will also be presented. Limited to United Association program participants.

UAT 285 ASME B31.3 Process Piping 1.5 credits

16.5 lecture, 0 lab, 0 clinical, 6 other, 22.5 total contact hours

This course covers methods of teaching about the ASME B31.3 Process Piping Code. The course will cover B31.3 scope, materials, fabrication & erection, inspection, examination and testing. The course will also cover mechanical behavior, welding metallurgy, basic piping design, cathodic protection, and piping for category M fluid service. Students selecting this course should have a strong background in metallurgy, welding, and piping fabrication. Limited to United Association program participants.

UAT 286 Industrial Refrigeration Trainer 1.5 credits

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to use the Hampden Industrial Refrigeration Trainer (IRT) as a teaching tool in presenting basic commercial refrigeration concepts. Topics to be covered include: operating and servicing large industrial systems requiring water-cooled condensers; electric and hot gas defrost systems; cooling towers; hot bypass capacity control systems; crankcase pressure regulators; crankcase heaters; and pressure pumps. Limited to United Association program participants.

UAT 287 R410a Safety and Training 1.5 credits

11 lecture, 6.5 lab, 0 clinical, 5 other, 22.5 total contact hours

This course covers methods of teaching about providing training and certification for the proper safety, handling, and application of R410A refrigerant. Students will be informed on how they can become a proctor as well as how to administer the Universal R410A Safety & Training Exam in their home Local Union. Topics to be covered include: R410A test preparation, thorough knowledge of the R410A equipment, and use of the online Esco Institute webpage for proctors. Limited to United Association program participants.

UAT 288 Shielded Metal Arc Welding 1.5 credits

8.5 lecture, 8 lab, 0 clinical, 6 other, 22.5 total contact hours

This course covers methods of teaching about Shielded Metal Arc Welding (SMAW) and oxy-fuel cutting & welding. Topics to be covered include: welding shop safety, types and proper operation of the welding machines used in SMAW, and welding types of electrodes and their make-up. Class size will be limited to allow as much rod time as possible. Students selecting this course must come to class in safe working clothes. Limited to United Association program participants.

UAT 289 Electrical Diagrams in HVAC 1.5 credits

16.5 lecture, 6 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about alternative methods for teaching electrical diagrams in HVAC. This course is designed around a software program called "The Constructor." Participants will learn how this software works, how to interpret electrical diagrams using this new software, and how to apply it in teaching HVAC apprentices. Limited to United Association program participants.

UAT 290 Gas Tungsten Arc Welding 1.5 credits

8.5 lecture, 8 lab, 0 clinical, 6 other, 22.5 total contact hours

This course covers methods of teaching about gas tungsten arc welding. It consists of welding pipe in the 2G, 5G, and 6G positions. The course covers the use of consumable inserts and the cup-walking technique on carbon and stainless steel. Square butt fusion procedures, used in the food and drug industry, will also be discussed. Enrollment will be limited to experienced welding students only. Students selecting this course must come to class in safe working clothes. Limited to United Association program participants.

UAT 291 Residential Refrigeration UA STAR 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching how to conduct a review for the residential and light commercial refrigeration UA STAR exam. All of the categories covered by the exam will be reviewed. Students will use the UA interactive on-line curriculum to download the residential and light commercial refrigeration UA STAR review materials. Web-based STAR review classes will also be discussed. Limited to United Association program participants.

UAT 292 Pipefitting Layout 1.5 credits

5 lecture, 17.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about pipefitting layout. This class will teach students a unique way to layout pipe and fittings in the field without using math or manuals. This is a hands-on class so students are encouraged to wear jeans as you will be working on the floor. This class will also cover the mitering of pipes and fittings and the fabrication of specialty tools for the trade. Limited to United Association program participants.

UAT 293 Commercial Refrigeration UA STAR 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct a review for the commercial refrigeration UA STAR exam. All of the categories covered by the exam will be reviewed. Students will use the UA interactive on-line curriculum to download the commercial refrigeration UA STAR review materials. Web-based STAR review classes will also be discussed. Limited to United Association program participants.

UAT 294 Plumbing Service 1.5 credits

12.5 lecture, 10 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about plumbing service. The course will cover the operational, installation, and safety aspects including trouble shooting and repair of fixtures, flush valves sewer systems, faucets, appliances, and electronics in the plumbing industry. Aspects of customer relations and marketing will be reviewed. This course will address the employer, employee relationships, and standard company policies of the plumbing industry. Limited to United Association program participants.

UAT 295 UA STAR Plumbing Review 1.5 credits

18 lecture, 4.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct the plumbing UA STAR certification exam. All of the categories covered by the exam will be reviewed. Students will use the UA interactive on-line curriculum to download the UA STAR plumbing review materials. Web-based STAR review classes will also be discussed. The final 4 hours of the class will be an actual NITC proctored UA STAR Plumbing exam. Limited to United Association program participants.

UAT 296 UA STAR HVACR Review 1.5 credits

18 lecture, 4.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct a review for the HVAC & R UA STAR Plumbing certification exam. All of the categories covered by the exam will be reviewed. Students will use the UA interactive on-line curriculum to download the HVAC & R UA STAR review materials. Web-based STAR review classes will also be discussed. The final 4 hours of the class will be an actual NITC proctored HVAC & R UA STAR Plumbing exam. Limited to United Association program participants.

UAT 297 Sprinkler Fitter UA STAR 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct a review for the sprinkler fitter UA STAR exam. All of the categories covered by the exam will be reviewed. Students will use the UA interactive on-line curriculum to download the Sprinkler Fitter UA STAR review materials. Web-based STAR review classes will also be discussed. Limited to United Association program participants.

UAT 298 UA STAR Pipefitting Review 1.5 credits

14 lecture, 4.5 lab, 0 clinical, 4 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct an 18.5 hour review for the UA STAR steamfitting/pipefitting certification exam. All categories covered by the exam will be reviewed. Using the UA interactive online curriculum to download the review materials and practice exams will be covered. Web-based STAR review classes will also be discussed. The final 4 hours of the class will be an actual NITC proctored UA STAR Steamfitting/Pipefitting exam. Limited to United Association program participants.

UAT 299 ATR Refresher Training 1.5 credits

10 lecture, 8 lab, 0 clinical, 4.5 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct an Authorized Testing Representative (ATR) refresher training for the UA Welder Certification Program. Emphasis will be placed on program changes and their effects on Local Unions' implementation of the system requirements. A written examination will be administered to evaluate students' understanding and capability to implement program requirements. Limited to United Association program participants.

UAT 320 History of the Labor Movement 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about the history and heritage of the labor movement. It is built on the narratives of working people and their leaders creating enduring institutions. It is a story of crises, courage, and innovation that spans approximately 350 years from organized colonial craftsmen to workers confronting the global economy in the 21st century. Limited to United Association Instructor Training Program graduates.

UAT 321 Labor History and the UA: 1920 to Present 1.5 credits

18.5 lecture, 0 lab, 0 clinical, 4 other, 22.5 total contact hours

This course covers methods of teaching about the labor history and the UA from the 1920s to the present. This course is a continuation of the narratives of working people and the leaders who created enduring labor institutions. Course UAT320, History of the Labor Movement, is a prerequisite for taking this course. Limited to United Association Instructor Training Program graduates.

UAT 325 Industrial Rigging 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about industrial rigging. This course has a theoretical and a practical component covering the best rigging practices, calculating centers of gravity, sling stress, crane set up, and the use of tuggers, jacks, and rollers. There will be a written exam along with the performance exam, which upon passing the student will receive a UA/EPRI certification for industrial rigging as well as a rigging course CD and example workbook. Limited to United Association Instructor Training Program graduates.

UAT 351 Plumbing Codes 1.5 credits

14.5 lecture, 0 lab, 0 clinical, 8 other, 22.5 total contact hours

This course covers methods of teaching about the development, technical comparison, interpretation and practical application of the model plumbing and mechanical codes. The UA Plumbing Code Manual will be used as the base document. Limited to United Association Instructor Training Program graduates.

UAT 358 Cross Connection Control 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about surveys and inspections for cross connection control. Topics include: identifying cross-connections; understanding how backflows occur; methods used to control backflows; recommended applications for each type of backflow assembly; interpreting plumbing codes and local ordinances; and inspecting a facility for cross-connections. Exercises include reviewing plans and going to an actual site to do a survey inspection for cross-connection control. Limited to United Association Instructor Training Program graduates.

UAT 362 Valve Repair Recertification 1.5 credits

8.5 lecture, 8 lab, 0 clinical, 6 other, 22.5 total contact hours

This course covers methods of teaching about how to conduct a Valve Repair Recertification Program using the quality system manual. Emphasis will be placed on comprehending new industry standards on valve maintenance and repair techniques; precision measuring devices; hands-on review of valve disassemble; and documentations used for quality control. A written examination will be administered to evaluate students' understanding and capability to implement program requirements. Limited to United Association program graduates.

UAT 367 Advanced Air and Water Analysis 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about advanced air and water analysis. It is designed for students who have Start, Test and Balance experience. Topics include: advanced studies of psychrometrics, pump and fan design, electrical power analysis, and the use of variable frequency drives. Students will engage in classroom activities and perform practical exercises on different operating equipment in a mechanical area. Limited to United Association Instructor Training Program graduates.

UAT 369 Advanced Residential Training 1.5 credits

15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about administrative procedures for implementing this program in the various local areas. Students will learn how the recruiting, promoting, and training differs from the regular apprentice training programs. This course covers the installation, maintenance, and servicing of plumbing, heating, air conditioning, and the sprinkler systems installed in residential application. Limited to United Association Instructor Training Program graduates.

UAT 390 Operation of a UA Training Program 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course covers methods of teaching about how to provide local union coordinators, directors, and Joint Apprenticeship Training Committee members with the background and knowledge necessary to operate today's UA's local training programs as well as to provide policy and guidance developing local standards of apprenticeship for approval and registration. Limited to United Association Instructor Training Program graduates.

UAT 391 Coordinators' Yearly Update 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course covers methods of teaching about important administrative concerns and issues affecting the local union Joint Apprenticeship and Training Committee. Each section addresses current events and new concepts in the area of training. Students are encouraged to bring questions concerning their local union Joint Apprenticeship and Training Committee for discussion. Limited to United Association Instructor Training Program graduates.

UAT 393 Canadian Coordinators' Update 1.5 credits

12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course is designed to provide Canadian Local Union Directors/Training Coordinators with information about important administrative updates, concerns, and issues affecting the local unions so that they will be able to share this knowledge with others. Each course module addresses the impact of current events and new regulations on apprenticeship training. Students are encouraged to bring questions concerning their local union Joint Apprenticeship and Training Committee for discussion. Limited to United Association Instructor Training Program graduates.

UAT 395 UA Administrative Resources 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

The focus of this course is to teach Training Coordinators/Directors how to use technology to teach with Blackboard and Microsoft Office and to use everything available to them through the UANET. This course will focus on the apprentice registration process, the UA Smart System, and state and federal grants. Students taking this course should have a working knowledge of how to operate a computer. Limited to United Association Instructor Training Program graduates.

UAT 397 Coaching Students with Challenges 1.5 credits

22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This teach-the-teachers course focuses on how to coach adult learner students who are coping with life's challenges. Topics to be covered includes: how to recognize students who are struggling academically or personally; how to offer support to students and refer them to appropriate personnel; and how to adapt to students' needs and learning styles. Participants will learn how to apply useful principles to course design as well as to address common, student-related issues that arise during classroom instruction. Limited to United Association Instructor Training Program graduates.

Video Production VID

VID 101 Video Production I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: VID 110

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is an introductory course that teaches the basics of video production. Basic videography, lighting, storyboarding, composition, and audio will be covered. Students are guided through a series of demonstrations and hands-on exercises to develop their skills. A brief overview of the history and language of production is included.

VID 102 Video Production II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 101 and VID 110

Corequisites: VID 112

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to develop and expand skills learned in VID 101. More in-depth study of storyboarding, shot lists, scriptwriting, budgeting, videography, lighting, audio, and more advanced production techniques are covered. Through a combination of lecture and hands-on exercises, students develop skills to produce various styles of productions. Depending on the students' interest, they may produce a finished informational, public service, advertisement, narrative, or artistic video production.

VID 110 Digital Video Editing I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: VID 101

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course introduces students to non-linear digital editing (computer editing). A brief overview of the editing process is covered. Students learn the basics of importing (digitizing) video, basic editing techniques, trimming clips, basic effect palettes, overlaying audio with video, recording narration and music, and saving the finished production to digital tape as well as QuickTime file.

VID 112 Digital Video Editing II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 101 and VID 110

Corequisites: VID 102

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Students learn advanced editing techniques using Final Cut Pro software on a Mac G4 computer. Students study and develop skills in system configuration and language, rough cut editing, editing for effect, match frame editing, printing to video/multimedia or web, as well as editing their own footage from VID 102. A combination of lecture and hands-on experience are combined to develop editing skills.

VID 200 Lighting 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 101 and VID 110

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students gain hands-on experience with lighting for video through the exploration and application of multiple lighting effects. Specific areas covered are: color temperatures of light, white balance, manipulation of light using filters, exposure latitudes and light ratios, use of light meters, diffusers, flags, electrical demands, safety procedures as well as many other topics consistent with improving the ability to communicate more effectively using lighting in video.

VID 203 Web Video 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 102 and 112, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students produce video presentations for the Web. From the original concept to Web-ready video clips, students address the technical as well as the aesthetic steps necessary to produce Web-ready digital video. Topics range from commercial, to educational, to entertainment applications.

VID 255 Video Studio/Green Screen Effects 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 102 and VID 112

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to give students the necessary skills to produce effective, professional productions using one of the most popular and cost-effective ways to place subjects or objects in virtually any location or environment imaginable. Until very recently this process was only possible for feature film studios. Students produce a variety of video productions emphasizing the use of green screen effects.

VID 270 Documentary and Reality Videos 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 102 and VID 112, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course will trace the two main approaches to documentary video production- recording behavior and re-creating past events. The student will be introduced to pivotal historical as well as present-day documentary filmmaking. Student productions explore the process from conceptualization, recording, to the final digital documentary production.

VID 276 Advanced Video Graphics I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 112 or GDT 140, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 15 other, 60 total contact hours

This course introduces students to motion graphics composition for film/video and internet distribution. Students learn the role of motion graphics in these media. Adobe After Effects is used as the main tool to create motion graphics compositions. Students learn the basics of visual effects terminology, effect keying and transparency, keyframing, synchronizing compositions to music, compression codecs required for output optimization, and saving the finished composition to a variety of film/video and internet ready formats such as Apple QuickTime. Lecture, hands-on experience and creative mentoring are combined to develop motion graphics compositing skills. Students gain a working knowledge of After Effects and are exposed to examples of work from industry professionals for inspiration. This course was previously VID 299.

VID 277 Advanced Video Graphics II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 276 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students expand upon the basic skills learned to produce advanced motion graphics compositions. Adobe after Effects is used as the main tool to create motion graphics compositions. Students will create original work based on advanced concepts such as color-screen keying, particle effects, three- dimensional space, and geometric motion. Students will expand their ability to create motion graphics through critical review of work from industry professionals.

VID 280 DVD Authoring **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2; GDT 140, INP 152, or PHO 127, minimum grade "C"

45 lecture, 0 lab, 0 clinical, 15 other, 60 total contact hours

DVD authoring will give students the skills to create interactive DVD's using digital video, graphic files, photographs and any other multi-media formats. With the use of menus, buttons, subtitles, alternate languages and sound tracks, this course will be an excellent way for students to create a portfolio and add an additional skill on their resume.

VID 295 Professional Portfolio **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; VID 102 and VID 112; and one of VID 200, VID 255, VID 270, or VID 277, may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is designed to provide students an opportunity to assemble a professional portfolio. The portfolio is a compilation of projects that demonstrate students' skills in such areas as audio, lighting, editing, special effects, as well as the incorporation of music, design and/or photography. A DVD is the final product, and is designed for purposes of self-promotion for students seeking employment, clients, or transfer to a college or university.

Welding and Fabrication WAF

WAF 100 Fundamentals of Welding **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is a basic combination welding course dealing with oxy-acetylene and arc welding designed to meet the needs of students enrolled in auto body repair, auto mechanics, detailer draftsman, etc. Typical applications are made in a laboratory setting.

WAF 101 Acetylene Welding **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Designed for students who need a knowledge of oxy-acetylene welding and a degree of skill required by industry. Primarily for students whose occupations are associated with welding.

WAF 102 Basic ARC Welding **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This introductory course in arc welding covers theory and practice, and proper procedures for various welding positions. Topics include A.C. and D.C. welding, electrode identification, classification and proper applications to typical operations.

WAF 103 Heli-ARC Welding **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

Instruction is given in tungsten, inert gas, and shielded arc welding. Manually operated torches are used on such metals as aluminum, stainless and mild steels; includes theory directly related to the composition and properties of these metals.

WAF 104 Soldering and Brazing **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This course is designed to provide basic knowledge of soft soldering, brazing, silver soldering, copper tubing and fittings, brazing of steel, silver soldering of copper and stainless. Practical application included.

WAF 105 Welding for Art and Engineering **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours

This is a basic welding class. No welding experience is necessary. Oxyacetylene (welding and cutting), arc welding and soldering and brazing are explored with hands-on training provided. Students work on class competencies, at their own pace, beginning with safety practices and set-up in each area. The welding lab has individual work stations for a no waiting to work and a safe atmosphere. Students are given personalized instruction on every class objective to help with their mastery of the art of welding.

WAF 106 Blueprint Reading for Welders **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This class is designed for the welders who are responsible for properly locating weld on the weldment and determining weld size, contour, length, type of filler metal and any applicable welding procedures.

WAF 111 Welding I Oxy-Acetylene **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course focuses on the use of oxy-acetylene equipment to perform such operations as butt, lap, and fillet welds using filler rods; flame cutting, brazing and silver soldering. Safety procedures and practices of gas welding are emphasized.

WAF 112 Welding II Basic ARC **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course involves the use of arc welding equipment both A.C. and D.C. to perform such operations as butt, lap and fillet welds using bare and shielded electrodes, all-purpose and special electrodes. Study of electrical welding, power supplies and electrodes is included. Safety procedures are stressed.

WAF 123 Welding III Advanced Oxy-Acetylene (OAW) 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

Advanced instruction is provided in oxy-acetylene welding with emphasis on out of position welded joints. Procedures are covered and put in practice for fabricated welded joints on steel plate and pipe. Related theory is included.

WAF 124 Welding IV Advanced ARC (SMAW) 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

Advanced instruction is provided in arc welding using both A.C. and D.C. arc welding equipment. Emphasis is on out of position welded joints in mild steel, alloy steels and procedures covered for cutting, beveling and fabricating various welded joints. Related theory, codes and standards are included.

WAF 200 Layout Theory Welding 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course involves layout problem solving for the welder including techniques using layout dye, combination squares, protractors, center heads, dividers, and straight edges. Template making for pipe cutting and joining is emphasized. A basic math review and the properties of a circle such as radius, chords, and degrees of angularity for jobs done in the field are included.

WAF 201 Special Topics in Welding 1-8 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; WAF 105, WAF 111, WAF 112, or WAF 227

0 lecture, 0 lab, 15 clinical, 120 other, 135 total contact hours

The focus of this course varies, depending on students' individual goals and objectives. Some students may use this course to construct a project, others may wish to brush up their skills for a welding certification. Credits and contact hours will vary for each student. Students complete a "plan of work" during the first class.

WAF 205 Plumbing and Pipefitting I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course is a practical study of plumbing and pipefitting fundamentals as well as the classifications and functions of boilers, steam, and hot water heating systems. Heating code is also covered.

WAF 206 Plumbing and Pipefitting II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; WAF 205

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is a continuation of Plumbing and Pipefitting I. Participants learn about water supply, waste disposal, drainage, venting, unit sanitation equipment, and plumbing codes. Students with equivalent experience may contact the instructor for permission to waive the prerequisite.

WAF 210 Welding Metallurgy 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course focuses on identification of metal properties through testing. It also covers the effects of alloying elements, specification use, and application of steel alloys and stainless steel. The principles of heat treatment of metals in various welding applications are included.

WAF 215 Welding V Advanced GTAW and GMAW 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course involves tungsten-inert gas shield arc welding with manually operated torch on such metals as aluminum, mild steel and stainless steel. Technical theory directly related to T.I.G. welding including the composition and properties of metals.

WAF 226 Specialized Welding Procedures 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; WAF 123, WAF 124, and WAF 215, minimum grade "C"

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course involves specialized oxy-acetylene welding, inert gas-shield arc and GMAW MIG welding. Emphasis is given to aluminum, stainless steel, high alloy steels and cast iron. Procedures for welding of the exotic metals such as titanium, columbium, zirconium, and molybdenum are included.

WAF 227 Basic Fabrication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; WAF 105

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

For advanced welders planning to use their welding skills in manufacturing, this class teaches the skills necessary to design, cut and fit pieces to be welded. Welders are trained in the use of modern machines for bending, punching, cutting and shaping. Each student takes a self-chosen project and carries it through from blueprints to actual assembly. Estimation of material and labor costs is included.

WAF 229 Shape Cutting Operations 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

Students learn the shape-cutting process with oxy-acetylene and plasma cutting torches. With the use of the optical eye and Burny IV N.C. control, students learn how to cut mild steel, aluminum and stainless steel parts.

WAF 289 MIG Welding 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours

This course focuses on the use of MIG equipment to perform such operations as BUTT, LAP, and fillet welds. The course emphasizes all weld positions using solid and flux cored wires.

Yoga YOG

YOG 101 Introduction to Hatha Yoga 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides an introduction to the philosophy and practice of Hatha Yoga.

YOG 102 Philosophy and Practice of Yoga 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; YOG 101

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a continuation of Yoga 101, Introduction to Hatha Yoga.

Course Changes: Code, Title, and Credit Changes

WAS			IS NOW		
Course	**Title**	**Credit**	**Course**	**Title**	**Credit**
ABR 113	Applied Body Welding and Estimation	4	ABR 113	Estimating and Shop Operations	4
ABR 123	Auto Body Repair Applications	4	ABR 123	Technical Auto Body Repair	4
ABR 124	Auto Refinishing Applications	4	ABR 124	Technical Automotive Refinishing	4
ACC 131	Computer Applications in Accounting	3	ACC 131	Accounting Information Systems	3
BMG 230	Introduction to Supervision	3	BMG 230	Management Skills	3
CIS 100	Introduction to Software Applications	3	CIS 100	Introduction to Computers and Software Applications	3
CIS 238	PC Assembly Language	3	CIS 238	Computer Organization	3
CNT 211	Administering and Managing Microsoft Windows 2003 Server	4	CNT 211	Administering and Managing Microsoft Windows Server	4
COM 183	Advanced Public Speaking	3	COM 183	Persuasion	3
COM 235	Practicum: Orchard Radio	3	COM 235	Broadcast Arts Practicum	3
COM 240	Broadcast Internship	3	COM 240	Broadcast Arts Internship	3
CON 170	Introduction to Cabinetry and Millwork	3	CON 170	Cabinetry and Millwork I	3
CON 173	Cabinet Making Principles and Concepts	3	CON 173	Cabinetry and Millwork II	3
CON 175	Cabinet Making Fabrication	3	CON 175	Cabinetry and Millwork III	3
CON 275	Finishing Concepts and Processes	3	CON 275	Cabinetry and Millwork IV	3
CUL 130	Beginning Cake Decorating	1	CUL 132	Basic Cake and Wedding Cake Design	2
CUL 131	Wedding Cake Design	1	CUL 132	Basic Cake and Wedding Cake Design	2
DEN 109	Oral Hygiene	1	DEN 118	Preventive Dentistry	2
DEN 119	Dental Nutrition	1	DEN 118	Preventive Dentistry	2
ELE 254	PLC Applications	5	ELE 254	PLC Applications	4
ENG 100	Written Communication	4	ENG 100	Introduction to Technical and Workplace Writing	4
ENG 101	Introduction to Journalism	3	ENG 101	Introduction to Print Journalism	3
ENG 115	Scriptwriting for Media	3	ENG 115	Writing for Visual Media	3
ENG 216	Newswriting and Reporting	3	ENG 216	News Writing and Reporting	3
ENG 217	Feature Writing and Research	3	ENG 217	Feature Writing	3
FLP 111	Fluid Power Fundamentals	4	FLP 101	Fluid Power Fundamentals - I	2
FLP 111	Fluid Power Fundamentals	4	FLP 110	Fluid Power Fundamentals - II	2
HVA 105	Heating, Ventilation, and Air Conditioning III	4	HVA 105	Residential and Light Commercial Heating Systems	4
HVA 107	Heating, Ventilation, and Air Conditioning IV	4	HVA 107	Residential and Light Commercial Air Conditioning Systems	4
HVA 108	Residential HVAC Codes and Competency Exams	3	HVA 108	Residential HVAC Competency Exams and Codes	3
HVA 207	Codes and Industry Standards with Commercial ICE	3	HVA 207	Commercial Industry Standards with Competency Exams	3
MTH 148	Functional Mathematics for Elementary Teachers I	4	MTH 148	Functional Math for Elementary Teachers I	4
MTH 149	Functional Math for Elementary School Teachers II	4	MTH 149	Functional Math for Elementary Teachers II	4
MTH 182	Mathematical Analysis II	4	MTH 182	Business Calculus	4
MTT 103	Introduction to Materials	3	AMS 103	Materials and Processes	3
NCT 112	Introduction to Computerized Machining (CNC)	4	NCT 101	Introduction to Computerized Machining (CNC) - I	2
NCT 112	Introduction to Computerized Machining (CNC)	4	NCT 110	Introduction to Computerized Machining (CNC) - II	2
NUR 100	Introduction to Nursing	2	NUR 100	Introduction to Nursing - Care of Healthy Older Adults	2
NUR 103	Fundamentals of Nursing - Lab/Clinical	3	NUR 103	Fundamentals of Nursing - Theory/Lab Practice/Clinical	3

Course Changes: Code, Title, and Credit Changes *continued*

WAS			IS NOW		
Course	**Title**	**Credit**	**Course**	**Title**	**Credit**
NUR 261	Advanced Medical-Surgical/Transition to RN Nursing	2	NUR 261	Advanced Medical-Surgical Nursing/Transition to RN Nursing	2
NUR 262	Transition to the Registered Nurse Role - Clinical Practice	3	NUR 262	Advanced Medical-Surgical Nursing/Transition to RN Nursing - Clinical Practice	3
REA 070	Intermediate Reading Comprehension I	3	REA 070	Reading Comprehension I	4
REA 071	Intermediate Reading Comprehension II	3	REA 071	Reading Comprehension II	4
ROB 121	Robotics I	4	ROB 101	Robotics I - I	2
ROB 121	Robotics I	4	ROB 110	Robotics I - II	2
ROB 170	FIRST Robotics Competition	4	ROB 171	Introduction to FIRST Robotics	1
ROB 170	FIRST Robotics Competition	4	ROB 172	FIRST Robotics Competition	3

New Courses

Course	Title	Credit
ABR 119	The Art of Metal Shaping	2
ABR 135	Collision-Related Mechanical and Electrical Repairs	4
ACS 055	Success Skills Workshop	3
ACS 095	Student Success Seminar	3
ACS 111	First Year Experience Seminar	3
ACS 123	Information Literacy	1
AMS 104	Rapid Prototyping and Methods	3
AMS 105	Lean Manufacturing Methods	3
AMS 204	Innovations Application	4
AMS 205	Build Concept Prototype	4
ARB 111	First Year Arabic I	5
ASV 249	Diagnosis and Repair	4
BIO 104	Biology of Exercise	4
BIO 110	Introduction to Exercise Science	3
BIO 201	Physiology of Exercise	4
BIO 225	Tests and Measurements in Exercise Science	3
BMG 241	Innovation: Process and Application	1
CCC 200	Custom Auto Body Technician I	4
CCC 201	Custom Fabrication and Chassis Design I	4
CCC 220	Custom Auto Body Technician II	4
CCC 221	Custom Fabrication and Chassis Design II	4
CCC 240	Custom Auto Body Technician III	4
CCC 241	Custom Fabrication and Chassis Design III	6
CCC 260	Custom Auto Body Technician IV	6
CMG 180	Application of Construction Materials	3
CRT 200	Refinish Technician I	4
CRT 201	Collision Technician I	4
CRT 220	Refinish Technician II	2
CRT 221	Collision Technician II	2
CRT 240	Refinish Technician III	4
CRT 241	Collision Technician III	4
CRT 260	Refinish Technician IV	4
CRT 261	Collision Technician IV	4
CRT 280	Refinish Technician V	4
ENG 187	Folk Literature and Culture of the Caribbean and South America	3
HST 210	U.S. Women's History	3
IDN 111	Interior Design Studio I	4
IDN 113	Theory of Interior Design I	2
IDN 114	Human Needs in Design	2
IDN 122	Interior Design Studio II	4
IDN 133	Theory of Interior Design II	2
IDN 137	Interior Design Materials	2
IDN 201	Building Systems for Interior Design	2
IDN 211	Interior Design Studio III	4
IDN 222	Interior Design Studio IV	4
IDN 224	History of Interior Design I	3
IDN 234	History of Interior Design II	3
IDN 240	Interior Design Building Codes	2
INP 281	Web Coding IV	3
MST 140	Motorcycle Service Technology IV	4
MST 210	Performance Engine Technology	4
MST 220	Dynamometer Operations	4
PEA 115	Health and Fitness Experience	5
PHL 240	Social-Political Philosophy	3
SPN 201	Second Year Spanish I	4
UAT 110	UA/MCA Foreman Certification	3
UAT 207	Using UA Resources	1.5
UAT 210	Public Speaking	1.5
UAT 211	Trade Teaching Overview	1.5
UAT 212	Structures for Learning	1.5

New Courses *continued*

Course	Title	Credit
UAT 213	Planning and Presenting Lessons	1.5
UAT 214	Techniques in Classroom Interaction	1.5
UAT 215	Problem Solving in Trade Teaching	1.5
UAT 219	Introductory ATR Training	1.5
UAT 220	Pipe Trades Applied Mathematics	1.5
UAT 221	Gas and Oil Burner Service	1.5
UAT 222	Basic Computer for the Trade Teacher	1.5
UAT 223	Centrifugal Water System Analysis	1.5
UAT 224	OSHA for the Construction Industry	3
UAT 225	Plumbing Fixtures	1.5
UAT 228	Online Teaching Techniques	1.5
UAT 229	Introduction to Variable Frequency Drives	1.5
UAT 230	3D Computer-Aided Drafting (CAD)	3
UAT 231	UA Green Awareness Certification	1.5
UAT 232	Drainage	1.5
UAT 233	CAD for the Piping Trade	1.5
UAT 235	Power Piping	1.5
UAT 236	Coyne First Aid for the Trades	1.5
UAT 237	Geothermal Certification	1.5
UAT 240	Applied Electrical Fundamentals	1.5
UAT 241	Advanced Water Supply	1.5
UAT 242	Advanced Centrifugal Water Chillers	1.5
UAT 245	Teaching with Exam View	1.5
UAT 247	ASME b31.1 Code	1.5
UAT 248	Valves	1.5
UAT 249	Methods in Teaching Arc Welding	1.5
UAT 250	Advanced Applied Drawing	1.5
UAT 251	Related Science	1.5
UAT 252	Introduction to Computer-Aided Drafting	3
UAT 253	Copper Piping Systems	1.5
UAT 254	Centrifugal Water Chiller Controls	1.5
UAT 255	Fundamentals of Rigging	1.5
UAT 256	Pneumatic Controls	1.5
UAT 257	Hydronic Heating and Cooling	1.5
UAT 258	Advanced Residential Plumbing	1.5
UAT 259	Backflow Repair and Maintenance	1.5
UAT 260	Advanced Steam Technology	1.5
UAT 261	Thermoplastic Fusion	1.5
UAT 262	Pipe Trades Advanced Drawing	1.5
UAT 263	Fundamentals of Building Automation	1.5
UAT 264	Electronic Controls	1.5
UAT 265	HVACR Apprenticeship Practicum	1.5
UAT 266	Air and Water Balance	1.5
UAT 267	Advanced HVAC & R Troubleshooting	1.5
UAT 268	Technical Classes for Sprinkler Fitters	1.5
UAT 269	Medical Gas	3
UAT 270	Properties of Metals	1.5
UAT 271	Steam Heating Systems	1.5
UAT 272	Wire Feed Orbital Welding	3
UAT 273	Introduction to the Transit and Level	1.5
UAT 274	Oxy-Acetylene Cutting and Welding	1.5
UAT 275	Trade Related Trigonometry	1.5
UAT 278	GTAW Wire Feed Welding	1.5
UAT 281	Gas Installations	3
UAT 282	Plastic Welding	1.5
UAT 283	Art of Tube Bending	1.5
UAT 284	Gas Metal Arc Welding	1.5
UAT 285	ASME B31.3 Process Piping	1.5
UAT 286	Industrial Refrigeration Trainer	1.5
UAT 287	R410a Safety and Training	1.5
UAT 288	Shielded Metal Arc Welding	1.5
UAT 289	Electrical Diagrams in HVAC	1.5
UAT 290	Gas Tungsten Arc Welding	1.5
UAT 291	Residential Refrigeration UA STAR	1.5
UAT 292	Pipefitting Layout	1.5
UAT 293	Commercial Refrigeration UA STAR	1.5
UAT 294	Plumbing Service	1.5
UAT 295	UA STAR Plumbing Review	1.5
UAT 296	UA STAR HVACR Review	1.5
UAT 297	Sprinkler Fitter UA STAR	1.5
UAT 298	UA STAR Pipefitting Review	1.5
UAT 299	ATR Refresher Training	1.5
UAT 320	History of the Labor Movement	1.5
UAT 321	Labor History and the UA: 1920 to Present	1.5
UAT 325	Industrial Rigging	1.5
UAT 351	Plumbing Codes	1.5
UAT 358	Cross Connection Control	1.5
UAT 362	Valve Repair Recertification	1.5
UAT 367	Advanced Air and Water Analysis	1.5
UAT 369	Advanced Residential Training	1.5
UAT 390	Operation of a UA Training Program	1.5
UAT 391	Coordinators' Yearly Update	1.5
UAT 393	Canadian Coordinators' Update	1.5
UAT 395	UA Administrative Resources	1.5
UAT 397	Coaching Students with Challenges	1.5

Discontinued Courses

Course	Title	Credit
ACS 101	Student Success Seminar	1
ARC 100	Specifications	1
ARC 227	Estimating Construction Costs	3
ARF 115	Classic Auto Restoration I	4
ARF 117	Classic Auto Restoration II	4
ARF 215	Classic Auto Restoration III	4
ARF 217	Classic Auto Restoration IV	4
ART 105	Drawing in Europe	3
ASV 120	Engine Performance Recertification	1
ASV 156	Electrical Systems Recertification	1
ASV 177	Recertification in Brakes	1
BMG 208	Principles of Management	3
CCP 220	Care and Development of Infants and Toddlers	3
CCP 230B	Heads Up! Reading - Part B	1
CNT 231	Administering Microsoft Windows 2003 Active Directory	4
CNT 261	Planning a Windows Server 2003 Network	4
DAN 130	Dance for Musical Theater	2
DRA 167	Theatre Production	2
DRA 180	Theatre Appreciation	3
DRA 220	Playwriting	3
EDU 100	Paraprofessional Roles and Responsibilities	3
EDU 101	Assisting in Reading and Writing Instruction	3
EDU 102	Assisting in Mathematics Instruction	3
EDU 103	Special Issues in Paraprofessional Practice	3
ENG 067	Advanced ESL Writing	4
GDT 201	Technical Graphics	4
GDT 222	Commercial Illustration	4
GDT 236	Specialized Study	2-4
GDT 260	Animated Graphics: Flash	4
GEO 103	Cultural Geography	3
HSC 200	Advanced Nursing Assistant Skills	5
HSC 200A	Advanced Nursing Assistant Skills Part I	3
HUM 190	Third Cinema	3
INP 280	Web Content Management	4
MTH 165	Health Science Math	3
MTH 210	Algebra for Elementary Teachers	4
MUS 108	Musical Theatre Performance	1
MUS 111	Contemporary Jazz Combo	2
MUS 137	Gospel Piano and Choir Directing	3
MUS 143	Music Composition and Arranging	2
MUS 149	Ear Training	2
MUS 157	Jazz Improvisation	2
MUS 207	Introduction to American Musical Theatre	2
MUS 225	Drums: Beginning Jazz/Rock	2
MUS 281	Voice IV -Jazz and Improvisational Voice	3
NUR 201	Transition for LPNs	3
PET 100	Power Equipment Repair I	3
PET 110	Power Equipment Repair II	3
PET 120	Power Equipment Repair III	3
PET 130	Power Equipment Repair IV	3
PHL 102	History of Philosophy	3
PHL 120	Philosophy of Work	3
REA 040	Elements of Reading	6
REA 041	Elements of Reading, Writing, & Numerical Reasoning II	6
REA 050	Reading Comprehension I	4
REA 051	Reading Comprehension II	4
SPN 117	Spanish Immersion I	6
SPN 213	Second Year Spanish I	3
SPN 217	Spanish Immersion II	6

Reactivated Courses

Course	Title	Credit
ABR 114	Applied Auto Body Welding	2
CIS 238	PC Assembly Language	3

New Programs

Program Title	Program Code	Degree/Certificate
Advanced Manufacturing	CTAMFG	Certificate
Collision Repair Refinish Technician	CVCRRT	Advanced Certificate
Collision Repair Technician	CVCLRT	Advanced Certificate
Custom Auto Body Technician	CVCABT	Advanced Certificate
Custom Fabrication and Chassis Design	CVCFCD	Advanced Certificate
Exercise Science	ASESCI	Associate in Science Degree
Interior Design	APIDN	Associate in Applied Science Degree
Motorcycle Service Technology I	CTMST1	Certificate
Motorcycle Service Technology II	CVMST2	Advanced Certificate
Police Academy	CTPA	Certificate

Discontinued Programs

Program Title	Program Code	Degree/Certificate
Computer Information Systems Transfer	AACIST	Associate in Arts Degree
Computer Networking Operating Systems II	CVCNO2	Advanced Certificate
Manufacturing and Industrial Computing	CTMIC	Certificate
Paraprofessional Portfolio Preparation	CTPAPP	Certificate
Power Equipment Technology	CTPEQ	Certificate
XML Data Analysis	CTXDA	Certificate
XML Programming	CVXPR	Advanced Certificate

Program Changes: changes in title, code, and degree/certificate awarded

This list does not include changes in program requirements.

Previous Code	Title	Current Code	Title
CVVBC	.Net Programming with Visual Basic and C#	CVNETP	.Net Programming
CFCR	Collision Repair	CTAUBR	Auto Body Repair
CPWDD	Web Database Developer	CVWDDV	Web Database Developer*
CTFLPW	Fluid Power	CTFPOW	Fluid Power

** The Web Database Developer program has been changed from a post-associate certificate to an advanced certificate.*

Personnel

In this section

Executive Officers 280

Deans 280

Faculty/Professional Staff 281

Program Advisory Committees 294

Personnel

This is a partial list. For a comprehensive list of personnel, refer to the WCC Staff Directory.

Executive Officers

Whitworth, Larry L. **1998**
President
B.A. - Adrian College
M.B.A. - Duquesne University
Ed.D. - University of Pittsburgh

Hardy, Steven **2001**
Interim, Vice President of Administration and Finance
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University

Palay, Roger **1975**
Vice President for Instruction
B.S. - University of Chicago
M.S. - University of Wisconsin

Blakey, Linda S. **1988**
Associate Vice President of Student Services
B.S. - University of Michigan
M.S. - University of Nevada at Las Vegas
M.A. - University of Michigan

Flowers, Damon **1994**
Associate Vice President of Facilities Development and Operations
B.S. - Lawrence Technological University
M.S. - Central Michigan University

Kruzel, Douglas P. **2001**
Associate Vice President of Human Resources
B.S. - University of Toledo
M.B.A. - University of Toledo

Lawson, Wendy **2003**
Associate Vice President of Development, Grants and Governmental Relations
B.A. - University of Michigan
M.B.A. - Eastern Michigan University

Ladha, Aminmohamed J. **1995**
Chief Information Officer
B.S. - Eastern Michigan University
M.B.A. - Eastern Michigan University

Deans

Abernethy, Bill **1993**
Dean of Humanities and Social Sciences
B.A. - University of Oregon
M.A. - University of Oregon
Ph.D. - University of Wisconsin

Byrne, Cheryl **2002**
Dean of Distance Learning
B.S. - Ohio State University
M.B.A. - Pepperdine University
Ph.D. - Claremont Graduate University

Dries, Cathie **1989**
Dean of Continuing Education and Community Services
A.A. - Delta Community College
B.A. - Michigan State University
M.A. - Central Michigan University

Greene, Bruce **2006**
Dean of Vocational Technologies
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Harmon, Martino **2007**
Dean of Admission, Retention, and Student Life
B.B.A. - University of Toledo
M.E.D. - University of Toledo

Lee, Granville W. **1990**
Dean of Health and Applied Technologies
B.S. - New York University
M.B.A. - University of Dayton
Ed. Spec. - Wayne State University

Liu, Victor **1991**
Dean of Learning Resources
B.A. - University of South Carolina
M.A. - Michigan State University
M.I.L.S. - University of Michigan

Showalter, Martha **1980**
Dean of Math, Natural and Behavioral Sciences
B.S. - Ohio State University
B.A. - Ohio State University
M.Ed. - University of Houston

Taylor, Patricia A. **2002**
Dean of Academic Placement, Counseling, and Support Services
B.A. - Central Michigan University
M.A. - Central Michigan University
Ed.D. - Eastern Michigan University

Wilson, Rosemary **1986**
Dean of Business and Computer Technologies
B.S. - Milligan College
M.B.A. - University of Notre Dame

Faculty/Professional Staff

Abella, Mohammed **1999**
Faculty: Mathematics
B.S. - University of Bradford, England
M.S. - University of Miami
Ph.D. - University of Miami

Abrams, Terry **1990**
Faculty: Visual Arts
B.F.A. - Maryland Institute College of Art and Design
E.D.M. - Boston University
Certificate - Agfa-Gevaert

Adler, Sally **1993**
Faculty: Behavioral Science
B.S. - Pennsylvania State University
M.S. - Pennsylvania State University
Certificate - PA Dept of Education

Aeilts, Larry **1999**
Registrar
B.B.A. - Cleary College
M.S. - Walsh College

Albach, Suzanne **2007**
Faculty: Physical Sciences
B.A. – Bowling Green State University
B.S. - Eastern Michigan University
M.S. – Mississippi State University

Aldrich, Michael **2004**
Systems Administration Manager
B.S. – University of Illinois- Champaign-Urbana
M.S. – University of Florida

Allison, Lynn M. **1988**
Faculty/Department Chair: Business Office Systems
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University
M.B.E. - Eastern Michigan University

Amstutz, Susan **2007**
Graphic Designer Sprinkler Fitter Program
A.A. - Washtenaw Community College
B.A. - University of Michigan

Anders, Derek F. **1999**
Helpdesk Specialist
A.A. - Lansing Community College
A.A. - Washtenaw Community College
Certificate - Washtenaw Community College

Anderson, Laurice A. **1998**
Faculty: Performing Arts
B.A. - Butler University
M.F.A. - University of Michigan

Arnett, Bonnie **2006**
Faculty: Reading
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Atkinson, John H. **1997**
Faculty: Public Service Training
B.A - University of Michigan
J.D. - Detroit College of Law
M.P.A. - Eastern Michigan University

Avinger, Charles **1992**
Faculty: English/Writing
B.S. - University of Alabama
M.A. - University of Alabama

Babcock, H. Lind **1994**
Faculty: Visual Arts Technology
B.F.A. - Michigan State University
M.A. - Central Michigan University
M.F.A. - Kent State University

Bai, Jing **2005**
Systems Analyst I
B.S. – Beijing Shifan University
M.S. – University of Detroit Mercy

Bailey, Rosanne **2003**
Annual Fund Manager
B.A. - Purdue University

Baker, Jennifer L. **1995**
Faculty/Department Chair: Visual Arts Technology
A.D. - Washtenaw Community College
B.A. - University of Michigan
M.F.A. - Rhode Island School of Design

Baker, Mark E. **1994**
Firearms Range Master
A.D. - Henry Ford Community College

Ballard, Bayyinah **2007**
Assistant Director Financial Aid
A.D. - Davenport University
B.B.A. - Davenport University

Barrie, Maryam **2002**
Faculty: English/Writing
A.A. - Washtenaw Community College
B.A. - University of Michigan
M.A. - Eastern Michigan University

Barsch, Rachel **2006**
Events Coordinator
B.S. - Eastern Michigan University

Bartha, Paula **2001**
Career Education Coordinator
B.S. - Wayne State University

Batell, Mark F. **1984**
Faculty: Mathematics
B.A. - Knox College
M.A. - University of Michigan

Bayer, Deborah K. **1994**
Faculty: English/Writing
B.A. - Michigan State University
M.A. - Michigan State University

Beauchamp, Jillaine **1976**
Faculty: Culinary and Hospitality Management
B.S. - Eastern Michigan University
M.S. - University of Michigan

Benin, Michelle **1998**
Labor and Employment Relations Specialist
C.L.R.P. Certificate – Certified Labor Relations Professional – Michigan State

Bennett, Victoria **2006**
Academic Administrative Associate
B.S. - Grand Valley State University

Bhattacharyya, Nilotpal **1999**
UNIX Administrator
B.M.S. - University of Gaubati

Bieszk, Rita **1999**
Purchasing & Budget Analyst

Bishop, Todd **2001**
Construction Project Manager
Management Certificate - State of Michigan

Blair, Dena **2006**
Faculty: Communication and Broadcast Art
B.A. - Adrian College
M.A. - Eastern Michigan University
Certificate - Specs Howard School of Broadcast Arts

Bogue, Robert A. **1984**
Instructional Lab Assistant: Automotive Services
A.D. - Washtenaw Community College
B.S.Ed. - University of Michigan
Certificate - State of Michigan
Certificate – ASE Master Automobile Technician

Bracco, Patrick **2000**
Systems Development Manager
B.S.E. - University of Michigan
M.S.E. - University of Michigan

Brandenburg, Elaine M. **1997**
Program Manager
B.S. - Michigan State University

Brown, Kate M. **1988**
Student Resources/Women's Center Specialist II
A.D. - Washtenaw Community College
B.S.W. - Eastern Michigan University
M.S.W. – Eastern Michigan University

Brunt, Jennifer **2000**
Human Resource Management Associate
A.D. - Washtenaw Community College

Burgen, Clarence **1997**
Mechanical Systems/Electrical Services Manager

Burke, Starr **2000**
Faculty/Department Chair: Behavioral Sciences
B.A. - Wayne State University
M.A. - Eastern Michigan University
Ph.D - California Coast University

Butcher, Kathleen **1989**
Faculty/Department Chair: Physical Science
B.S. - St. Mary's College
M.S. - Wayne State University

Byers, Nancy **2005**
Student Voice Coordinator
B.A. – North Central College
M.S. – Northwestern University

Byrd, Soyini **2005**
Payroll Manager
B.S. – Madonna University
M.S.M. - Walsh College

Chatas, Kristin **2001**
Faculty/Department Chair: Mathematics
B.A.Ed. - University of Michigan
M.A. - University of Notre Dame

Cheiman, Dina **2003**
Faculty/Program Director: Pharmacy Technology
B.S. Ferris State University
Ph.D. Ferris State University

Chiappetta, Lorraine **2003**
Faculty: Nursing
B.S.N. College of New Jersey
M.S.N. State University of New York - Buffalo
R. N. The State of Michigan

Chisholm, Arnett **1988**
Counselor: Counseling, Career Planning and Placement
B.S. - University of Michigan
M.A. - Eastern Michigan University

Clark, Diana **1989**
Counselor: Humanities and Social Sciences
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Cleary, William T., Jr. **1983**
Faculty: Electricity/Electronics
A.S.E.E.T. - University of Maine
B.E.E.T. - University of Maine
M.B.A. - University of Maine

Cocco, Richard **2000**
Classroom Technology Coordinator
A.D. - Washtenaw Community College

Concannon, Breege **2003**
Faculty: Physical Sciences
B.S. - University of Ulster - Northern Ireland
Ph.D. - University of South Carolina

Cook, Kathleen **2006**
Faculty: Clinical Instructional Physical Therapy
B.S. - Simmons College
Doctorate - Simmons College
Certificate - Physical Therapy

Crean, Patricia K. **1996**
Director Lifelong Education
B.A. - Western Michigan University
M.A. - Michigan State University

Croake, Edith M. **1966**
Faculty: English/Writing
B.A. - University of Michigan
M.A.T. - Northwestern University
M.A. - Northwestern University
D.A. - University of Michigan

Crosby, Eric **2006**
Instructional Lab Assistant: HVAC
A.A.S. - Washtenaw Community College
Certified Instructor - Air Conditioning Contractors of America
HVAC Excellence Technician Certification

Crudup, Denise **2006**
Faculty/Department Chair: Reading
B.S. - Eastern Michigan University
M.A. - College of St. Catherine
M.A. - Eastern Michigan University

Currie, Kathy **1989**
Enrollment Services Manager
A.D. - Washtenaw Community College

Czinski, Margo **1999**
Faculty: English/Writing
B.A. - Michigan State University
M.A. - University of Michigan

Daniels, Cheryl **1990**
Employment Specialist
A.A. - Schoolcraft College
B.A. - Concordia College

Dedhia, Hiralal **1987**
Faculty: Health Science
A.D. - Washtenaw Community College
B.S. - University of Poona
M.S. - Madonna University

Deinzer, Carol **1999**
Faculty: Culinary and Hospitality Management
A.C. - Monroe County Community College
B.A. – Concordia University
CEPC- American Culinary Federation

Dickert, Tyson **2006**
IT Support Specialist
A.A.S. - Washtenaw Community College
A.A.S. - Washtenaw Community College
Certificate - Microsoft Professional

Do, Khiet **2005**
Instructional Lab Assistant: Industrial Technology
B.S. – Eastern Michigan University

Donahey, Jeffrey **1984**
Faculty: Industrial Technology
B.S. - University of Michigan

Downen, Gary W. **1983**
Faculty/Department Chair: Electricity/Electronics
B.G.S. - University of Michigan
M.A. - Eastern Michigan University

Downey, Patrick **1994**
Conference Services Manager

Dubiel, Theresa **2006**
Faculty: Nursing Childbearing Family
B.S.N. - Michigan State University
M.S.N. - Michigan State University

Eby, David **1999**
IT Support Specialist
A.S. - Northwestern Michigan College
B.S. - Lake Superior State University

Eccleston, Gloria
Manager COD and Special Projects
A.A.S - Washtenaw Community College
B.B.A. - Cleary University

Egan, James **1989**
Faculty: Mathematics
B.A. - Case Western Reserve University
B.S. - Case Western Reserve University
M.S. - University of Michigan
M.S. - University of Michigan

Elliott, Joanna **2006**
E-Learning Projects Coordinator
A.A. - Washtenaw Community College
B.S. - Eastern Michigan University

Ennes, Steven M. **1987**
Faculty/Department Chair: Business/Accounting
A.A.S. - Macomb Community College
B.S. - Western Michigan University

Everin, William J. **1997**
Research Analyst
B.S. - Northwestern University
M.S. - Purdue University

Faulkner, Mary K. **1983**
Administrative Assistant to the Board of Trustees
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Fauri, Greta **1977**
Student Services Advisor: Children's Center
B.A. - Adrian College

Fayaz, Amir **2000**
Faculty: Physics
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Fenty, Joseph **1999**
Director Entry Assessment and Academic Testing
B.B.A. - Pace University
M.A. - University of Michigan
M.A. - University of Northern Iowa

Ferguson, Russell **2000**
Faculty: Automotive Services
B.S. - Central Michigan University
M.L.S. - Eastern Michigan University
A.S.E. - Certified Master Automobile Technician

Ferrario, Nancy **2007**
Faculty: Foreign Languages
B.A. - St. Louis University
M.A. - St. Louis University

Fillinger, Barbara **2001**
Director Budget, Purchasing, and Auxiliary Services
B.S. - Oakland University
M.S. - Walsh College

Figg, William **1972**
Faculty/Department Chair: Welding and Fabrication
A.D. - Washtenaw Community College

Fitzpatrick, David J. **1996**
Faculty: Social Science
B.S. - United States Military Academy
A.M. - University of Michigan
Ph.D - University of Michigan

Flack Jr., Joseph L. **1990**
Faculty: Business/Accounting
B.A. - Eastern Michigan University
M.B.A. - University of Detroit
J.D. - Detroit College of Law

Foster, Brenda **1997**
Faculty: Mathematics
A.A. - Seattle Central Community College
B.A. - University of Washington
M.A. - University of California

Foster, Connie S. **1990**
Faculty/Department Chair: Allied Health/Radiography
A.D. - Washtenaw Community College
B.S. - Central Michigan University
M.A. - Eastern Michigan University

Galea, Michael **1998**
Faculty: Computer Information Systems
B.S. - Wayne State University
M.A. - Wayne State University

Galvin, Ralph H. **1984**
Director Public Service Training
B.S. - Nazareth College

Garcia, Anne **2002**
Faculty: Behavioral Sciences
B.S. - California State University - Fresno
B.A. - California State College - San Bernardino
M.S. - San Diego State University
Ph.D. - University of California, San Francisco

Garrett, Joy L **2007**
Director, Curriculum and Assessment
B.S. - Ohio University
M.S. Ed - The University of Toledo

Garey, Michelle **2001**
Faculty/Department Chair: Foreign Languages
B.A. - University of Michigan - Flint
M.A. - Ohio State University

George-Sturges, Cassandra **2003**
Faculty: Behavioral Sciences
M.A. - Eastern Michigan University
M.A. - Wayne State University
Psy. D. - California Coast University

Gerlitz, Frank **1991**
Faculty: Mathematics and Physics
B.S. - University of Wisconsin
M.S. - University of Wisconsin
Ph.D. - University of Wisconsin

Geyer, Philip **1998**
Faculty: Computer Information Systems
B.S. - University of Michigan
M.S. - University of Michigan

Ghrist, William **1994**
Facilities Systems Analyst
A.A.S. - Washtenaw Community College
Builders License – State of Michigan

Gibson, Maxine **1990**
Faculty: English/Writing
B.S. - Eastern Michigan University
M.A. - University of Michigan

Glass, Michael K. **1991**
Student Services Advisor: Club Sports
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University
M.S. - Eastern Michigan University

Glowski, Susan K. **1988**
Faculty: English/Writing
B.A. - Beloit College
M.A. - San Francisco State University

Glushyn, Diana R. **1979**
Supervisor Clerical Services

Gmeiner, Mary **2002**
Labor and Employee Relations Director
B.B.A. - Saginaw Valley State University
M.S. - Central Michigan University
S.P.H.R. Certificate - Senior Professional Human Resources
C.L.R.P. Certificate – Certified Labor Relations Professional – NPELRA

Goldberg, David **1977**
Faculty: Mathematics
B.S. - University of Michigan

Goodman, Gregory **2005**
Lead Safety and Security Officer

Gottschang, Kelley **2004**
Faculty/Department Chair: Internet Professional
B.S. – Eastern Michigan University
M.A. – Wayne State University

Gracie, Cheryl D. **1989**
Faculty: Business/Accounting
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University
J.D. - University of Oregon
Attorney - State of Michigan
C.P.A. - The State of Michigan
RCC - Registered Corporate Coach

Gray, Fiona **2004**
Supervisor Student Payment Plans and Collections
Diploma - University of Strathclyde

Greashaber, Anne L. **1997**
Professional Services Personnel: Adult Transitions
B.A. - University of Michigan
M.A. - University of Michigan

Greaves, Valerie **2007**
Faculty: Clinical Instructor: Nursing and Health Science
B.S.N. - Eastern Michigan University
M.S.N. - Madonna University
Certificate - State of Michigan

Green, Deidre **2006**
Faculty: Clinical Instructor: Dental
A.A. - Washtenaw Community College
CDA - Dental Assisting National Board
RDA - Michigan Board of Dentistry

Green, Margaret **2001**
Faculty: English/Writing
B.A. - University of Michigan

Griffin, Ian **2007**
Director Student Development and Activities
B.A. - College of the Holy Cross
M.A. - Fitchburg State College

Griffith, Michael **2000**
Coordinator UA/Target Marketing
B.A. - University of Toledo

Grimes, William L. **1991**
Faculty: Business/Accounting
B.A. - University of Southern California
M.A. - University of Michigan
M.B.A. - University of California - L.A.

Groce, Kimberly **1999**
Counselor: Student Resources/Women's Center
B.S.W. - University of Detroit
M.A. - Eastern Michigan University
L.P.C. - State of Michigan

Grossman, Esta **1975**
Faculty/Department Chair: Life Sciences
B.A. - Pembroke College in Brown University
M.A. - The City College of New York
M.S.W. - University of Michigan

Grotrian, Paulette **1980**
Faculty/Department Chair: Humanities
B.A. - Valparaiso University
M.A. - Valparaiso University
M.A. - Eastern Michigan University

Guastella, C. Dennis **1980**
Faculty: Visual Arts Technology
A.A. - Macomb County Community College
B.F.A. - Wayne State University
M.F.A. - Eastern Michigan University

Gudsen, Neil **2000**
Program Manager: CIS/BOS
B.A. - University of Michigan
J.D. - University of Detroit

Guerrero, Debra **2002**
Director Learning Support Services
B.A. - Wayne State University
M.A. - California State University, San Bernardino
LPC - State of Michigan
Certification - Rehabilitation Counselor

Hackmann, Bruce **1999**
Faculty: Humanities
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Hageman, Rebecca **2000**
IT Support Specialist
A.A.S. - Washtenaw Community College
B. B. A. - Cleary College

Hagen, Trudi **2003**
Director Children's Center
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Hagood, Robert M. **1997**
Faculty: Physical Science
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Halliday, Geoffrey B. **1997**
Network Administrator
A.D. - Washtenaw Community College

Hammond, Linda **1987**
Director Business and Industry Services
B.A - University of Michigan
M.A. - University of Michigan

Harris, Sally D. **1981**
Counselor: Counseling/Career Planning
A.D. - Washtenaw Community College
B.A. - Concordia College
M.A. - Eastern Michigan University

Hasselbach, Clarence **2000**
Faculty/Department Chair: Computer Information Systems
B.S. - Michigan State University
M.S. - University of Southern California
M.A. - University of California Berkeley

Hatcher, Robert **2000**
Faculty: Mathematics
B.A. - University of Michigan
M.S. University of Michigan

Hatcher, Ruth **1981**
Faculty: English/Writing
A.B. - Earlham College
M.A. - University of Michigan

Hawkins, Janet L. **1977**
Coordinator Public Information
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University
M.A. - Eastern Michigan University
A.P.R. - Public Relations Society of America

Heidebrink, Gregg S. **1995**
Faculty: Social Science
B.A. - Iowa State University
M.A. - Southern Methodist University

Heise, Anne E. **1993**
Faculty: Life Sciences
B.A. - Swarthmore College
M.S. - University of Vermont

Hemsteger, Thomas **1991**
Faculty: Automotive Services
A.A.S.- Ferris State University
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Herrera, Terri **2002**
Faculty/Department Chair: Culinary and Hospitality Management
B.A. - Siena Height College
M.S. - Eastern Michigan University

Hill, Patricia **2005**
Faculty: Physical Therapist Assistant Program
M.A. – University of Michigan
B.S. – University of Michigan

Holland, Jacob **2004**
Faculty: Welding/Fabrication
A.S. - Washtenaw Community College
B.S. – Cleary University
A.W.S. Certificate - Welding Inspector
A.W.S. Certificate - Welding Educator

Hommel, Judith C. **1992**
Executive Associate to the President
A.A. - Cottey Junior College
B.S. - University of Oklahoma
B.F.A. - Eastern Michigan University

Hosier, Deborah **2000**
Manager Student Accounting
B.B.A. - Cleary College

Hoth, Bradley **1987**
Professional Services Personnel: Vocational Technology
A.A. - Henry Ford Community College
B.A. - Michigan State University
M.A. - Eastern Michigan University

Howard, Nancy **2001**
Continuing Education Program Manager
A.A. - Niagara County Community College
B.S. - Buffalo State College
M.S. - Buffalo State College
Ed. Sp. - University of Missouri-Columbia

Hughes, Patrick **1998**
Manager Network and Communications
A.S. - Henry Ford Community College
B.S. - Madonna College

Hurns, Kimberly **2003**
Faculty: Business
B.B.A. - Eastern Michigan University
M.B.A. - Loyola University

Jackson, Jennifer **2002**
Faculty: Communications
B.A. - Concordia University
M.S. - Eastern Michigan University

Jackson, Lawrence **1998**
Laboratory Instructor: Public Service Training
B.S. - Wayne State University
M.S. - Michigan State University
Certificate - State of Michigan

James, William E. **1994**
Faculty: English/Writing
B.A. - University of Michigan
M.A. - Wayne State University

Jemison, Harriette **2002**
Faculty: Behavioral Sciences
B.A. - Tuskegee University
M.A. - Loyola University - Chicago

Jenkins, Joyce **1998**
IT Training and Support Specialist
B.S. - Michigan State University
M.L.S. - Eastern Michigan University

Jett, Sukanya J. **1992**
Assistant Director Enrollment Services
A.A. - Cottey Junior College
B.A. - Radford University
M.S.A. - Central Michigan University

Ji, Shiping **1999**
Database Administrator
B.S. - Eastern Michigan University
Certified Database Administrator- Oracle7.3
Certified Database Administrator- Oracle8

Jindal, Usha R. **1982**
Faculty: Computer Instruction
B.S. - Delhi University
B.S. - Pennsylvania State University
M.S. - Pennsylvania State University

John, Susan **2005**
Curriculum and Assessment Technician
B.A. – Western Michigan University

Johnson, Charles **1998**
Faculty: Humanities
B.A. - Oakland University
M.A. - Michigan State University
Ph.D. - Michigan State University

Johnson, Kenneth **2006**
Record Drawings Coordinator
A.D. - Washtenaw Community College
A.D. - Western Michigan University

Johnston, Mark **1990**
Faculty: Business/Accounting
B.B.A. - Eastern Michigan University
M.S. - Walsh College

Johnson, Paul **2007**
Faculty: HVACR
B.D. - University of Toledo
M.R.D. - University of Toledo

Jordan, Cole L. **1978**
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.A. - Wayne State University
M.A. - Eastern Michigan University

Jorgensen, Melanie **2005**
Safety Compliance Manager
B.A. – University of Michigan
OSHA Specialist Certification - Occupational Health & Safety

Jozwik, Deborah L. **1998**
IT Support Specialist
A.D. - Washtenaw Community College

Kalmbach, John **2000**
Director Media Services
B.A. - University of Toledo
M.Ed. - University of Toledo
Ed.D. - University of Toledo

Kapp, George **1970**
Faculty: Physical Science
A.D. - Washtenaw Community College
B.S.E. - University of Michigan

Keller, Laurel **2002**
Distance Learning Coordinator
B.A. - Michigan State University

Kennedy, Bethany **2007**
Director Access Services
B.S. - Eastern Michigan University
M.L.I.S. - Wayne State University

Kerr, John **1993**
Faculty: Social Science
B.S.Ed. - Central Michigan University
M.A. - Western Michigan University
M.A. - Western Michigan University

Kier, G. Daniel **2001**
Faculty: Visual Arts Technology
B.A. - Michigan State University
M.A. - Eastern Michigan University

Kilgore, Robert **2002**
Instructional Lab Assistant: Electricity/Electronics
A.S - Washtenaw Community College

King, Linda **1998**
Director Special Community Group Education
B.A. - University of Michigan
M.A. - University of Michigan

King, Michael **2002**
Faculty: Mathematics
B.A. - Western Michigan University
M.Ed. - Wayne State University

Kish, Glenn **2003**
Systems Analyst III
B.B.A. - University of Toledo

Kissel, Julie **2004**
Faculty: English/Writing
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Knox, Thomas **2003**
Infrastructure Technician
A.A.S - Washtenaw Community College

Komarmy, Tracy L. **1993**
Faculty/Department Chair: Performing Arts
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Krantz - Fischer, Carrie **1992**
Faculty/Department Chair: English/Writing
B.S. - Edinboro University of Pennsylvania
M.A. - Bowling Green State University

LaHote, Randy **1992**
Faculty/Department Chair: Social Science
B.A. - University of Toledo
M.A. - University of Toledo

LaPointe, Cheryl **2003**
Compensation Specialist
A.A. - Monroe County Community College
B.A. - Spring Arbor University
PHR Certificate - Society for Human Resource Management

Lawrence, John **2003**
Faculty: Performing Arts

Lecz, Alan **2007**
Regional Director Innovation Centers
B.S.E. - University of Michigan

Lee, Michael N. **1998**
Coordinator Business Division Computer Labs
A.A. - Washtenaw Community College

Lewis, James **2000**
Faculty: Electronics
B.S. - Southern Illinois University
M.A. - Eastern Michigan University
CISSP, CCNA, CCAI, CEH, CCE Computer Systems Technology- Keesler School of Applied Aerospace Science
Graduate Certificate- Oregon State University- Computer Forensics

Lindemann, Cristy **2006**
Faculty/Department Chair: Construction Institute Programs
B.S. - Eastern Michigan University

Lippens, Joan **1993**
Faculty: Academic Skills
B.A. - Queen's University, Kingston
B.Ed - Queen's University, Kingston
M.A. - Eastern Michigan University

Lockard, John M. **1970**
Faculty: Humanities

Lozano, Birgitte **1986**
Treasury Manager
B.A. - University of Michigan
C.T.P. - Association of Finance Professionals

Lu, Yin **1994**
Faculty: Mathematics
B.S. - National Taiwan University
M.S. - National Taiwan Normal University
Ph.D. - State University of New York, Buffalo

Lukiewski, Linda **2000**
Faculty: Nursing
A.D.N. - Henry Ford Community College
R.N.C. - The State of Michigan

Lutz, Geoffrey A. **1986**
Systems Analyst III
B.S. - University of Michigan

Lyjak, Laura A. **2000**
Public Relations and Marketing Services Editor/Writer
B.A. - University of Michigan
M.A. - Eastern Michigan University

MacGregor, Sherry S. **1994**
Faculty: Nursing
B.S.N. - University of Michigan
M.S.N. - Wayne State University
Diploma - Henry Ford Hospital School of Nursing

Mann, John B. **1971**
Faculty/Department Chair: Automotive Services
B.S. - Eastern Michigan University
M.A. - University of Michigan
A.S.E. - National Auto Technical Certification

Manoukian, Lisa **2006**
Faculty: Mathematics
B.S. - University of Michigan - Dearborn
M.A. - Oakland University

Mansour, Khaled **2000**
Faculty: Computer Information Systems
M.S. - Western Michigan University
B.S. - Yarmouk University

Marinkovski, Elizabeth **1999**
Human Resource Management Specialist
A.D. - Washtenaw Community College
B.A. - Eastern Michigan University

Markell, Dawn **2005**
Northern Area Coordinator
B.S. - Ferris State University
M.S.A. - Central Michigan University

Maroney, Laurie **2003**
Continuing Education Program Manager-Apprenticeships/Business
A.A. - Washtenaw Community College
B.B.A. - Eastern Michigan University

McCarthy, Sandra **1999**
Librarian: Learning Resource Center
B.A. - Wayne State University
M.L.S. - Wayne State University
M.A. - University of Detroit Mercy

McClure, Pamela **1996**
Inventory Control Supervisor
A.D. - Washtenaw Community College
B.A. – Siena Heights University

McCracken, Alexandra **2000**
Coordinator MPOD
A.D. - Washtenaw Community College
B.B.A. - University of Michigan, Flint

McCrory, Carrie **2007**
Financial Aid Specialist
B.A. - Michigan State University
B.S. - Eastern Michigan University

McGee, Eugene **2006**
Security Patrol Officer

McGraw, Michael **1993**
Faculty: Drafting
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

McGuire, Belinda G. **1988**
Faculty: Drafting
A.S. - Monroe County Community College
B.F.A. - Eastern Michigan University
M.Ed. - University of Toledo

McKeown, Alice Elaine **2005**
Faculty: Nursing-Medical Surgical
B.S. – William Jewell College
M.S. – University of Michigan

McLean, Nicole **2004**
Instructional Lab Assistant: Welding/Fabrication
B.F.A. – Center for Creative Studies

McPherson, Paul D. **1990**
Faculty: Culinary and Hospitality Management
B.A. - Madonna College
M.S.A. - Central Michigan University
Certificate - American Culinary Federation

Mihaly, Chris **2003**
Director Compensation and Benefits
B.S. - Indiana University of Pennsylvania
PHR Certificate - Society for Human Resource Management

Miller, Jean **1989**
Faculty: English/Writing
B.A. - Marygrove College
M.A. - University of Tulsa

Mikkelson, Shawn **2004**
Accountant
Certificate - Washtenaw Community College

Morningstar, Melissa **2006**
Faculty: Nursing
B.S.N - Madonna University
M.S.N. - Madonna University
M.S.B.A. - Madonna University

Morris, Aveia **2002**
Tech Prep Articulation Coordinator
B.A. - Metropolitan State University
M.P.A - University of Michigan, Dearborn
M.A. - University of Michigan, Dearborn

Mourad, Roger **1996**
Director Institutional Research
B.A. - University of Michigan
J.D. - University of Michigan
M.S. - University of Michigan
Ph.D. - University of Michigan

Naylor, Michael L. **1994**
Faculty: Performing Arts
B.M. - University of Miami
M.M. - University of Miami
M.A. - University of Michigan
Ph.D. - University of Michigan

Nelson, Lisa **2002**
Curriculum Analyst
B.A. - Marygrove College

Nelson, William H. **1992**
Clinical Instructor: Allied Health/Radiography
A.D. - Washtenaw Community College
B.S. - Western Michigan University
M.A. - University of Michigan

Nestorak, Theresa **1989**
Faculty: Nursing
B.S.N. - University of Michigan
REGIS - State of Michigan
M.S.N. - Eastern Michigan University
Certificate – Adult Nurse Practitioner

Nevers, William B. **1975**
Faculty/Department Chair: Life Sciences
B.S. - Wayne State University
D.D.S. - University of Michigan School of Dentistry

Norwood, Mimi Y. **1993**
Faculty: Behavioral Sciences
A.D. - Washtenaw Community College
B.S. - Wayne State University
M.S.W. - University of Michigan
M.A. - Morehead State University

Ong, Boon Neo Juliana **1992**
Systems Analyst II
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University
Oracle Certified Application Developer, Oracle Developer Release 2 - Oracle Corp
Oracle Certified Internet App. Developer, Oracle Developer Release 6/61- Oracle Corp.

Orbits, Elizabeth **2001**
Manager Student Resources/Women's Center
B.A. - University of Michigan
M.A. - Eastern Michigan University
M. A. - Eastern Michigan University
LPC- State of Michigan
NCC- National Board for Certified Counselors

Ortega, Maria **1992**
Faculty: Behavioral Sciences
B.S. - Central Michigan University
M.A. - Michigan State University

Ortiz, Joe **2006**
Instructional Lab Assistant: Auto Body/Collision Repair

Ostrosky, Elizabeth **2006**
Human Resource Management Associate
A.G.S. - Washtenaw Community College

Ostrowski, Arista **2003**
Financial Aid Coordinator
A.G.S. - Washtenaw Community College
B.B.A. - Cleary University

Paas, Cecilia **1998**
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University
License - State of Michigan

Painter, Corinne **2006**
Faculty: Humanities/Philosophy
A.D. - Bellevue Community College
B.A. - Seattle University
M.A. - Ohio University
Ph.D. - Loyola University

Pardon, Joshua **2000**
Coordinator Campus Events & Media Production
B.S. - Eastern Michigan University

Parker, Karen J. **1989**
Manager Accounting
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Pawloski, Judith A. **1994**
Faculty: Nursing
B.S.N. - Wayne State University
M.S.N. - Wayne State University
Diploma - Mercy School of Nursing - Detroit

Peck, Joshua P. **1996**
IT Support Specialist
A.D. - Washtenaw Community College

Penird, Thomas **2000**
Faculty/Department Chair: Industrial Technology
A.T.S. - Washtenaw Community College
B.S. - Eastern Michigan University

Penner, Charles A. **2002**
Regional Director MI Small Business Development Center
B.A. - Hampshire College
M.P.P.M. - Yale University

Perez, Laura **1993**
Faculty: Mathematics
B.S. - Bowling Green State University
M.A. - Bowling Green State University

Perkins, Thornton **2002**
Faculty: Social Sciences
B.A. - Wayne State University
M.A. - California State University - Los Angeles

Petty, Dale **1994**
Faculty: Electricity/Electronics
B.S.E.E. - State University of New York at Buffalo
M.S.C.E. - Case Western Reserve

Phibbs, John **1969**
Manager Records Management
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Phillips, Robert **1998**
Network Administrator
A.D. - Washtenaw Community College

Phillips, Taghreed **2002**
Information Technology Support Specialist
B.A. – Al-Mustansiriya University

Pickel, Larry **2005**
Continuing Education Program Manager: Business
B.A. – University of Michigan
M.A. – University of Michigan

Pinnamaneni, Jagadeesh **1999**
Systems Analyst II
B.A. - Nagarjuna University, India
B.S. - University of Michigan

Popovich, James **1999**
Faculty: Industrial Technology
B.S. - LeTourneau College
M.S. - Ferris State University

Pullins, Les **2003**
Faculty: Heating, Ventilation, Air-Conditioning
A.A.S. - Ferris State University Michigan
B.A. - National Labor College
State of Michigan Licenses - Mechanical Contractor and Journey Plumber City of Dearborn
Licenses - Refrigeration Engineer first class and Stationary Engineer

Quail, Michael E. **1994**
Faculty: Mathematics
B.A. - Wayne State University
M.A. - Eastern Michigan University
M.S.W. - University of Michigan

Rader, Rosemary **1994**
Faculty: Physical Science
B.S. - University of Wisconsin-Oshkosh
Ph.D. - Purdue University

Redondo, Juan C. **1994**
Faculty: Humanities
M.A. - University Complutense - Madrid
M.A. - University of California at Berkeley
M.A. - University of Wisconsin

Reed, Tom **2000**
Manager Web Services
B.S. - Kansas State University
M.S. - University of Kansas
Ph.D. - University of Michigan

Reichert, William **2002**
Faculty: Electricity/Electronics
B.S. - Purdue University

Remaley, Dana **2003**
Systems Analyst III
B.S. - University of Michigan

Rigg, Mary Lou **2002**
Student Services Advisor: Extension Center Administration
B.S. - Eastern Michigan University

Rinke, John **1992**
Administrative Associate: Student Support, Counseling and Career Planning
B.S.Ed. - Central Michigan University
M.A. - Michigan State University
Ed.S. - Central Michigan University
Ed.D. - Western Michigan University

Rivers, Lynn **2004**
Faculty, Social Science
B.A. - University of Michigan
J.D. - Wayne State University

Robinson, Todd **1996**
Manager Building Maintenance
A.A.S. - Washtenaw Community College
B.S. - Eastern Michigan University

Rombes, Lisa **2002**
Faculty: Mathematics
M.Ed. - Penn State University
B.S.Ed. - Bowling Green State University

Roof, Rex **2000**
Unix Administrator: Information Technology

Roome, Lori **1999**
Conference Services Coordinator
B.S. - Michigan State University

Roque, Francisco **1999**
Unix Administrator

Rumsey, Krissa **2003**
Corporate Giving/Grant Writer Administrator
B.A. - Concordia University
M.S. - University of Michigan

Rush, Joseph **2002**
Faculty: Social Sciences
B.A. - Pennsylvania State University
M.A. - University of St. Andrews - Scotland
Ph.D. - University of Oregon

Salter, Vickie **1999**
Faculty: Nursing
A.S.N. - Wayne County Community College
B.S.N. - Wayne State University
M.S.N. - University of Phoenix
Ph.D. - Capella University
R.N. - State of Michigan

Schebil, Ronald **2001**
Director Safety and Security
B.B.A. - University of Michigan

Schultz, Gary L. **1984**
Faculty/Department Chair: Industrial Technology
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Scott, Kathleen **1971**
Librarian: Learning Resource
B.A. - University of Iowa
M.A. - University of Iowa

Shelton, Eleanor **2005**
Public/Community Outreach Coordinator
B.A. - Michigan State University
M.A. - Eastern Michigan University

Shepherd, Kimberly **2002**
Faculty: English
B.A. - Michigan State University
M.A.T. - Michigan State University

Shier, David **1990**
Faculty: Life Sciences
B.S. - Cornell University
Ph.D. - University of Michigan

Shuldin, Julia **2001**
Network Administrator
B.S. - Dnepropetrovsk St. University, Ukraine
M.S. – Lawrence Tech University

Shute, Michael **2007**
Faculty: Motorcycle Service

Siehl, Chris **1995**
Faculty: Behavioral Sciences
B.A. - Wittenberg University
M.A. - Northwestern University
M.S.W. - Michigan State University

Skufis, James **2006**
Clinical Instructor: Radiography
A.D. – Washtenaw Community College
B.A. – Eastern Michigan University

Smillie, Catherine **2001**
Executive Director Public Relations and Marketing
B.A. - University of Michigan
M.A. - University of Michigan

Sobbry, William (Gary) **2003**
Faculty/Department Chair: Automotive Body Repair
Mastery Certificate: Auto Repair Washtenaw Community College

Sprague, Kristina **2003**
Faculty: Dental
B.S. - Central Michigan University
C.D.A. – Dental Assisting National Board
R.D.A. – Michigan Board of Dentistry

Springstubbe, Patrick **2007**
Web Programmer II
B.S. - Lawrence Technological University

Stadtfeld, Kathleen A. **1982**
Director Educational Services
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Stafford, Kathryn **2001**
Student Services Information Officer
A.A. - Kellogg Community College
B.A. - University of Michigan
M.B.A. - Michigan State University

Stanford, Adrian **1987**
Student Services Advisor: Student Populations
B.S. - Eastern Michigan University

Strayer, Ross **1989**
Faculty: Life Sciences
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Strnad, Kathleen B. **1998**
Counselor: Math, Natural and Behavioral Sciences
B.A. - Mercy College of Detroit
M.A. - The Fielding Institute
M.A. - Goddard College
Ph.D. - The Fielding Institute

Stuck, Marla E. **2006**
Employment Manager
A.D. - Stautzenberger College
A.D. - Stautzenberger College
B.A. - Cleary College

Susnick, Stuart B. **1969**
Faculty: Social Science
B.A. - Brooklyn College, CUNY

Swan, Judith **1989**
Director Extension Services and Distance Learning
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Talley, Dana L. **1993**
Benefit Specialist

Tanguay-Hoover, Julie **1994**
Senior Graphic Designer
B.A. - College for Creative Studies

Taylor, Daniel R. **2000**
Coordinator Public Computing
A.A. - Washtenaw Community College
B.S. - Eastern Michigan University
M.L.S. - Eastern Michigan University
Graduate Certificate - Eastern Michigan University

Teevens, James **1989**
Faculty/Department Chair: Drafting
A.A.S. - Schoolcraft College
B.Arch. - University of Detroit
M.Ind.Ed. - Eastern Michigan University

Tew, Bonnie E. **1994**
Faculty: Humanities
A.A. - Kellogg Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Thoburn, Elisabeth **1995**
Faculty: Humanities
B.A. - University of Michigan
M.A. - University of Michigan

Thomas, Martin **1975**
Manager Campus Services

Thompson, Doreen **1975**
Faculty: Behavioral Science
B. A. - License de Sociologie – Sorbonne in Paris, France
B. A. - Atlantic Union College
M.P.H. - University of Michigan

Tierney, Matthew **2004**
Graphic Designer
B.F.A. - Purchase College - State University of New York

Tom, Kimberly **1988**
Manager User Support Services
A.D. - Washtenaw Community College
B.A. - University of Michigan

Townsend, Henry **1991**
Faculty: Public Service Careers
B.A. - University of Michigan, Flint
M.A. - Eastern Michigan University

Trame, John **1989**
Faculty: Electricity/Electronics
B.S. - University of Houston
M.S. - University of Houston
Sp.A. - Eastern Michigan University

Tran, Michael D. **1998**
IT Support Specialist
B.B.A - Eastern Michigan University

Trapp, Lori J. **1996**
Director Financial Aid
B.A. - Michigan State University

Travis, Susan **2000**
Counselor: Health Programs
B.A. - Concordia College
M.A. - Eastern Michigan University

Trosch, Diane J. **1979**
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.A. - Concordia College
M.A. - Eastern Michigan University

Turelli, Diane **2001**
Faculty: Mathematics
B.S. - Purdue University
M.A. - Purdue University

VanderVeen, Sister Judith **1976**
Faculty: Nursing
S.A. - Wayne State University
S.A. - University of Michigan
Diploma - Mercy Central School of Nursing
REGIS - State of Michigan
B.S.N. - Mercy College of Detroit
M.A. - University of Michigan

VanMarter, Kristy **1994**
Program Specialist Learning Support Services
B.B.A. - Cleary University

VanWagnen, Randy **2007**
Faculty: Visual Arts 3D Animation
A.S. - Full Sail Real World Education
B.A. - Michigan State University

Veasey, Lisa K. **1999**
Faculty: English/Writing
B.A. - Eastern Michigan University
M.L.S. - Eastern Michigan University

Velarde, Gloria A. **1990**
Faculty/Department Chair: Nursing
B.S.N. - Eastern Michigan University
M.S.N. - Wayne State University

Wagner, Sandra L. **1997**
Helpdesk Specialist
A.D. - Washtenaw Community College
General Office Specialty Certificate - Washtenaw Community College
Certificate - Brockton Institute

Wahab, Hanan A. **2000**
Faculty: Mathematics
M.S. - Michigan State University
M.S. - Michigan State University

Walsh, Ruth Anne **1987**
Faculty/Department Chair: Public Service Careers
B.A. - University of Toledo
J.D. - University of Toledo

Warner, Elizabeth **1988**
Faculty/Department Chair: Academic Skills
B.A. - University of Michigan
M.A. - San Francisco State University

Warsinske, Thomas G. **1998**
Lead Database Administrator
B.S. - University of Michigan
B.S. - Eastern Michigan University

Waskin, David **2003**
Faculty: English/Writing
B.A. - University of Michigan
M.A. - University of Miami

Wasserman, Donna **2002**
Faculty: Social Science
B.A. - Hamilton College
M.A. - Georgetown University
Ph.D. - University of Michigan

Weber, Kathleen **2002**
Faculty/Program Director: Allied Health/Dental Assisting
B.A.S. - Siena Heights University
C.D.A. – Dental Assisting National Board
R.D.A. – Michigan Board of Dentistry

Wegrzyn, Nancy D. **1985**
Purchasing Agent
B.S. - Eastern Michigan University
Graduate Certificate - Eastern Michigan University

Welch, Daniel J. **1997**
United Association Program Administrator
B.A. - University of Detroit
M.Ed - Wayne State University

Wells, Majorie **1999**
Continuing Education Program Manager - Community Education
B.S. - Eastern Michigan University
M.P.A. - Eastern Michigan University

Werthmann, Donald **2000**
Faculty: Visual Arts Technology
B.F.A. - Wayne State University
M.A. - Wayne State University

Westcott, Richard **1984**
Manager Grounds Maintenance

White, Timothy **2006**
Faculty: Internet Professional
A.D. - Grand Rapids Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Wiederhold, Holly **2004**
Landscape Planner and Master Gardner
B.S. - Ball State University

Wildfong, Dave **2006**
Student Services Advisor: Employment Services
B.S. - Eastern Michigan University
M.P.A. - Eastern Michigan University

Wilkins, Barry L. **1982**
Manager Building Services
A.D. - Washtenaw Community College

Wilkinson, Michael **2007**
Web Multimedia Developer I
Certificate - Washtenaw Community College
Certificate - Specs Howard School of Broadcasting

Williams, Aaron **2006**
IT Support Specialist

Williams, Linda **1987**
Financial Systems Analyst
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Williams, Traci **2006**
Web Designer II
B.F.A. - Eastern Michigan University

Willimann, Kristine **1999**
Faculty: Visual Arts Technology
B.A. - Michigan State University

Williamson, Anthony **2002**
Harriet Street Center Supervisor
A.A. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S.W. - Eastern Michigan University

Wilson, Elaine **2003**
Faculty: Humanities
B.A. - Washington University
M.A. - Yale University

Withrow, Jason **2001**
Faculty: Internet Professional
B.A. - Capital University
M.A. - University of Akron
M.S.I. - University of Michigan

Wooten, David **2006**
Faculty: Biology
A.D. - Macomb Community College
B.S. - Central Michigan University
M.S. - Central Michigan University

Worrell, Sandra M. **1998**
Associate Professional Services Personnel: Workplace Learning Center
B.S. - New York State University
M.Ed. - Northeastern University

Wurster, Allen J. **1995**
Testing Center Technician
A.D. - Washtenaw Community College

Yong, Howard **1999**
IT Support Specialist
B.S. - Eastern Michigan University
M.A. - Moody Bible Institute

Young, Colette **1987**
Faculty: Business
B.A. - Michigan State University
M.A. - Michigan State University

Zacharias, Matthew **2006**
Faculty: Digital Video
B.A. - University of Michigan

Zimmerman, Thomas **2002**
Faculty: English/Writing
B.A. - University of Iowa
M.A. - University of Iowa

Members of program Advisory Committees work closely with WCC faculty to improve the curriculum, keep instructors current on market trends, and provide advice for updating equipment and facilities. These individuals, all local community volunteers, represent a wide and diverse spectrum of the business, industry, professional, and educational agencies of the region. The College depends on the advice and assistance of these representatives to continually maintain the highest quality educational programs, courses, and services. Deans and Department chairs are ex-officio members of committees in their areas.

Program Advisory Committees 2008-2009

Architectonics Drafting Advisory Committee

Drew Anderson, Student
Kerry Benevito, Fowlerville High School
Victoria Bennett, Washtenaw Community College
Tom Buresh, University of Michigan
Charles Cooper, Ann Arbor Architects Collaborative
Ann M. Cox, Architect
Anita Crittenden, Houston Community College
Larry Darling, International Masonry Institute
Rick Detroyer, Pioneer High School
Betty Halliday, Student
John Hinkley, Hobbs & Black
Joyce Hunter, Ann Arbor Public Schools
Ed Kelly, Archiopolis
Don MacMullan, MacMullen Harmala Architects
Dan Malott, Albert Kahn Associates
Belinda McGuire, Washtenaw Community College
Robert Miller, Ann Arbor Roofing
Simon Ntezinde, Huron High School
Ken Perkins, Hobbs & Black
Mark Pogliano, Canton High School
Hardie L. Richardson, Ypsi Construction & Maintenance
Bruce Ross, Saline High School
Robert Saxton, Anderson-Hamilton Associates
Louis Smith, Ascent Design Company
Jim Teevens, Washtenaw Community College
Rosemary Wilson, Washtenaw Community College
Lee Yaros, Henry Ford Community College

Automotive Services Advisory Committee

Don Apple, Lotus Engineering
Rob Bogue, Washtenaw Community College
Bill Crispin, Bill Crispin Chevrolet
Bill Dehn, Sidestreet Garage
Michael Duff, Plymouth Canton High School
Laura Ent
Russ Ferguson, Washtenaw Community College
Tom Hemsteger, Washtenaw Community College
Dan Hoffenbecker, Sidestreet Garage
Brian Hogue, Hoover Street Auto
Mike Lewkowicz
John Mann, Washtenaw Community College
Jack Miller, Ypsilanti Automotive Heritage Museum
Chuck Reavis, RCTC Ypsilanti
George Riehl, Lotus Engineering, Inc.
Tim Schriner, Toyota Technical Center
Jason Tirb, Kalitta Motorsports
David Vella, Toyota Technical Center
Larry Webster, Car and Driver Magazine
Rick Weid, NATEF ETL
Ron Weston, Hartland High School
Don Wright, Engineering Group Manager Validation HVAC PTC
John Wright

Business Advisory Committee

Jim Carson, Robert Half Co.
Amelia Chan, Eastern Michigan University
Bill Grimes, Washtenaw Community College
Ida Hendrix, Briarwood Mall
Betty Hite, McNaughton & Gunn, Inc.
Toni Morell, Zingerman's
Dilip Mullick, East West Industrial Engineering
Jennifer Brant, NuStep, Inc.
Candice Shavalia, Busch's Inc.

Business Office Systems

Artemis Alex, Ypsilanti High School
Lynn Allison, Washtenaw Community College
Cheryl Bow, Saint Joseph Mercy Health System
Lillie Carter, University of Michigan Health Systems
Neil Gudsen, Washtenaw Community College
Camille Moberg, Sallie Hamilton Personnel
Shelly Piper, University of Michigan
Carol Sturtevant, University of Michigan Health Systems

Darcelle D. White, Eastern Michigan University
Wendy Willford, Manpower Inc. of Southeast Michigan
Rosemary Wilson, Washtenaw Community College
Sandra Worrell, Washtenaw Community College

Child Care Advisory Committee

Sally Adler, Washtenaw Community College
Carrie Anderson, Morning Star Child Care Center
Dr. Martha Baiyee, Eastern Michigan University
Kathleen Burchi, Child Care Network
Starr Burke, Washtenaw Community College
Linda Coon, Child Care Network
Liz Galimore, Saline High School
Laura Griswold, Gretchen's House Child Care Centers
Trudi Hagen, Washtenaw Community College
Rosanne Heppner, Washtenaw County Head Start
Peretz Hirshbein, Jewish Community Center of Washtenaw County
Dr. Seong Hong, University of Michigan - Dearborn
Rick Leyshock, Washtenaw Intermediate School District
Vicki Malcolm, Community Education & Recreation
Beth Marshall, High Scope Educational Research Foundation
Roger Palay, Washtenaw Community College
Martha Showalter, Washtenaw Community College
Diane Sheffrey, St. Francis School
Kathleen Strnad, Washtenaw Community College

Computer Information Systems Advisory Committee

Aydin Akcasu, Software Consultant
Victoria Bennett, Washtenaw Community College
Daniel Bethuy, Booth Newspapers
Denis Carmichael, Cimulus
Clif Flynt, Noumena Corporation
Terry Gliedt, University of Michigan
Kathie Gourlay
Nancy Howard, Washtenaw Community College
Brent L. Jones CISSP, CISA, Entertainment Publications, Inc.
Khaled Mansour, Washtenaw Community College
Andrew Salley
Roy Schmidt, Software Consultant
Pat Schumaker, Schumaker and Company
Richard Sheridan, Menlo Innovations
David Thibault, IT Strategy Partners
Victor Volkman, Siemens Corporation

Dental Assisting Advisory Committee

Gwen Graham-Feldkamp, Michigan Prison Systems
Heidi Hall, Kay L. Wilson, D.D.S.
Ronald Heys, D.D.S.
DeAnna Keith, Ray Maturo, D.D.S.
Arthur P. Lawrence, D.D.S.
Matthew Matuszak, D.D.S.
Jody Neuman, Arthur Lawrence, D.D.S.
Mariah Parent, Mary Stahle, D.D.S.
Kristina Sprague, Washtenaw Community College
Kay L. Wilson, D.D.S.
Kathleen Weber, Washtenaw Community College

Electricity/Electronics Advisory Committee

Aron Bachelor, Perceptron
William Barrymore, Ford Motor Company/ACH
Larry Bonds, Bonds Electric Inc.
Gary Downen, Washtenaw Community College
Timothy Dudek, Ford Motor Company
William Sumpter, Inergy Automotive Systems
Christen Vincent, Petty Electric Service

Graphic Design Advisory Committee

Alan Chochinov, Core77.com
David Dumo, National Geographic - School Publishing
Dennis Guastella, Washtenaw Community College
Jennifer Lowery, Coca Cola
Behnoush McKay, Woodbury College
Karen Moeller, Moedesign
Judith A. Moldenhauer, Wayne State University
Emma Presler, ESPN
Colleen Stokes, JCrew
Christopher Vice, Herron College of Design

Heating, Ventilation, and Air Conditioning Advisory Committee

Gregory Alvarado, Alvarado Mechanical
Timothy Cross
Paul Johnson, Washtenaw Community College
Bob Oltersdorf, Carrier Great Lakes
Les Pullins, Washtenaw Community College
Loren Swanson, Southern Michigan Heating
Jill Trinklein, Ferris State University

Human Services Advisory Committee

Aisha Abdul-Aziz, Student
Starr Burke, Washtenaw Community College
Joan Doughty, Community Action Network
Nan K. Holmes
Linda King, Washtenaw Community College
Yvonne Murawski, Judson Center
Kristy Norris, Washtenaw Community College
David Oblak, Washtenaw County
Lehman Powell
John Rinke, Washtenaw Community College
Martha Showalter, Washtenaw Community College
Chris Siehl, Washtenaw Community College
Sylvia Weinberg, Eastern Michigan University
David Wildfong, Washtenaw Community College

Internet Professional Advisory Committee

Scott Collins, Slashdot
Ken Estell, The Thomson Corporation
Keith Kopinski, PWB Marketing Communications
Catherine Hayes, Inner Circle Media
Austin McLean, ProQuest Information and Learning
Dave Mitropoulus-Rundus, Perficient, Inc.
Derick Montague, Title Source, Inc.
Serena Rosenhan, ProQuest Information and Learning
Joanne Smith, Enlighten

Nursing Program Advisory Committee

Mary Anne V. Brancheau, University of Michigan Health Care System
Cynthia Brown, Saline Evangelical Home
Lisa Friedman, St. Joseph Mercy Healthcare System
Sara Greenwood, Eastern Michigan University
Jean Hudson
James Kalafus, Student
Linda Lukiewski, Washtenaw Community College
Pamela McCoy, Veterans Administration Health Care System
Melissa Morningstar, Washtenaw Community College
Dorothy Nagle, St. Joseph Mercy Health Care System
Angela Poppe, Washtenaw Community College
Heather Poucher, University of Michigan Healthcare System
Linda Seck, Veterans Administration Health Care System
Roberta Towne, Eastern Michigan University
Sue Travis, Washtenaw Community College
Gloria Velarde, Washtenaw Community College
Michael Williams, Eastern Michigan University

Pharmacy Technology Advisory Committee

Marie Adkins, Veterans Administration Medical Center Pharmacy Dept.
Cindy Brussello, Veterans Administration
Dina Cheiman, Washtenaw Community College
Dennis Delonnay, Veterans Administration
Phillip Hinson, St. Joseph Mercy Hospital
Amanda Hutchins, Washtenaw Community College
Patricia Lima, Washtenaw Community College
Keila Samuels, Pharmacy Solutions
Jim Schultz, University of Michigan HomeMed IV
Sue Travis, Washtenaw Community College

Photography Advisory Committee

Terry Abrams, Washtenaw Community College
Doug Aikenhead , Washtenaw Community College
Jennifer Baker, Washtenaw Community College
Colin Blakely, Eastern Michigan University
Brian Broughton, Photo Manufacturer's Representative
Bob Cleveland, Bob Cleveland Photography
Jen Davis, Washtenaw Community College
Pete Draugalis, Draugalis Photography
Bob Foran, Bob Foran Photography
Gloria Joseph, William D. Ford Vocational School
Don Werthmann, Washtenaw Community College
Kyle Yaeger, Washtenaw Community College

Physical Therapist Assistant Advisory Committee

Annamarie Asher, University of Michigan Health System
Kathleen A. Cook, Washtenaw Community College
Tara Gilbert, Glacier Hills Rehabilitation Center
Patricia Hill, Washtenaw Community College
Brenda House, University of Michigan Health System
Douglas C. Julius, St. Joseph Mercy Hospital
Jose Kottoor, University of Michigan Medical Center
Granville Lee, Washtenaw Community College
Maryann Metzger, St. Joseph Mercy Health System
Alexandra Sciaky, Veterans Administration Ann Arbor Healthcare System
Susan Travis, Washtenaw Community College

Police Academy Advisory Committee

John Atkinson, Washtenaw Community College
William Bess, University of Michigan Department of Public Safety
Darnell Blackburn, MCOLES
Paul Bunten, Saline Police Department
Ralph Galvin, Washtenaw Community College
Matt Harshberger, Ypsilanti Police Department
Barnett Jones, Ann Arbor Police Department
Brian Mackie, Washtenaw County Prosecuting Attorney
Dan Minzey, Washtenaw County Sheriff's Department
Greg O'Dell, Eastern Michigan University Department of Public Safety
John Phillips, Pittsfield Department of Public Safety
Martha Showalter, Washtenaw Community College
Ed Toth, Chelsea Police Department
Henry Townsend, Washtenaw Community College

Radiography Advisory Committee

Betty Allen, Veterans Administration Hospital
John Arini, Veterans Administration Hospital
Susan Aris, Chelsea Community Hospital
Lori Baird, Children's Hospital of Michigan
Dawn Baker, Annapolis Hospital
Judy Balyeat, Saline Community Hospital
Nancy Blanton, Chelsea Community Hospital
Debborah Burch, University of Michigan Medical Center
Brenda Cheesewright, Veterans Administration Hospital
Cindy Corredine, St. Mary Mercy Hospital
Jody Dennison, Wyandotte General Hospital
Karen Hartman, St. Joseph Mercy Hospital
Amy Helton, Foote Hospital
Sheila Law, St. Joseph Mercy Hospital
Willie McLaughlin, Veterans Administration Hospital
Bernadette Nareski, Wyandotte General Hospital
Dianna Redman, Monroe Mercy Memorial Hospital
Martine Ripley, Veterans Administration Hospital
Cheryl Rusk, St. Joseph Mercy Livingston Hospital
Tracey Santure, Saline Community Hospital
Rosalyn Sexton, Monroe Mercy Memorial Hospital
Lisa Springsteen, St. Joseph Mercy Livingston Hospital
Dorene Stegink, University of Michigan Health Service
Jamie Stichler, St. Joseph Mercy Livingston Hospital
Athalious Tinsley, St. Joseph Mercy Hospital

Residential Construction Advisory Committee

Christine Finkbeiner, Home Builders Association of Washtenaw County
John Fingerle, Fingerle Lumber Company
Angelo Gross, Washtenaw Door and Trim
Patricia Harroun, Cardea Construction
Judith Hommel, Washtenaw Community College
Henry Landau, LBC
Cristy Lindemann, Washtenaw Community College
Allan Lutes, Alpha Remodeling
Tom Meadows, Allied Building Products
Mariano Sastre, MSG Homes
Laura Spear, Washtenaw Door and Trim
John Stuth, Washtenaw Community College

Technical Writing Advisory Committee

Nancy Allen, Eastern Michigan University
Maryann Bowen, Independent Contractor
Mary Caraballo
Michael Dailey, Independent Contractor
Andrea Frazier, Creative Solutions, Inc.
Laurie Kantner, Tec-Ed, Inc.
Heather Keeler, Skipping Stones
Sally Paul, Creative Solutions
Deb Stacy, Creative Solutions
Lisa Veasey, Washtenaw Community College

Welding & Fabrication Advisory Committee

Simone Desousa, HumanTech, Inc.
Jacob Holland, Washtenaw Community College
Bryce Mitchell, Local 190 Plumbers and Pipefitters
Chris Olson, Rosedale Products Inc.
Jack Reeves, Sweepsters, Inc.

Glossary

In this section

Glossary of terms used at WCC 324

Glossary of terms used at WCC

Academic Caution
The first step in the Academic Intervention Program. Students must work with a counselor before they will be allowed to register, or drop/add. Students who improve and meet the criteria of the Program will move out of the Academic Intervention Program and into Good Standing. Otherwise, students will remain in Academic Caution or move into Academic Warning, depending on their performance.

Academic Honors
Honors bestowed upon a student who has achieved a high level of academic success. Honors may be based upon performance over one or more semesters (Deans' List) or for cumulative performance at the time of graduation (Graduation Honors).

Academic Intervention Program
A program designed to identify and assist students who are showing signs of significant academic struggle. Students in this program must work with a counselor to develop an academic plan before they will be allowed to register. After three semesters, students who make no progress will be suspended.

Academic Suspension
Students involved in the Academic Intervention Program who have been unsuccessful at improving their performance will be suspended for the Fall or Winter semester or for an Academic year, in keeping with the criteria of the Program. Academic Suspension would occur no sooner than the end of the student's third semester.

Academic Warning
The second step in the Academic Intervention Program. Students must work with a counselor before they will be allowed to register, or drop/add. Students whose grades improve and meet the criteria of the Program will move out of Academic Warning and either up to Academic Caution status or back into Good Standing. Otherwise, students will remain in Academic Warning or be put on Academic Suspension, depending on their performance.

Accreditation
Recognition that the College or a College program has met standards or requirements set up by an external organization.

Add
Adding a class to the student's schedule by registering for it by the Add deadline for the session.

Admission
Acceptance of an applicant for enrollment in the College.

Articulation
The process of arranging instructional programs so that students may progress from one educational level to another without loss of credit.

Assessment
The process of determining a student's interests or level of competence.

Audit
To enroll in a College academic credit-bearing course on a non-credit basis. Such credits as the course normally carries are not included as part of the total credit load, however, tuition is assessed like a credit registration. An auditor ("AU") grade is issued and posted to the transcript.

College Work-study
An award of employment (i.e., an opportunity to work for paid wages on the campus) given to a student based on financial need.

Continuing Education Units (CEU's)
A nationally recognized recording device for substantive non-credit learning experiences. One CEU is defined as ten contact hours of participation in an organized continuing education experience with responsible sponsorship, capable direction, and qualified instruction.

Co-requisite
An additional course which is required to be taken during the same semester with another course.

Course Load/Overload
The total number of credit hours a student is officially registered for in a given semester. A Full-time Student is one who enrolls in 12 or more credit hours per semester; a Part-time Student is one who enrolls in less than 12 credit hours per semester; a Half-time Student is a Part-time student enrolled in at least 6 credit hours per semester. Students enrolling in 18 or more credit hours per semester are considered to be carrying a Course Overload.

Credit Hours
The number of hours of credit granted for a particular course. The number of credit hours is normally equal to the number of lecture hours that a class meets each week e.g., a 3 credit hour class will meet for 3 hours each week for a 15-week semester.

Cumulative Grade-Point Average
A measure of a student's scholastic success, which includes all coursework attempted at the College. The average is obtained by dividing the total grade points by semester hours of credit attempted.

Curriculum
A group of courses, sequences of subjects, or planned learning experiences.

Drop
Term used when a student removes a class from his/her schedule by the 100% refund deadline for the session. The refund deadlines are published in the printed Academic Class Schedule and on the Web. The student receives a refund for tuition paid minus any fee that may apply to the particular class. This class will not show on the student transcript. Students on financial aid may owe the government money back if they drop a course.

Educational Goal
A student's statement of the goal he/she intends to achieve by attending WCC.

Elective Course
A course which a student may choose to take from a number of alternative courses in order to fulfill a program requirement (see Open Elective and Restricted Elective).

Emeritus Program
A program for county residents who are at least sixty-five years of age (at the start of the credit semester) which offers tuition-free participation in WCC credit and credit-free courses, workshops and seminars.

Fees
Charges assessed to students other than tuition charges.

Financial Hold
Students are placed on financial hold when they have not met their financial obligations to the College. Students placed on financial hold are not allowed to register for courses, cannot receive their College Certificate, Associate Degree or transcript and are not eligible to receive College services of any kind.

Freshman/First Year Student
A student who has completed fewer than 31 credit hours.

GED Examination
The General Education Development examination is a comprehensive test used to appraise the educational development of adults who have not completed a high school education. By achieving satisfactory scores on the GED adults may earn a high school equivalency certificate.

General Education Requirements
A body of learning areas which are incorporated into every WCC degree program of study. At WCC these areas include writing, speech, mathematics, natural sciences, social and behavioral sciences, arts and humanities, and computer information literacy.

Grade Point Average
The number of grade points earned divided by the semester hours of credit attempted.

Grant
An award of money given to a student based on financial need. Grants do not need to be repaid.

Instructor Permission
If an instructor grants a student permission to register for a class, the instructor will issue the approval electronically so that the student can register online by the published Add deadline. Notification of approval to register will be sent to the student's WCC e-mail account.

Level Change
Moving from one level of a course to another level because of a recommendation by an instructor. For instance, an instructor may recommend a move from Math 097 to Math 067.

Loan
An award of money given to a student based on financial need. Loans must be repaid once a student leaves the College or does not continue at the College on at least a half-time basis.

Open Elective
A course that may be chosen from any credit course numberes 100 or above offered at WCC and applied to a program of study. The credit hours for elective courses will be counted toward the total hours required for program or certificate completion.

Orientation
Online and campus presentations for new WCC students to acquaint them with College facilities, programs, services and procedures.

Post-secondary Education
Education beyond the high school level.

Prerequisite
Requirements that must be met or courses which must be successfully completed prior to enrolling in a specific course or program.

Program Advisory Committees
A committee made of local community volunteers representing business, industry, professional and educational agencies that provide advice and assistance to WCC's educational programs.

Registration
The process of officially enrolling in a course (or courses). Upon registration and payment, the course(s) are entered onto the student's permanent record unless the student drops or is dropped by the refund deadline.

Residency
The official home address of a student which is used to determine the tuition rate charged and, if applicable, program admission priority. Residency classifications are In-District, Out of District, Out of State, and Out-of-Country.

Restricted Elective

A course that must be chosen from a specific list or a specific discipline in order to fulfill program requirements. The credit hours for elective courses will be counted toward the total hours required for program or certificate completion.

Scholarship

An award of money and/or special recognition given to a student for certain types of proficiency, such as academic, or because of financial need. Scholarship monies do not need to be repaid.

Sophomore/Second Year Student

A student who has completed 31 or more credit hours but has not received an Associate Degree or has not qualified for upper division classification in a four-year college or university.

Transfer Agreements

Written agreements between WCC and four-year institutions, which specify transferring of WCC earned credits to the specific four-year institution.

Transfer Credit

Credit that has been taken at another accredited academic institution that is accepted by the College for use toward a College Certificate or Associate Degree.

Transcript

A transcript lists all courses taken by a student, showing the final grade received for each course. The official transcript is housed in the Enrollment Services Office, and an unofficial version can be accessed by the student in *MyWCC* on the WCC Web site.

Tuition

The monetary charge a student must pay at the time of registration for each semester hour of academic credit. With the exception of Distance Learning classes, the tuition rate is based on the student's residency classification.

Undergraduate

A student in a higher education institution who has not yet achieved the Bachelor's, or first professional, degree in a field of study.

Waitlist

The waitlist is created when a particular section of a class is full and students add themselves to the waitlist during the online registration process. The student may gain a space in the class if another student drops, the class size is increased, another section is opened, or if the instructor grants electronic permission to register.

Withdrawal

Term used when a student removes a class from their schedule after the 100% refund deadline for the session. The refund deadlines are published in the printed Academic Class Schedule and on the Web. The student is responsible for all of the tuition and fees associated with the course, and the course will be listed on the student transcript with a W (Withdrawal). Students on financial aid may owe the government money back if they withdraw from a course. Withdrawing from a course may also jeopardize the student's status related to the Academic Intervention Program; and any students receiving financial aid may not achieve the required Satisfactory Academic Progress.

Index

Symbols

3D Animation 175
3D Animation (APANIM) Associate in Applied Science Degree 175
.Net Programming (CVNETP) Advanced Certificate 146

A

Academic Advising 35
Academic Calendar. inside front cover . . . . . inside front cover
Academic Caution 46, 324
Academic Competitiveness Grant (ACG) 27
Academic Freedoms 53
Academic Honors 324
Academic Intervention Program 45, 46, 324, 326
Academic Levels 19, 200, 201
Academic Policies/Procedures 41, 42–51
Academic Skills ACS 204
Academic Skills (ACS) Courses . . . . . See Reading
Academic Skills Center 39, 334
Academic Suspension 47, 324
Academic Warning 47, 324
Accounting 103, 105
Accounting ACC 205
Accounting (APACCT) Associate in Applied Science Degree 104
Accounting (CTACC) Certificate 103
Accreditation 5, 324
Add 324
Adding and Dropping Courses 22
Administrative Assistant I (CTADA) Certificate 105
Administrative Assistant II (CVAAST) Advanced Certificate 106
Administrative Assistant Technology (APAATD)
Associate in Applied Science Degree 107
Admission 324
Admission Procedures 18
Admission, Registration, and Transcripts 17, 18, 19, 20, 21, 22
Admission to High-Demand Programs 18
Adult Transitions 10, 14, 26, 334
Adult Transition Students Earning Job Skills Certificates 26
Advanced Certificate (CV) 66
Advanced Manufacturing (CTAMFG) Certificate 82
Advanced Manufacturing Systems AMS 205
Advanced Placement Exams 43
Aid that you do not have to pay back: 27
Aid that you must pay back: 30
Alumni Association 36
Animation ANI 206
Anonymous Tip Line 62
Anthropology ANT 206
Appendix A 56, 57
Appendix B 55, 56, 57, 58
Application for Graduation 48
Apprentice Completion (CTAC) Certificate 85
Apprenticeship Studies 85
Approved Courses for General Education Distribution Areas 68
Arabic ARB 207
Architectonics ARC 207
Architectonics Drafting Advisory Committee 318
Architectural Technology (APAT) Associate in Applied Science Degree 118
Art ART. 209
Articulation 324
Articulation Agreements 73
Articulation Agreements and Transfer Guides 180
Assessment 324
Assessment Test 19
Associate Degrees 66
Associate in Applied Science (AAS) 66
Associate in Arts (AA) 66
Associate in Science (AS) 66
Astronomy AST 210
Audit (AU) Grade 44, 324
Auditing a Course 22
Auto Body Repair 93, 95
Auto Body Repair ABR 210
Auto Body Repair (CTAUBR) Certificate 93
Automation Technology (APATEC) Associate in Applied Science Degree 78
Automation Technology (CTAMTC) Certificate . . . 77, 78, 81, 83, 87, 89, 91, 109, 111, 167
Automotive Mechanics (CFAM) Certificate 95
Automotive Services 95
Automotive Services Advisory Committee 318
Automotive Services ASV 211
Automotive Technician (CVAUTC) Advanced Certificate 95
Auxiliary Services 34

B

Baking and Pastry (CTBAKP) Certificate 135
Billing and Payments: Online 24
Biology BIO 213
Board of Trustees 334
Bookstore 34, 62, 334
Brighton Center 16
Broadcast Arts (AABCA) Associate in Arts Degree 182
Business 101, 103, 181
Business (AABAS) Associate in Arts Degree 181
Business Advisory Committee 318
Business Management BMG 215
Business Office Systems 105, 107, 318
Business Office Systems BOS 217
Business Sales & Marketing (CTBSLM) Certificate 100

C

Cabinetmaking/Millwork Systems Technology (CVCMST)
Advanced Certificate 125
Campus Information 62
Campus Map. . . . . Inside back cover
Campus Safety 61
Campus Safety and Security 62
Campus Telephone/Office Directory 334
Cancellation of Classes 62
Cancellation of Specific Sections of a Course 42
Career Counseling 35
Career Degree and Certificate Programs 74
Certificate (CT or CF) 66
Certificate of Completion (CC) 66
Certificates 66
Certificates and Degrees organized into Schools 10
Chemistry CEM 219
Child Care Advisory Committee 319
Child Care and Education (CVCCE) Advanced Certificate 109
Child Care Professional (APCCP) Associate in Applied Science Degree 110
Child Care Professional CCP 220
Child Care Professionals 109, 111
Child Development (CTCDA) Certificate 109
Class Attendance 42
Classification of Residence 25

Class Level . . . 42
Club Sports . . . 36
College Board Advanced Placement Exams . . . 43
College Closing for Emergency and Severe Weather . . . 62
College Credit for High School, Technical or Career Education . . . 43
College Governance . . . 9
College Level Examination Program (CLEP) . . . 43
College on Demand (C.O.D.) . . . 15
College Transfer Services . . . 35
College Work-study . . . 324
Collision Repair Refinish Technician (CVCRRT) Advanced Certificate . . . 93
Collision Repair Technician CRT . . . 222
Collision Repair Technician (CVCLRT) Advanced Certificate . . . 94
Commencement (Graduation Ceremony) . . . 49
Commercial Property Maintenance Technology (CVCPMT)
Advanced Certificate . . . 113
Communication . . . 183
Communication COM . . . 223
Complaints against Associate Vice President for Student Services
or Vice President for Instruction . . . 56
Complaints Against College Non-Instructional Staff, Personnel
or Administrative Office . . . 55
Computer-Aided Drafting and Design (APCADD)
Associate in Applied Science Degree . . . 119
Computer-Aided Drafting CAD . . . 224
Computer-Aided Drafting (CTCADC) Certificate . . . 115
Computer-Aided Drafting (CVCADA) Advanced Certificate . . . 117
Computer and Information Literacy Requirement . . . 67
Computer Forensics (APCF) Associate in Applied Science Degree . . . 151
Computer Forensics (CVCFC) Advanced Certificate . . . 150
Computer Information Systems Advisory Committee . . . 319
Computer Information Systems CIS . . . 225
Computer Networking Academy I (CVCNA1) Advanced Certificate . . . 143
Computer Networking Academy II (CPCNA2) Post-Associate Certificate . . . 144
Computer Networking (APCNTM) Associate in Applied Science Degree . . . 144
Computer Networking Operating Systems I (CVCNO) Advanced Certificate . . . 143
Computer Networking Technology CNT . . . 228
Computer Programming (APCOMP) Associate in Applied Science Degree . . . 147
Computer Science . . . 189
Computer Science CPS . . . 229
Computer Security and Forensics . . . 149, 151, 153
Computer Software Applications (CTCSSC) Certificate . . . 105
Computer Systems Security (APCSS) Associate in Applied Science Degree . . . 152
Computer Systems Security CSS . . . 231
Computer Systems Technology CST . . . 232
Computer Systems Technology (CTCSTC) Certificate . . . 80
Concurrent Courses . . . 200
Consent Required . . . 200
Construction Management . . . 113, 115
Construction Management (AACMG) Associate in Arts Degree . . . 114
Construction Management CMG . . . 232
Construction Supervision (APCNSP) Associate in Applied Science Degree . . . 88
Construction Supervision (ASCNSV) Associate in Science Degree . . . 90
Construction Supervision (CTCNS) Certificate . . . 87
Construction Technology CON . . . 232
Continuing Education Units (CEU's) . . . 15, 324
Co-op, On-the-Job Training, and Individualized Study Courses . . . 200
Co-requisite . . . 324
Co-requisites . . . 200
Counseling/Advising . . . 34
Course Changes . . . 297, 298
Course Descriptions . . . 199
Course Description Table of Contents . . . 202
Course Distribution Requirements . . . 67
Course Load/Overload . . . 324
Course Load/Student Status . . . 42
Course Substitutions . . . 49
Credit and Non-credit for Organizations . . . 15
Credit by Examination . . . 43
Credit by Examination Fee . . . 24
Credit by Portfolio/Document Evaluation . . . 43
Credit Hours . . . 324
Criminal Justice (AACJ) Associate in Arts Degree . . . 185
Criminal Justice and Law Enforcement . . . 131, 133
Criminal Justice CJT . . . 234
Criminal Justice - Law Enforcement (APCJLE)
Associate in Applied Science Degree . . . 132
Culinary and Hospitality Management (APCULD)
Associate in Applied Science Degree . . . 137
Culinary Arts and Hospitality Management . . . 135, 137
Culinary Arts (CFCULC) Certificate . . . 136
Culinary Arts CUL . . . 235
Cumulative Grade-Point Average . . . 324
Curriculum . . . 65, 325
Curriculum Organization Chart . . . 197
Custom Auto Body Technician (CVCABT) Advanced Certificate . . . 96
Custom Cars & Concepts . . . 97
Custom Cars & Concepts CCC . . . 237
Custom Fabrication and Chassis Design (CVCFCD) Advanced Certificate . . . 96
Customized Training . . . 15

D

Dance DAN . . . 238
DANTES Subject Standardized Tests . . . 43
Deadlines . . . 21
Deans . . . 304
Deans' Honor Roll . . . 45
Degrees and Certificates . . . 74
Degrees and Certificates Awarded . . . 66
Degrees & Certificates . . . 10
Dental Assisting . . . 161, 163
Dental Assisting Advisory Committee . . . 319
Dental Assisting (CFDAC) Certificate . . . 161, 162
Dental Assisting DEN . . . 239
Dental Clinic . . . 34
Digital Video . . . 177
Digital Video Film Production (CFVID) Certificate . . . 176
Digital Video Production (AADVP) Associate in Arts Degree . . . 176
Directory . . . 334
Discontinuation of Degrees and Certificates . . . 66
Discontinued Courses . . . 300
Discontinued Programs . . . 48, 301
Distance Learning (College on Demand) . . . 15
Divisional Scholarship Information . . . 28
Drafting and Surveying . . . 115, 117, 119, 121
Drama DRA . . . 241
Drop . . . 22, 325
Dual Enrollment of High School Students . . . 20
Due Process Guidelines . . . 55

E

Eating and Drinking in Classes . . . 62
E-Business (CVEBUS) Advanced Certificate . . . 140

E-Business Fundamentals (CTEBF) Certificate 100
Economics ECO 241
Education 183, 185
Educational Goal 325
Elective Course 325
Electricity/Electronics Advisory Committee 319
Electricity/Electronics ELE 242
Elementary Education (AAELEM) Associate in Arts Degree 183
Emergency Notification Services for Students 62
Emeritus Program 25, 325
Emeritus: Students 65 Years of Age or Older 25
Employment Services 35
EMU Diverse World Requirement 69
English as a Second Language (ESL) 14
English ENG 243
Enrollment Services 20, 26, 43, 45, 46, 48, 49, 59, 334
Entrepreneurship 99
Entrepreneurship (CTENT) Certificate 99
ePayPlan (Student Payment Plan) 24
Escort Services 62
Executive Officers 304
Exemption from just Basic Skill Assessment 20
Exercise Science 187
Exercise Science (ASESCI) Associate in Science Degree 187
Explanation of Grades 44
Explanation of Terms 200
Extension Sites 15

F

Facilities 9
Faculty/Professional Staff 305
Federal Pell Grant (PELL) 27
Federal Programs 27
Federal Supplemental Educational Opportunity Grant (SEOG) 27
Fees 24, 325
FERPA 59–61
Financial Aid 22, 26, 42, 334
Financial Hold 325
Financial Information 23
Fluid Power (CTFPOW) Certificate 77
Fluid Power FLP 248
Food Services 63
Foundations of Computer Programming (CTFCP) Certificate 145
Freedom in Student Affairs 53
French FRN 248
Freshman/First Year Student 325
Full-time student 42

G

GalleryOne 36
GED Examination 325
General Admission Policy 18
General Education 66, 67, 68, 69, 72, 76, 92, 98, 108, 112, 130, 134, 138, 156, 160, 174, 325
General Education Course Requirements 67, 325
General Information 7
Geography GEO 249
Geology GLG 249
German GRM 250
Glossary 323, 324, 325, 326
Glossary of terms used at WCC 323, 324
Grade Appeal Procedure 41, 44, 45
Grade Point Average 325
Grade Point Average (GPA) 45
Grades 44, 45
Grading Scale 44
Graduation Application 48
Graduation Ceremony 49
Graduation Requirements 48
Graduation Requirements for a Certificate 48
Graduation Requirements for an Associate Degree 48
Grant 325
Grants 27
Graphic Design 177
Graphic Design Advisory Committee 319
Graphic Design (APGRD) Associate in Applied Science Degree 177
Graphic Design (CFGDTC) Certificate 177
Graphic Design Technology GDT 250
Guest Students From Other Colleges 20

H

Half-time student 42
Harriet Street Center 16
Hartland Center 16
Health Care Foundations 163
Health Care Foundations (CTHCF) Certificate 163
Health Science HSC 252
Health Student Admission 20
Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR) Associate in Applied Science Degree 123
Heating, Ventilation, Air Conditioning, and Refrigeration - Commercial (CVHVAM) Advanced Certificate 122
Heating, Ventilation, Air Conditioning, and Refrigeration - Industrial (CVHVAI) Advanced Certificate 122
Heating, Ventilation, Air Conditioning, and Refrigeration - Residential (CTHVRR) Certificate 121
Heating, Ventilation, and Air Conditioning Advisory Committee 319
Heating, Ventilation, and Air Conditioning HVA 253
High School Scholarship Information 28
History HST 254
History of Washtenaw Community College 9
Honor Roll and Graduation Honors 41, 45
Honor Society (Phi Theta Kappa) 45
Hope Credit 32
Hospitality Management (CFHMC) Certificate 136
Humanities HUM 256
Human Resource Management (CTHRSC) Certificate 100
Human Services (AAHUST) Associate in Arts Degree 195, 196
Human Services Advisory Committee 320
Human Services Worker HSW 255
Huron River Review 36
HVAC 121, 123

I

Incomplete Grade 'I' Credit Withheld 44
In-District Students 25
Industrial Electronics Technology (CFIET) Certificate 80
Industrial Training (APITRN) Associate in Applied Science Degree 89
Industrial Training (ASINDT) Associate in Science Degree 91
Information Assurance (CTIA) Certificate 149
Instructor Permission 325
Interim Suspension 54
Interior Design (APIDN) Associate in Applied Science Degree 120
Interior Design IDN 257

International Student Center 36
International Students in U.S. On Visas Other Than a Student (F-1) Visa 21
International Students seeking a Student (F-1) Visa 20
Internet Professional 70, 139, 141, 197
Internet Professional Advisory Committee 320
Internet Professional (APINPD) Associate in Applied Science Degree 141
Internet Professional INP 258

J

Java Developer (CVJAVA) Advanced Certificate 146
Journalism (AAJOUR) Associate in Arts Degree 192
Journeyman Industrial (APJPIM) Associate in Applied Science Degree 85

L

Late Add Fee 24
Law and Law Enforcement 185
Learning Resources 38
Learning Support Services (LSS) 35, 38
Level Change 325
Level II Prerequisites 200
Liberal Arts Transfer 187
Liberal Arts Transfer (AALAT) Associate in Arts Degree 186
Library 38
Lifetime Learning Credit 32
Linux/UNIX Systems I (CTLUX1) Certificate 153
Linux/UNIX Systems II (CVLUX2) Advanced Certificate 154
Loan 325
Lost and Found 62

M

Machine Tool 81
Machine Tool Technology (CTMTTC) Certificate 81
Machine Tool Technology MTT 260
MACRAO Transfer Agreement 70, 180
MACRAO Transfer Requirements 70
Management Supervision (APMGTM) Associate in Applied Science Degree 102
Management Supervision (CVMGTA) Advanced Certificate 101
Math and Science (ASMSAS) Associate in Science Degree 188, 189, 190
Mathematics MTH 261
Math Resource Center 39
Medical Office Assistant (CTMAS) Certificate 106
Michigan Adult Part-Time Grant (MAPT) 27
Michigan Competitive Scholarship 28
Michigan Educational Opportunity Grant (MEOG) 27
Michigan Merit Award 29
Michigan Nursing Scholarship 29
Michigan Promise Scholarship 29
Microcomputer System Support (APMSS)
Associate in Applied Science Degree 155
Military, Credit for Formal Service School Experience 26
Military Training 44
Mission of the College 8
Motorcycle Service Technology 97
Motorcycle Service Technology I (CTMST1)Certificate 97
Motorcycle Service Technology II (CVMST2)Advanced Certificate 97
Motorcycle Service Technology tMST 263
Motorist Assists 62
M-Ties: Students Transferring to University of Michigan 36
Music and Performing Arts 157, 159
Music MUS 263
Music Performance (CTMPER) Certificate 157
Music Production/Engineering (CTMPRO) Certificate 158

N

Networking 143, 145
Network Security (CVNS) Advanced Certificate 150
New Courses 298, 299
New Programs 301
New Student 19
Numerical Control NCT 266
Numerical Control Programming (CTNCPC) Certificate 82
Nursing 165
Nursing Assistant Skills Training (CCNAST) Certificate of Completion 164
Nursing NUR 267
Nursing Program Advisory Committee 320
Nursing, Registered (APNURS) Associate in Applied Science Degree 166
Nursing Transfer (UM School of Nursing) (APNURT)
Associate in Applied Science Degree 164, 165

O

Occupational Studies (APOST) Associate in Applied Science Degree 86
Office of Student Development and Activities 36
Open Computer Labs 39
Open Elective 325
Orchard Radio 36
Orientation 325
Orientation Exemptions 19
Other Aid 30
Outcomes Statement: 54
Out-Country Students 25
Out-District Students 25
Out-State Students 25

P

Parent Loans for Undergraduate Students (PLUS) 32
Parking 63
Participation in Assessment of Student Learning 42
Part-time student 42
Pass 'P'/No Pass 'NP' 44
Personal Counseling 35
Personnel 303
Pharmacy Technology 169
Pharmacy Technology Advisory Committee 320
Pharmacy Technology (CTPHAR) Certificate 168
Philosophy PHL 270
Philosophy Statement 67
Phi Theta Kappa 45
Photographic Imaging (CTPHOI) Certificate 178
Photographic Technology (APPHOT) Associate in Applied Science Degree 179
Photography 179
Photography Advisory Committee 320
Photography PHO 271
Physical Education Activity PEA 273
Physical Therapist Assistant Advisory Committee 320
Physical Therapist Assistant (APPTA) Associate in Applied Science Degree 170
Physical Therapist Assistant PTA 273
Physical TherapY 171
Physics PHY 275
Police Academy 14
Police Academy Advisory Committee 321
Police Academy (CTPA) Certificate 131
Policy on Student Rights and Responsibilities 52
Political Science PLS 275
Post-Associate Certificate (CP) 66

Post-secondary Education 325
Pre-Engineering/Physics 189
Pre-Medicine 190
Prerequisite 325
See also College Level Scores, ...54
Prerequisites 18, 19, 200
President's Honor Scholarship 28
Procassini Honor Scholarship 28
Procedure for Student Complaint Regarding College Faculty, Staff, Personnel or Administrative Offices 55
Procedure for Student Complaint Regarding Sexual and Discriminatory Harassment 55
Procedure for Student Final Grade Appeal 55
Procedures for Academic Dishonesty 56
Procedures For Disciplinary Hearings 57
Procedures For Student Discipline 56
Professional Writing 191, 193, 195
Profile of Washtenaw Community College 9
Program Advisory Committees 318, 325
Program Advisory Committees 2008-2009 318
Program Changes 301
Program Index 70
Programming 145, 147, 149
Programs with Admission Criteria 18
Psychology PSY 276
Public Service Training and Police Academy 14

R

Radiography 171
Radiography Advisory Committee 321
Radiography (APRAD) Associate in Applied Science Degree 171
Radiography RAD 277
Reactivated Programs 300
Reading REA 279
Re-admission of Former Students 20
Real Estate RES 279
Refunds 24
Registration 22, 325
Release of Student Information (FERPA) 59
Repeating a Course 44
Reporting an Emergency 62
Reserving Textbooks 34
Residency 24, 25, 325
Residential Construction 125, 127
Residential Construction Advisory Committee 321
Residential Construction (ASRC) Associate in Science Degree 126
Residential Construction I (CTRC1) Certificate 125
Residential Construction II (CVRC2) Advanced Certificate 126
Residential Design (CVRD) Advanced Certificate 117
Residential Planning and Estimating (CTRPE) Certificate 116
Restricted Elective 325
Richard W. Bailey Library 38
Right to Due Process 53
Robotics ROB 280

S

Sanctions 54
Scholarship 326
Scholarships 27
School of Advanced Manufacturing Systems 10, 76
School of Apprenticeship Studies 10, 84
School of Automotive and Motorcycle Technology 10, 92
School of Business and Entrepreneurial Studies 11, 98
School of Child Care Professionals 11, 108
School of Construction Technology 11, 112
School of Criminal Justice and Law Enforcement 12, 130
School of Culinary Arts and Hospitality Management 12, 134
School of Information Technology 12, 138
School of Music and Performing Arts 12, 156
School of Nursing and Health Sciences 13, 160
School of Visual Arts 13, 174
Science SCI 281
Secondary Education (AASECO) Associate in Arts Degree 184
Selecting the Program Year for Meeting Graduation Requirements 48
Self-paced Instruction 326
Senior (age 65+) Workshops for Emeritus Students 15
Services to Students with Disabilities 35
Shopping at the Bookstore 34
Single Parents and People Entering Nontraditional Careers 26
Smoke-Free Campus 63
Social Work 195, 197
Sociology SOC 281
Sophomore/Second Year Student 326
Spanish SPN 282
Stafford Loans 30
Standards for Receiving Educational Benefits 26
State of Michigan Programs 27
Student Clubs and Organizations 36
Student Complaint Procedures 55
Student Connection 22
Student Learning Support 37
Student Life 36
Student Newspaper 36
Student Payment Plan: ePayPlan 24
Student Privacy 59–61
Student Resource and Women's Center 35
Student Resource & Women's Center 26
Student Responsibilities 53, 56
Student Rights 51, 52, 53, 54, 55, 56, 57, 58, 59, 60
Students Transferring to WCC 42
Student Support Services 33, 51
Surveying Assistant (CTSA) Certificate 116
Systems Development and Administration 153, 155

T

Tax Credits 32
Tax TAX 282
Technical Writing (AATW) Associate in Arts Degree 193
Technical Writing Advisory Committe 321
Technical Writing (ASTWRT) Associate in Science Degree 194
Technical Writing (CTTWR) Certificate 191
Technology/Enrollment Fee 24
Telephone/Office Directory 334
Testing Center, 3rd floor Student Center Building 19
The International Student Center 35
The Morse B. Barker Scholarship 28
The Student Connection Answers Questions 18, 44
The Student Voice Newspaper 36
Trade Related Instruction/Apprenticeships 14
Transcripts/Final Grades 326
Transfer Agreements 326
Transfer and University Parallel Programs 13, 180
Transfer Credit and Credit for Other Prior Learning 42, 326
Transfer Credit from Other U.S. Colleges and Universities 44

Transfer Services 35
Transfer Students 20
Tuition 24, 326
Tutoring 38
Two-Part Orientation Process 19
Types of Study 9

U

Undergraduate 326
United Association 87
United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada 10
United Association Pipefitters UAF 283
United Association Plumbers UAP 284
United Association Service Technician UAE 284
United Association Sprinkler Fitters UAR 282
United Association Supervision UAS 285
United Association Training UAT 286
United Association Training (UAT) Courses 281
Use Financial Aid to Buy Books 34

V

Values of the College 8
Veteran Certification 26
Veteran Students 26
Video Production VID 294
Video Production (VID) Courses 282
Vision Statement 8

W

Waitlist 326
Waiver of Program Requirements 49
Washtenaw Technical Middle College 14
WCC Credit for Prior Learning 43
WCC Foundation Scholarships 27
WCC Previously Enrolled Veterans 26
Web Application Developer (CVWBAP) Advanced Certificate 140
Web Database Developer (CVWDDV) Advanced Certificate 154
Web Graphic Design (CVWBGR) Advanced Certificate 140
Web Technology (CTWBTC) Certificate 139
Welding and Fabrication 127, 129
Welding and Fabrication WAF 295
Welding (APWLDT) Associate in Applied Science Degree 129
Welding (CTWLDC) Certificate 127
Welding & Fabrication Advisory Committee 321
Welding Mechanics (CVWLDA) Advanced Certificate 128
Western Center 16
Withdrawal 22, 326
Withdrawal 'W' 44
Withdrawing from class (after refund deadline) 22
Work-Study 29
Writing Center 39

Y

Yoga YOG 296

Board of Trustees

Richard J. Landau
Chair
Term Expires: December 31, 2012

Stephen J. Gill
Vice Chair
Term Expires: December 31, 2010

David E. Rutledge
Secretary
Term Expires: December 31, 2008

Pamela Horiszny
Treasurer
Term Expires: December 31, 2010

Richard W. Bailey
Trustee
Term Expires: December 31, 2008

Diana McKnight-Morton
Trustee
Term Expires: December 31, 2012

Anne M. Williams
Trustee
Term Expires: December 31, 2008

Campus Telephone/Office Directory

General Information (phone menu) 973-3300

Academic Skills Center	GM 307	973-3301
Admissions	SC 2nd floor	973-3543
Adult Transitions	Counseling, SC 2nd floor	677-5006
Alumni Association	SC 306	973-3360
Apprenticeship/Trade Related Programs	ML 104	973-3533
Bookstore	SC 1st floor	973-3594
Brighton Center	7878 Brighton Road, Brighton	810-299-4195
Business and Industry Services	ML 104	677-5008
Campus Safety/Security	PO 124	973-3411/3502
Cashier	SC 2nd floor	973-3485
Center for Instructional Design & Technology	GM 225	477-8713/8724
Children's Center	FE	973-3538
College On Demand Help Desk	GM 225	477-8724
Computer Commons	GM 2nd Floor	973-3420
Continuing Education Services	ML 104	677-5027
Contract Training	ML 104	677-5008
Counseling and Career Planning	SC 2nd floor	677-5102/5124
Curriculum and Assessment	SC 247	973-3706
Dean of Admissions, Retention and Student Life	SC 203	973-3540
Dean of Business & Computer Technology	BE 100	973-3724
Dean of Continuing Ed. & Community Service.	ML 104	973-3630
Dean of Health and Applied Technology	OE 102	973-3474
Dean of Humanities/Social Science	LA 136	973-3356
Dean of Learning Resources	GM 116	973-3379
Dean of Math, Natural, Behavioral Sciences	LA 148	973-3722
Dean of Support Services and Student Advocacy	SC 206	677-5003
Dean of Vocational Technology	OE 170	973-3614
Dental Clinic	OE 110	973-3338
Distance Learning Information	GM 225	477-8713/8724
Employment Services	SC 2nd floor	677-5155
Evening/Weekend/Extension Services	LA 176	677-5030
Financial Aid	SC 205	973-3523
Harriet Street Center	332 Harriet St., Ypsilanti	480-9950
Hartland Center	9525 Highland Rd., Hartland	810-746-2152
Learning Support Services, Tutoring, Disability Services	LA 104	973-3342
Library	GM 1st floor	973-3429
Lost and Found	PO	973-3411
Math Resource Center	LA 258	973-3392
Public Service Training Program	ML 106	677-5024
Registration Questions	Student Connection	973-3543
Special Community Group Education	ML 104	677-5004
Student Connection	SC 2nd floor	973-3543
Student Activities	SC 112	973-3500
Student Resource and Women's Center	SC 2nd floor	973-5105
Student Records	SC 203	973-3543
Testing Center	SC 300	973-3634
Tutoring	LA 104	973-3342
Veteran's Benefits	SC 203	973-3616
Vice President for Instruction	SC 243	973-3488
Western Center	7920 Jackson Rd., Ann Arbor	424-0182
Writing Center	LA 355	973-3647