

Washtenaw Community College Bulletin

Programs and Services 2011 - 2012

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Greetings From President Larry Whitworth

Welcome to Washtenaw Community College – an open door college where all who are in pursuit of learning are welcome. As you become engaged in the College, you will find many individuals like yourself who are eager to learn. They are here to prepare for a new career or enhance the skills they need for their current job. Others are here to prepare to transfer to a four-year university, and some are here because they know there is no age limit on learning.



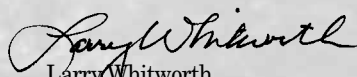
We live in a time of dramatic structural change, which has had a profound impact on jobs and the work environment. Gone is the day when an individual could make a good living at an unskilled job; 75 percent of today's jobs require training beyond high school. The workforce demands employees who are not 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.

No matter what your educational goals are, WCC is committed to helping you achieve them. The College offers more than 100 degree and certificate programs that prepare individuals for careers in a wide array of vocational, technical and occupational fields, in addition to our university parallel transfer programs. You will also find that we have a wide variety of flexible learning options such as online courses, blended or mixed mode classes—a combination of both online and in-class study, and weekend sections that allow you to fit learning around your busy schedule.

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 with 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.

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 a self-initiated and independent learners poised to achieve success in today's complex world.

Sincerely,


Larry Whitworth
President

“We believe education can improve the quality of life for everyone and for the community as a whole.”



CAREER P



Accreditations/Approvals

Institutional Accreditation

Washtenaw Community College is Accredited by

The Higher Learning Commission of the North Central Association
230 South LaSalle Street, Suite 7-500
Chicago, IL 60604-1413
312-263-0456
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/accreditation

Program Accreditations and Approvals

Automotive Mechanic Certificate

Automotive Technician Advanced Certificate

Collision Repair 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, VA 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

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, Suite 1900
Chicago, IL 60611-2678
312-440-2500
www.ada.org

Law Enforcement Basic Police Academy

Approved by

The Michigan Commission on Law Enforcement Standards
106 W. Allegan St., Suite 600
Lansing, Michigan 48933
517-322-1417
www.mcoles.org

Registered Nursing AAS Degree

Accredited by

**The National League for Nursing
Accrediting Commission**
3343 Peachtree Road NE, Suite 500
Atlanta, GA 30326
404-975-5000, Fax: 404-975-5020
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, MD 20814
301-657-3000
www.ashp.org

Physical Therapist Assistant AAS Degree Program

Accredited by

**Commission on Accreditation in Physical Therapy Education
(CAPTE) of the American Physical Therapy Association**
1111 North Fairfax Street
Alexandria, VA 22314
703-706-3245
accreditation@apta.org
www.capteonline.org

Radiography AAS Degree

Accredited by

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

Get the most up-to-date information about Washtenaw
Community College accreditation at: www.wccnet.edu or call
734-973-3543.

**Student
Center
Building**



General Information

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General Information

The College has three semesters

Fall
Winter
Spring/Summer

Enrollment

Over 13,000 in Winter and Fall semesters

8,000 in Spring/Summer semesters

Instructors

About 200 full-time faculty
Nearly 850 part-time faculty

Study

110+ credit programs arranged in schools:

Advanced Manufacturing Systems

Apprenticeship and Occupational Studies

Automotive and Motorcycle Technology

Business and Entrepreneurial Studies

Child Care Professionals

Construction Technology

Criminal Justice and Law Enforcement

Culinary Arts and Hospitality Management

Digital Media Arts

Information Technology

Music and Performing Arts

Nursing and Health Sciences

Professional Communication

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, Washtenaw Community College is a major provider of post-secondary education.

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,

Board members are elected by the community

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.

Facilities

Washtenaw Community College enjoys a 291-acre campus surrounded by green, treed space. The main campus is comprised of 16 buildings, and it is a smoke-free campus. Four academic buildings with approximately 250 classrooms are dedicated exclusively to instructional activities focusing on technical, industrial, occupational, and business education as well as the liberal arts. The remaining buildings on campus offer students and community members a variety of services:

- The Gunder Myran Building houses the Bailey Library, which offers a full complement of print and electronic resources, a variety of study spaces, and wireless access. Also in the building is the Computer Commons, which offers 200 computer workstations for student use.
- The Student Center features administrative student service offices, the college bookstore, a testing center, a food court, dining area, and a restaurant run by WCC culinary students.
- The Family Education Building houses the Children's Center – an on-campus childcare/preschool for children of WCC students.
- The Great Lakes Regional Training Center provides space for training of United Association of Plumber and Pipefitter members and other skilled trade union members.
- The Health and Fitness Center offers state-of-the-art equipment and facilities and is open to students, employees, and the community at large. Outdoor athletic fields nearby offer additional recreational events.
- The Morris J. Lawrence Building is a multipurpose center that includes an auditorium; exhibition, conference and special-event space; and classrooms and dedicated space for public service, business, industry, and contract training.

As a community college, WCC strives to serve and engage the community around it. An Emeritus scholarship program encourages area seniors to participate in continuing education. The college holds lectures and events that are open to the community at large. WCC's auditorium, exhibition, and conference spaces frequently host local theater groups, special community events, and other community-building activities.

Degrees and Certificates

Over 2,000 awarded annually

Over 80% of credit students pursue a WCC degree

Almost 15% work to upgrade job skills, pursue personal interests or earn transfer credits

For those who prefer to remain close to home, the college maintains four extension sites: the Brighton Center serving neighboring Livingston County, the Western Washtenaw County regional site, currently in Dexter, and the Harriet Street Center, serving Ypsilanti.

Washtenaw Community College continually reviews its programs, services, and buildings to ensure that it is offering what students need. In recent years, every building on campus has been renovated to keep abreast of the evolving educational landscape. New technologies, such as a geothermal mechanical heating and cooling system, and other environmental sustainability practices have been embraced by WCC.

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, and small theater productions. On-site catering is available.

Health & Fitness Center

The mission of the Health & Fitness Center is to create a healthy environment that engages students, staff and community members in the pursuit of health and physical fitness. With a facility such as this, the emphasis is on enjoying exercise for its own sake and learning fitness habits for life. This means that students have a place where they can focus on lifetime fitness goals and individual achievement, and community members can find opportunities to improve their health and well-being. Current WCC students who are 18 years of age and taking at least 3 credit hours can register for PEA 115 (Health and Fitness Experience), a ½ credit hour Physical Education course to improve their personal fitness.

The Center offers more than 100 fitness classes, as well as massage therapy, swim lessons, nutritional and behavior modification instructions, Pilates reformer classes, and personal training and health education seminars. Personalized service is a priority – a team of degreed and certified fitness specialists, instructors, therapists, dietitians and health educators work with members to develop a personalized program that helps them achieve the benefits of a healthy lifestyle. The Health & Fitness Center at WCC is an environmentally-friendly facility, recognized by the U.S. Green Building Council as being LEED certified at the Gold level.

The Center features:

- 25-yard lap pool
- Warm-water activity pool
- *Kids In Motion* activity-based childcare for children 6 month to 11 years old
- Expansive fitness floor with cardio, circuit and free-weight strength training equipment
- Full-sized gym for basketball and volleyball
- Elevated cushioned walk/jog track
- Four group exercise studios
- Coed whirlpool
- Platform tennis court
- Conference/education classrooms
- Locker rooms with lots of amenities

For membership, hours, and other information, visit www.wccfitness.org or call 734-975-9950.

Degrees and 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

Fluid Power (CTFPOW) Certificate
Automation Technology (APATEC) Associate in Applied Science Degree

Electronics

Industrial Electronics Technology (CFIET) Certificate
Industrial Electronics Technology II (CVIET2) Advanced Certificate

Machine Tool

Machine Tool Technology (CTMTTC) Certificate

Manufacturing

Numerical Control Programming (CTNCPC) Certificate

Other Options

Computer Systems Technology Certificate – See School of Information Technology

Welding – See School of Construction Technology

School of Apprenticeship and Occupational Studies

Apprentice Completion (CTAC) Certificate

Journeyman Industrial (APJPI) Associate in Applied Science Degree

Occupational Studies (APOST) Associate in Applied Science Degree

Articulated Union Building Trade Programs (including UA)

Construction Supervision (CTCNS) Certificate

Construction Supervision (APCNSP) Associate in Applied Science Degree

Construction Supervision (ASCNSV) Associate in Science Degree

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

Industrial Training (APITRN) Associate in Applied Science Degree

Sustainable Technologies in HVACR (APSTH) Associate in Applied Science Degree

Industrial Training (ASINDT) Associate in Science Degree

School of Automotive and Motorcycle Technology**Auto Body Repair**

Auto Body Repair (CTAUBR) Certificate

Collision Repair Refinish Technician (CVCRR) Advanced Certificate

Collision Repair Technician (CVCLRT) Advanced Certificate

Automotive Services

Automotive Services Technician (CTAVST) Certificate

Custom Cars and Concepts

Custom Auto Body Technician (CVCABT) Advanced Certificate

Custom Fabrication and Chassis Design (CVCFC) Advanced Certificate

Motorcycle Service Technology

Motorcycle Service Technology I (CTMST1) Certificate

Motorcycle Service Technology II (CVMST2) Advanced Certificate

Other Options

Occupational Studies – See School of Apprenticeship and Occupational Studies

Welding – See School of Construction Technology

School of Business and Entrepreneurial Studies**Entrepreneurship**

Entrepreneurship (CTENT) Certificate

Business

Business Sales and Marketing (CTBSLM) Certificate

Human Resource Management (CTHRSC) Certificate

Retail and Business Operations (CTRBO) Certificate

Management Supervision (CVMGTA) Advanced Certificate

Management Supervision (APMGTM) Associate in Applied Science Degree

Retail Management (APRM) Associate in Applied Science Degree

Accounting

Accounting (CTACC) Certificate

Accounting (APACCT) Associate in Applied Science Degree

Business Office Systems

Administrative Assistant I (CTADA) Certificate

Computer Software Applications (CTCSSC) Certificate

Medical Office Assistant (CTMAS) Certificate

Administrative Assistant II (CVAAS) Advanced Certificate

Administrative Assistant Technology (APAATD) Associate in Applied Science Degree

Other Options

Business AA Degree - See Transfer and University Parallel Programs

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Child Care Professionals

Child Development (CTCDA) Certificate

Child Care and Education (CVCCE) Advanced Certificate

Child Care Professional (APCCP) Associate in Applied Science Degree

General Information

School of Construction Technology

Construction Management

Commercial Property Maintenance Technology (CVCPMT) Advanced Certificate

Construction Management (AACMG) Associate in Arts Degree

HVAC

Heating, Ventilation, Air Conditioning and Refrigeration - Residential (CTHVRR) Certificate

Heating, Ventilation, Air Conditioning and Refrigeration - Commercial (CVHVAM) Advanced Certificate

Heating, Ventilation, Air Conditioning and Refrigeration - Industrial (CVHVAI) Advanced Certificate

Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR) Associate in Applied Science Degree

Residential Construction

Residential Construction I (CTRC1) Certificate

Cabinetmaking/Millwork Systems Technology (CVCNST) Advanced Certificate

Residential Construction II (CVRC2) Advanced Certificate

Residential Construction (ASRC) Associate in Science Degree

Welding and Fabrication

Welding (CTWLDC) Certificate

Welding Mechanics (CVWLDA) Advanced Certificate

Welding (APWLDT) Associate in Applied Science Degree

Other Options

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Criminal Justice and Law Enforcement

Police Academy (CTPA) Certificate

Criminal Justice - Law Enforcement (APCJLE) Associate in Applied Science Degree

Other Options

Criminal Justice AA Degree – See Transfer and University Parallel Programs

School of Culinary Arts and Hospitality Management

Baking and Pastry (CTBAKP) Certificate

Culinary Arts (CFCULC) Certificate

Hospitality Management (CFHMC) Certificate

Culinary and Hospitality Management (APCULD) Associate in Applied Science Degree

Other Options

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Digital Media Arts

3-D Animation

3-D Animation (CTANI) Certificate

3-D Animation (APANIM) Associate in Applied Science Degree

Digital Video

Digital Video Production (CTDVPC) Certificate

Digital Video Production (AADVP) Associate in Arts Degree

Graphic Design

Graphic Design (CFGDTC) Certificate

Graphic Design (APGRD) Associate in Applied Science Degree

Internet Professional

Web Technology (CTWBTC) Certificate

Web Application Developer (CVWBVDV) Advanced Certificate

Web Graphic Design (CVWBGR) Advanced Certificate

Web User Experience (CVWUE) Advanced Certificate

Internet Professional Associate in Arts – See Transfer and University Parallel Programs

Photography

Photographic Imaging (CTPHOI) Certificate

Photographic Technology (APPHOT) Associate in Applied Science Degree

Other Options

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Information Technology

Computer Security

Foundations of Computer Security (CTFCS) Certificate

Network Security (CVNS) Advanced Certificate

Computer Systems Security (APCSS) Associate in Applied Science Degree

Networking

Computer Systems Technology (CTCSTC) Certificate

Computer Networking Academy I (CVCNA1) Advanced Certificate

Computer Networking Operating Systems I (CVCNO) Advanced Certificate

Computer Networking (APCNTM) Associate in Applied Science Degree

Programming

Foundations of Information Systems (CTFIS) Certificate

C++ Programming (CVCPGM) Advanced Certificate

Programming in Java (CVJAV) Advanced Certificate

Web Database Programming (CVWDP) Advanced Certificate

Computer Science: Programming in Java (ASCSPJ) Associate in Science

Information Systems: Programming in C++ (ASISPC) Associate in Science

Systems Development and Administration

Linux/UNIX Systems I (CTLUX1) Certificate

Other Options

Math and Science – Computer Science Concentration – See Transfer and University Parallel Programs

School of Music and Performing Arts

Music Production/Engineering (CTMPRO) Certificate

Other Options

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Nursing and Health Sciences

Dental Assisting

Dental Assisting (CFDAC) Certificate

Health Care Foundations

Health Care Foundations (CTHCF) Certificate

Nursing

Nursing Assistant Skills Training (CCNASt) Certificate of Completion
Nursing, Registered (APNURS) Associate in Applied Science Degree
Nursing Transfer – EMU School of Nursing (APNURE) Associate in Applied Science Degree

Pharmacy Technology

Pharmacy Technology (CTPHAR) Certificate

Physical Therapist Assistant

Physical Therapist Assistant (APPTA) Associate in Applied Science Degree

Radiography

Radiography (APRAD) Associate in Applied Science Degree

Other Options

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

Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies

School of Professional Communication

Communication

Technical Communication (CTTC) Certificate

Broadcast Arts (AABCA) Associate in Arts Degree

Journalism (AAJOUR) Associate in Arts Degree

Technical Communication (AATCD) Associate in Arts Degree

Transfer and University Parallel Programs

Business Transfer

Business (AABAS) Associate in Arts Degree

Computer Science and Information Systems

Computer Science: Programming in Java (ASCST) Associate in Science

Information Systems: Programming in C++ (ASIST) Associate in Science

Math and Science - Computer Science Concentration (ASMSAS)
Associate in Science Degree

Criminal Justice

Criminal Justice (AACJ) Associate in Arts Degree

Education

Early Childhood Education (AAECED) Associate in Arts Degree

Elementary Education (AAELEM) Associate in Arts Degree

Secondary Education (AASECO) Associate in Arts Degree

Exercise Science

Exercise Science (ASESCI) Associate in Science Degree

Internet Professional

Internet Professional (AAINP) Associate in Arts Degree

Liberal Arts Transfer

Liberal Arts Transfer (AALAT) Associate in Arts Degree

Math and Science

Environmental Science (ASENVS) Associate in Science Degree

General Studies in Math and Natural Sciences (ASGSMS) Associate in Science Degree

Math and Science – Mathematics Concentration (ASMSAS) Associate in Science Degree

Pre-Engineering/Physics

Math and Science – Pre-Engineering/Physics (ASMSAS) Associate in Science Degree

Pre-Medicine

Math and Science – Biology/Pre-Medicine (ASMSAS) Associate in Science Degree

Math and Science – Chemistry/Pre-Medicine (ASMSAS) Associate in Science Degree

Social Work

Human Services (AAHUST) Associate in Arts Degree

Special Programs and Services

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.

Adult Transitions: Community Outreach

The Adult Transitions Program is a community-based program providing education and support for successful transition to post-secondary opportunities to at-risk and underserved populations in the Washtenaw County region. The program has three components: Literacy Skill Building, Job Education Services, and Academic and Personal Counseling.

The Skill Building Program prepares students for GED testing by helping them to improve reading, writing and mathematics skills. The program uses a step-by-step approach to move students from their neighborhoods to WCC and on to career paths of their choice. This non-credit program is offered in three sessions per year at various locations throughout the county. A nominal fee of \$30.00 is charged to each student. This fee covers the cost of the professional instruction and counseling services, the GED testing, and the official GED Steck-Vaugh test preparation guide.

The Adult Transitions staff and counseling team provide comprehensive support to the Adult Transition students. Two licensed professional counselors assigned to the program provide case management support for all students. In addition to counseling, the Career Education Coordinator provides critical linkage and support to the Skill Building students. The Coordinator assists

students in taking steps toward success in the planning of career goals and succeeding in regular college, certificate, and training programs offered through post-secondary institutions or workforce agencies.

Scholarships based on financial need may be available to students who enroll in Washtenaw Community College's short-term certificate programs. Some of the available programs include: Accounting; Baking and Pastry; Business Sales and Marketing; Child Development; Computer Software Applications; Computer Systems Technology; Heating, Ventilation, Air Conditioning and Refrigeration; Medical Office Assistant; Nursing Assistant Skills; Technical Writing; and Welding. 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/adulttransitions for more information.

English as a Second Language (ESL) Courses

The College offers courses (from high 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 or the International Student Center at 734-677-5158.

Public Service Training and Police Academy

The WCC Public Service Training Program helps law enforcement, corrections, security, fire protection, and other public service agencies provide in-service training courses for their employees. 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.

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,

WTMC high school students earn college degrees or certificates

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 and/or associate degree from Washtenaw Community College. 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 education and become leaders. Graduates of WTMC have many options including: entering the workforce directly, continuing at WCC toward an advanced certificate and/or associate 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, community outreach through courses and services offered at off-campus sites, and emeritus classes for people 65 years of age or older. 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
- Health and Wellness
- Nursing, Health Care and Social Work
- Personal Enrichment and Recreation

A wide range of classes is offered in an online format. For information please visit www.wccnet.edu/lifelonglearning or call 734-677-5060.

Continuing Education Units (CEUs)

Many LifeLong Learning workshops offer Continuing Education Units (CEUs). The Continuing Education Unit (CEU) is a measure of the amount

CEUs document your learning

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 based on hours of participation in an organized continuing education experience under responsible sponsorship, capable

direction, and qualified instruction. CEUs 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 CEUs are awarded are not eligible for college credit.

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 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.

Depending on the client's needs and objectives, programs can range from

Set up a class for your business

half-day workshops to semester-long 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 more convenient and more appropriate for the subject and skills being taught. Contact 734-677-5087 to find out more.

Other Places to Learn

Distance Learning (College on Demand)

WCC offers college credit courses at a distance in online or blended (online but coming to campus for part of the time) formats. Both use a variety of learning tools such as the Internet, video lectures, multimedia, and textbooks. The online component may include discussion boards, interactive activities, class assignments, and assessments.

Technical help desk 734-477-8724 or email codhelp@wccnet.edu

Students considering distance learning, online, and blended classes must have experience using word processing software, email, and the World Wide Web, as well as access to specific hardware and software that meet technical requirements.

Online classes have prerequisites with regard to minimum grade point average, college credits earned, and withdrawal rates. Students do not attend class on campus, but proctored testing may be required for some online classes.

The college offers an Introduction to Online Learning class for qualified students who want a preview of the skills needed for the online classroom. Students may complete the registration request form at www.wccnet.edu/cod/registration to enroll in the introduction class almost any time during the semester.

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

Visit www.wccnet.edu/cod for more information about distance learning, online, and blended classes at WCC.

Flexible Learning Options

Blended Classes

A combination of online learning with regular on campus class sessions

Online Learning -- College on Demand

Online courses are taught over 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 courses at various sites throughout its Washtenaw/Livingston county service area.

The WCC extension and community center locations are:

Eastern Area:

Harriet Street Center

332 Harriet Street
Ypsilanti, MI 48197
734-480-9950

Western Area:

Dexter Center

Dexter High School
2200 Parker Road
Dexter, MI 48130
734-424-0388

Northern Area:

Brighton Center

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

The Harriet Street, Dexter, and Brighton locations offer credit classes during Fall, Winter, and Spring/Summer semesters. Please consult the current class schedule for course information. Non-credit and youth classes are available at the Harriet Center only.

Several centers offer a variety of services: 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

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Admission steps

Apply online at
www.wccnet.edu

Complete online
orientation using
your net ID

Schedule and attend
in-person campus
orientation

Verify identity and
residency with a
government-issued
photo ID

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 Procedures 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.

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 curricula. In most instances, these

programs require a second admission process. WCC's Health and Second Tier Admissions Office 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 can answer questions about the admissions process, registration, checking grades, and viewing the online schedule. The staff can also help students order their transcripts, report a change in address, and apply 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's Office.

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.

We're Keeping Your Information Protected

To help protect the personal information of students, the College requires that all applicants show a current government-issued photo ID as part of the admission process. After being admitted and registering for classes, students should go to the Student Center Security Office (2nd floor) to obtain a student ID. The student ID allows students to get services from many campus offices, and all students must present their ID when requested by staff or faculty.

Two-Part Orientation Process

New students are required to complete an online orientation as well as attend an in-person 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 the in-person orientation.

Applicants whose native language is not English, and who plan to take English as a Second Language (ESL) classes, do not have to take the online orientation before attending an in-person ESL orientation.

Assessment Test

After online and in-person 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. 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 Admissions if they wish to be excused from the COMPASS assessment and are encouraged to do so before orientation. ACT or SAT scores may also be submitted on an official high school transcript.

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).

The Testing Center is located on the 3rd floor of the Student Center Building. 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. There may be a wait for an open seat during the last five days of the semester because current students are taking finals in the Center.

Academic Levels

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

Academic Levels usually rise as students work on their skills

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 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 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.

A student's Academic Math Level expires 12 months after the calculation date (the date of COMPASS testing, or the date that the student's WCC Math Level was established based on an outside assessment, or based on successful course completion.) For example, a student who is placed at Academic Level 3 in Math but does not take another Math class within 12 months would need to take COMPASS again to establish his or her current Academic Math Level. WCC strongly encourages students moving through a series of related courses not to let more than a semester pass between such courses. If the Academic Math Level has expired, students should refresh their math skills before taking COMPASS again; go to www.wccnet.edu/compassprep to take advantage of the online self-study Math resources and then take COMPASS.

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. College classes offered in the online or blended format have more prerequisites than the same classes offered on-campus.

Students seeking a Student Visa (F-1)

Application Deadlines
Supply all documents by:

July 15 for Fall Admission

November 15 for Winter Admission

Submit:

Online Application

TOEFL or MELAB scores

Personal Representative Form

Signature Form for F-1 students

Original letter on bank letterhead showing enough funds to support student

Notarized Financial Letter of Support Form from financial supporter that funds will be used to support student

Original certified transcripts in English of all schools attended

Exemptions

Exemptions from both in-person orientation and assessment are granted if the applicant meets one of the conditions below. These exempt applicants will be assigned Academic Levels of 6 in Reading, 6 in Writing, and 1 in Math. However, exempt applicants 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 submits a valid guest student application from their home institution indicating that they are in good standing.

Notes:

1. Some occupational programs have an additional screening process.
2. Students with disabilities who need accommodations during orientation and assessment testing 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. To help protect the personal information of students, the College requires that all returning students show a current government-issued photo ID as part of the re-admission process and then use their WCC student ID when visiting any campus offices in the future.

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:

- Submit an application to WCC;
- Complete the admission process;
- Submit a Dual Enrollment Student Principal/Counselor Consent Form, signed by their high school principal or counselor;
- Submit the minor Student Enrollment Parental Consent Form, signed by their parent or guardian; and

- Achieve Academic Level 6 in Reading and Academic Level 6 in Writing on their assessment test.

These students cannot take more than 7 credit hours per semester. Signed Dual Enrollment Student Principal/Counselor 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. First, students must go to www.wccnet.edu to complete an online application. Then they complete 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 Admissions counter. 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.

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 that list all courses required to successfully transfer. Approved articulation agreements are available online at www.wccnet.edu and in the Counseling Office. For information on public school articulation, see the following 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*.

Health Occupation Students - Special Admission Requirements

Students who are applying to a health occupation certificate or degree program (e.g., Nursing, Dental Assisting, Pharmacy Technology, Radiography, and Physical Therapist Assistant) must meet additional admission requirements specific to the area of study.

Admission to WCC does not guarantee admission to a health occupation certificate or degree program of study.

Go to www.wccnet.edu/departments/health to download Admission Information/Application Packets for health occupation programs.

International Applicants Seeking a Student (F-1) Visa

Admission Requirements for International Applicants (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. Applicants 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. Complete and submit a **Signature Form for F-1 Students**, showing the applicant's permanent address in their home country.
4. 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.
5. Submit a **Notarized Financial Letter of Support Form (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.)
6. 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.
7. 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**
 - 61 or better on the Internet-based Test of English as a Foreign Language (TOEFL) **OR**
 - 75% or better on the Michigan English Language Assessment Battery (MELAB),

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 F-1 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

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 and identity. 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 F-1 visa must include a copy of their Form I-20.
3. Complete online orientation and schedule an appointment for the Washtenaw Community College F-1 Orientation and Assessment testing. Visit www.wccnet.edu/orientation for more information. 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 the Fall and Winter semesters, toward graduation in their approved program at Washtenaw Community College. WCC is only authorized to admit F-1 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 734-677-5148. 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 U.S.

- **Permanent resident aliens** (green-card holders) who wish to attend WCC are unrestricted in the number of credit hours for which they may register (up to the WCC 17 credit hour limit). To apply for admission, submit a completed application along with a copy of your Permanent Resident Alien Card (front and back) and a copy of your current driver's license or State identification showing where you currently reside.
- **Applicants who possess refugee status or political asylum in the U.S.** who wish to attend WCC are unrestricted in the number of credit hours for which they may register (up to the WCC 17 credit hour limit). To apply for admission, submit a completed application for admission along with a current copy of your passport, appropriate documentation showing your status, and a current driver's license or State identification to show where you currently reside.
- **Other visa holders** should apply for admission by submitting a completed application for admission along with a current 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 B-1, B-2 or F-2 status) should first apply for and receive a student visa if they are planning to pursue a course of study. B-1, B-2, or F-2 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 on the paper test or 61 on the Internet test, 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 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

Students who have already confirmed their identity before admission or at the Student Connection may take their government-issued photo identification to the Security Office on the 2nd floor of the Student Center Building to get their WCC Student ID card. This ID is used to take tests in the Testing Center, purchase books through the bookstore using Financial Aid, pick up reserved books from the library and use other library resources, and confirm identity at other areas on campus. Students must present their ID when requested by staff or faculty members. Lost cards cost \$10 to replace, and students must provide a current, government-issued photo ID in order to obtain a replacement card.

Adding and Dropping Courses

Drops by the deadline are given full tuition refunds

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).

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 the 50% point of the session.

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

Audited classes may not always be covered by outside aid

versa early in the semester without the instructor’s permission. Refer to the published deadlines in the Academic Class Schedule for the semester in question.

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.

ADMISSION AND REGISTRATION





Occupational
Education
Building

LEAGUE



Financial Information

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**Unless you fail to meet the terms of your financial aid.*

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 with-drawal fails

Tuition and Fees

Tuition Rates*

In-District	\$85 per credit hour
Work In-District	\$85 per credit hour
Property In-District	\$85 per credit hour
Out-of-District	\$136 per credit hour
Out-of-State	\$179 per credit hour
Out-of-Country	\$179 per credit hour
Distance Learning Instruction	\$87 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 (per month)	\$25
Student Photo ID (replacement only)	\$10
Contact hour fee (per additional contact hour)** . . .	\$5
Credit by Exam Fee (per credit hour)	\$25
Books and Supplies	***
Payment Plan (processing fee)	\$25
Course Repeat Fee (per credit hour in addition to tuition, for any attempt after the third try.)	\$200

* *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 \$5 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 \$300 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 \$400 per semester for full-time students, but may be as high as \$700 or more depending on course selections.*

Billing and Payments

WCC does not mail tuition bills. Bills are issued weekly and students may get an email reminder that they have a bill, however, a payment deadline may fall before a bill is issued. Any time students register for a course or add/drop/change a class, they should immediately check their account balance and pay any amount due. Even if a student drops and adds classes with the same number of credit hours, the fees associated with each class may be different so it's important to check the account balance after any schedule changes. Payments are due by the deadline specified each semester.

Students can find their account balance in two ways:

1. Log into *MyWCC*, click on *Pay Your Tuition*, then click on *Log In - Billing and Payments*.
2. Go to www.wccnet.edu/pay then click on *Log In - Billing and Payments* on the right-hand side of the page.

After logging in, view and pay your account balance. By logging into *Billing and Payments*, students can pay online, print their bill, schedule payments on a payment plan to be taken from their credit card or bank account, or grant a trusted third party access to the billing process.

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 the student's official withdrawal for the following extenuating circumstances during the first two-thirds part-of-term/semester:
 - a. Student's induction 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 and contact hour 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.

Students who wish to have their refund deposited directly to their bank account may log into *MyWCC*, click *Student Services*, then *Direct Deposit Student Refunds* to fill out their bank routing number and account number, and authorize a direct deposit. Direct Deposit authorizations must be renewed every July.

Tuition rates are based on residency

Residency

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

Aspects of Residency

1. The residency of a student will be based on the address of the student's legal residence.
2. The legal residency of a student will be established using methods recommended by the State of Michigan.
3. The residency of minors (under 18) shall follow that of their parents or legal guardian. Students under 18 may qualify as In-District residents regardless of their parent's residence if they can provide sufficient evidence they are independently supporting themselves and are legal residents in the Washtenaw Community College District.
4. The residency of any person, other than a parent or legal guardian, who may furnish funds for payment of college fees, shall in no way affect the residency of the student.
5. Those students who are transferred to the State by the military or have been discharged from the military within the last six months must present appropriate documentation to waive the six-month Michigan residency requirement.
6. The student may petition to officially change residency status by supplying proof of residence to the Student Records Office. Students petitioning to change their residency for a specified semester must do so by the published deadline for that semester. Residency changes made after the deadline will take effect the following semester.

NOTE: The residency classification of a student at Washtenaw Community College does not necessarily apply to the residency requirements at other colleges and universities.

Classification of Residence

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

In-District Students are:

- Applicants who are legal residents in,

OR
- Applicants who live with and whose spouse is a legal resident in,

OR
- Applicants who live with and are dependent on a parent or a legal guardian who is a legal resident in

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

OR
- six 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 or who have not been legal residents of the State of Michigan for at least six months, or applicants who do not sufficiently document their residence.

Out-of-Country Students are:

- Applicants who are not U.S. citizens or do not have permanent resident alien, asylum, or refugee status through the Immigration and Naturalization Service.

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 on a space-available basis.

Emeritus students must follow the general admission criteria of the College and pay any class-related mandatory course fees each semester.

Students wishing to register for noncredit, *LifeLong Learning* classes using Emeritus status may register the day registration opens.

Emeritus students wishing to register for credit classes using Emeritus status have two options:

Types of Financial Aid

Many types of Financial Aid are available.

- Aid that you usually do not have to pay back: *
 - Grants
 - Scholarships
 - Work-Study
 - Other Aid
- Aid that you must pay back:
 - Federal Direct Loans for Students
 - Federal Direct 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.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.

*Unless you fail to meet the terms of your financial aid.

- **Option 1:** To ensure that the Emeritus Scholarship will apply to a class, students should wait until the deadline listed in the current semester bulletin and then register for any available course. WCC will apply the Emeritus Scholarship – no payment required.
- **Option 2:** Students willing to pay for the class to secure a seat, even if the Emeritus Scholarship may not apply, can register any time registration is available. But, students must pay by the payment deadline so they're not dropped. Here's how WCC determines whether the Emeritus Scholarship will apply to a class:
 - A. The Emeritus Scholarship will be awarded retroactively if the class does not fill before the deadline listed in the current Semester Bulletin. In this instance, the College will issue a refund later in the semester.
 - B. If the class fills by the deadline listed in the current Semester Bulletin, the College will not award the Emeritus Scholarship for that class. Students can:
 1. elect to stay in the class and not receive a refund of payment;
 2. drop by the deadline and receive a refund later in the semester;
 3. register for another class that is not full but make sure to call the cashier (734-973-3485) the day of registration to avoid being dropped for nonpayment. Please refer to the current Semester Bulletin for details.

Veteran Students

New Veteran 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

Apply for Veteran Benefits before you start classes

order to receive a packet of Veterans Benefit Application Forms. Students should bring certified copies of their DD-214 member 4 copy (military 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.

Transfer Veteran 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. All changes (drops, withdraws, adds, change to audit) must also be reported to the Veteran Services Technician immediately. Vocational Rehabilitation (Chapter 31) and Post-911 (Chapter 33) recipients must submit their Request for Certification two days before their payment deadline. Failure to do so may result in the delay of educational benefits.

For complete information on Veteran resources, go to the College home page, type "Veteran" in the Search box, then click on the provided link.

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. Submit an official military transcript to the Veteran Services Technician for evaluation. Accepted coursework will be posted to the transcript after the student has earned 1 or more credit hours at WCC.

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 and Women's Center provides assistance with career, financial, and educational planning for special populations that include single parents, displaced workers, displaced homemakers, 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 search *Student Resource and Women's Center* on the WCC web site 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 available short-term certificate programs include: Accounting; Baking and Pastry; Business Sales and Marketing; Child Development; Computer Software Applications; Computer Systems Technology; Heating, Ventilation, Air Conditioning and Refrigeration; Medical Office Assistant; Nursing Assistant Skills; Technical Writing; and Welding.

Students should call 734-677-5006 or refer to our web site at www.wccnet.edu (search GED or Adult Transitions) for more information.

Financial Aid

More complete information about financial aid at Washtenaw Community College can be found online by typing www.wccnet.edu/financialaid into

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

your web browser. 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 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 and Women's Center on the second floor of the Student Center Building or call 734-677-5105.

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 usually do not have to pay back (Unless you fail to meet the terms of your financial aid)

Grants

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

- Federal Pell Grant (PELL)**
 The Federal Pell Grant is awarded to qualified students and 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.

- Federal Supplemental Educational Opportunity Grant (SEOG)**
 Federal SEOGs 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.

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 scholarship funding for students. More than 900 scholarships are awarded annually. To find information on the Foundation scholarships, as well as a link to the online application, log on to www.wccnet.edu and type "WCC Foundation" into the Search box.

Once you fill out your online application, you must bring a letter of recommendation to the Financial Aid Office (SC 206) or WCC Foundation Office (SC 306). Fill out only one application per semester. A Scholarship Committee reviews all applications and assigns specific and appropriate scholarships to those who become recipients. The WCC Foundation scholarship criteria include the following:

- Applicants must complete the Free Application for Federal Student Aid (FAFSA). Do so at least 3 weeks before the scholarship deadline. The Federal School Code for WCC is 002328.
- Applicants must be a citizen of the U.S. or an eligible non-citizen, such as a permanent resident alien, or someone who has been granted asylum or refugee status by the U.S. government. Persons who are in the U.S. and hold 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 the Counseling Office. Applicants who are new students should submit interim grades or high school transcripts.
- Applicants must attach one letter of recommendation from an instructor/counselor/employer or a professional who can address the applicant's ability to succeed in an academic environment.
- Applicants must submit a personal statement of academic and career goals, which should include a brief statement about why the applicant should receive a scholarship (500 words maximum).

The WCC Foundation scholarship application deadlines are as follows:

For this semester	Apply by
Fall 2011	June 17, 2011
Winter 2012	October 10, 2011
Spring/Summer 2012	February 10, 2012
Fall 2012	June 10, 2012

Start here

Fill out the FAFSA

Use WCC's Federal School Code: 002328

www.fafsa.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.
Ann Arbor, MI
48105-4800

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 9 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
- Application deadline: April 1, 2012. Submit an application online at www.scholarships.egrant.org

Divisional Scholarship Information

The Divisional Scholarship provides scholarship monies for tuition and books. The scholarships are awarded for Fall and Winter semesters. Recipients must be enrolled in at least 6 credit hours each semester and be considered

Apply in May to get money for Fall and Winter semesters

in-district students at Washtenaw Community College. Students will receive \$300 for books each semester based on a 12-credit-hour enrollment. To fill out the application, go to www.wccnet.edu/financialaid and choose *Aid Types*, then *Scholarships*,

and scroll to the Divisional Scholarship Information. Application deadline: May 10, 2012.

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

Scholarships may cover two years of study

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. Application deadline: April 30, 2012.

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.

Resources

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

Work-Study

The Federal Work-Study program provides funding for 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 may apply for specific jobs 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
- Still be eligible for 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* link on that web page.

There is 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 bi-weekly via paycheck. Work-Study funds are not applied directly to the student’s account.

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 assigned job 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 2011 was \$8.85 per hour.
4. Students have the right to interview for the positions designated as Work-Study jobs if they have the required qualifications.
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

The State information number is 888-447-2687

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. TIP will pay for a maximum of 24 credit hours per academic year. To be eligible, students must:

- 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
- Meet Washtenaw Community College’s financial aid standard for Satisfactory Academic Progress found at www.wccnet.edu/financialaid
- Not be in default on a student loan
- 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 semester hours of courses completed within four years from high school graduation or GED completion. TIP applications may be obtained at local high schools.

Aid That You Must Pay Back

William D. Ford Direct Loans

Federal Direct Student Loans are funded by the U.S. Department of Education. Direct loan funds are disbursed directly to the school on the borrower’s behalf.

Loan Limits

Borrow only what you need

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 \$5,500 their freshman year, \$6,500 their sophomore year.
- Dependent students may borrow 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 \$31,000 in Direct loan funds.
- Independent students are allowed to borrow up to \$9,500 their freshman year, \$10,500 their sophomore year.
- Independent students (or students whose parents were denied a PLUS Loan) may not exceed a combined total of \$57,500 for undergraduate students.

Interest Rates and Payments

- As of press time, Direct loans had a fixed interest rate of 4.5% for subsidized and 6.8% for unsubsidized loans.
- Sample repayment schedules are available in the Financial Aid office.
- Based on financial need as demonstrated on the Free Application for Federal Student Aid (FAFSA), a borrower may receive subsidized and/or unsubsidized Direct loan funds.
- Subsidized Direct loans are loan funds where the government pays the interest for the borrower while the borrower is in school or in an eligible deferment.

Native American Tuition Waiver Program

Free Tuition (not fees) for qualified Native American students.

Requirements:

- Be at least one-quarter Native American descent and a member of a U.S. federally recognized tribe
- Be enrolled in a degree, certificate or transfer program
- Submit tribal waiver application to WCC from the Michigan Dept. of Civil Rights

Contact:

Michigan Department of Civil Rights

110 W. Michigan Ave.,
Suite 800, Lansing, MI
48933

517-241-7748

- Unsubsidized Direct loans are 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. 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.)
4. Your award letter will have instructions regarding the loan process.
5. The Financial Aid Office then certifies your loan eligibility and forwards that information to the U.S. Department of Education for further processing. If you have not previously signed a Master Promissory Note with the U.S. Department of Education, you will be notified to complete and Electronically Sign (E-Sign) Your Master Promissory Note (MPN).

Entrance Counseling

Federal regulations require new student loan borrowers to complete entrance counseling before receiving a Direct loan. Entrance counseling 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 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 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 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 loan servicer.

Exit Counseling

For information on Direct Loan Exit Counseling. Go to www.wccnet.edu/financialaid and click on *Exit Counseling*.

Repayment Options

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

- Standard Repayment: Typically this is the least-

Changes in terms are easier when payments are up-to-date.

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 servicer 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 servicer 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 *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 find the application by typing www.wccnet.edu/financialaid into their web browser.

Tax Credits

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 college you attend cannot determine if you qualify for one of these credits or the amount of credit due you.

American Opportunity Tax Credit

Rules have changed to allow those with higher incomes to claim an American Opportunity Tax Credit of up to \$2,500 for qualified education expenses paid for each eligible student. The American Opportunity Tax 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 and type *American Opportunity Credit* in the Search box.

Lifetime Learning Credit

Beginning July 1, 1998, taxpayers may be eligible to claim a nonrefundable Lifetime Learning Credit of up to \$2,000 (on the first \$10,000 of tuition) 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. The Lifetime Learning 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. For additional information go to www.irs.gov/publications and type *Lifetime Learning Credit* into the Search.

Maintaining Financial Aid Eligibility

Attend and Complete Class

Students who receive Title IV Federal financial aid and do not complete or attend class for at least 60 percent of the semester will be required to return a portion of their aid to the Federal government based on the last date of any academically-related activity. Title IV financial aid consists of parent loans for undergraduate students, unsubsidized and subsidized student loans, Pell grants, supplemental education opportunity grants, and work-study.

- **Satisfactory Academic Progress**

Students must maintain Satisfactory Academic Progress, which is explained on the WCC website.

- **Enrollment Status**

Many financial aid awards are based on the number of credit hours on the student's schedule: 1-11 credit hours counts as part-time status, and 12 or more credit hours counts as full-time status. Financial Aid will not count courses taken in audit status toward the student's total credit load for the semester. Some types of aid require students to take a specified minimum number of credit hours.

- **Dropping or Withdrawing**

Changes in the number of credit hours on your schedule can affect your financial aid award. Talk it over with the Financial Aid Office first to find out how your award might be affected. If you withdraw, your ability to receive Financial Aid may be affected or you may have to repay some or all of your aid.

Return of Title IV Funds

The federal government mandates that if you withdraw officially or unofficially from all of your classes, you may only keep the financial aid you have "earned" up to the time of withdrawal. Students who receive Title IV Federal financial aid and do not complete or attend class for at least 60 percent of the semester (or session) will be required to return a prorated portion of their aid to the Federal government based on the last date of any academically-related activity.

When you withdraw from all of your classes, WCC must determine the actual amount of federal aid that you earned while you attended your classes. To determine the amount of aid you have earned up to the time of withdrawal, WCC will divide the number of calendar days you attended classes by the total number of calendar days in the semester (or session)

Financial Information

(less any scheduled breaks of 5 days or more). The resulting percentage is then multiplied by the total federal funds that were disbursed to you for the semester. This calculation determines the amount of aid you earned which you may keep (for example, if you attended 25% of the semester (or session), you have earned 25% of the aid disbursed).

If Title IV funds were disbursed in excess of the earned amount, then those funds must be returned to the federal government. WCC will notify you by letter if you are required to repay any of your federal funds. You will be responsible to repay any funds that are determined to be unearned (total aid disbursed less the earned amount). This does not apply to you if you have withdrawn from some of your classes but remained enrolled in others, or have successfully completed at least one class.

Federal funds that may be affected by a complete withdrawal are:

1. Federal Unsubsidized Student Loan
2. Federal Subsidized Student Loan
3. Federal PLUS (Parent) Loan
4. Federal Pell Grant
5. Federal Supplemental Educational Opportunity Grant (FSEOG)
6. Federal Academic Competitiveness Grant

Return of Institutional Funds

Students should be aware that changes to their class schedule during the 100% refund period may result in the student owing back financial aid funds. Also, any changes made after the 100% refund period may result in the student losing their financial aid eligibility. The student may continue to attend WCC using their own funds for payment. Please see the Satisfactory Academic Progress Standard on the website for more information.

Satisfactory Academic Progress Standard

For a complete explanation of the standard, please go to www.wccnet.edu and type "Satisfactory Academic Progress" in the Search box, then click on the appropriate link.





Student Support Services

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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.

Saturday 9:00 a.m. to 1:30 p.m.

Spring/Summer Semester

Monday/Tuesday 9:00 a.m. to 6:00 p.m.

Wednesday/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

WCC students can sell back their used books every day at the bookstore. Proof of enrollment such as WCC ID or schedule are required for all buy backs. 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 go to www.whywaitforbooks.com to order their books.

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.

Using 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 www.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 and click on *Dates* 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.

Campusstore.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/preschool facility for children of WCC students. The Children's Center is located in the WCC

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

Family Education Building near the Crane Liberal Arts and Sciences Building. It 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 child development. Practicum students in the Child Care Professional Program and members of the Foster Grandparent Program participate in activities to enhance the child's learning experience. Call 734-973-3538 or stop by the Children's Center for details on age limits, enrollment, attendance requirements, fees, hours of operation, food provided, and other information. Visitors are always welcome; no appointment is needed.

To find our website, go to the College home page and type "Children's Center" in the Search box.

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 Resources:

Type www.wccnet.edu/advising into a web browser.

Career Exploration Online:

Type www.wccnet.edu/careerresources into a web browser.

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. on Monday through Thursday and 8 a.m. to 5 p.m. on Friday. During peak registration periods, the center may be open until 7:00 p.m. on Monday through Thursday.

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 search assistance and transferring to other two- and four-year colleges and universities. 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 and handouts on career-related topics. There are computers available for student use with Career Cruising and Discover, the interactive computerized career guidance programs. eDiscover is also available in MyWCC.

Schedule a simulated interview

Current transfer agreements with other area colleges and universities are maintained within the Counseling and Career Planning website, 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 and off-campus postings for current students and graduates. A web-based placement service is available at www.collegecentral.com/wcc for student and

alumni 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. 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 1st floor of the Crane Liberal Arts and Sciences Building in Room 104. Advising hours are generally Monday-Thursday from 8:00 a.m. to 6:00 p.m. and from 8:00 a.m. to 5:00 p.m. on Friday. Hours may change each semester, so please check with the Learning Support Services office.

Student Resource and Women's Center

Resources for male and female students

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.

Although everyone is welcome to use the Center, the staff is especially sensitive to the needs of adult students who most likely have 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

Student Support Services

populations that include single parents, displaced workers, 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 Counseling and Career Planning (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 (ISC)

The International Student Center strives to provide educational opportunities for international students and promote intercultural understanding on campus and in the community. International students from across the globe enjoy their own campus center dedicated to academic, personal, and vocational success. The ISC provides international orientation, ESL program advising, academic counseling, cultural adjustment counseling, student involvement and activities, and community resources. Questions about admissions or issues that might affect visa status should be directed to Admissions, 2nd floor SC, 734-973-3542.

The ISC is located on the 2nd floor of the Student Center Building in Room 206A. Feel free to contact us at intl@wccnet.edu or 734-677-5158.

Student Life

Office of Student Activities

The Office of Student 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, and *The Washtenaw Voice* newspaper. The Office is located on the 1st floor of the Student Center Building in Room 112 and services are available during regular campus hours. Visit www.wccnet.edu/students for more information, or call 734-973-3500.

Club Sports

Club Sports are open to both women and men who wish to participate on recreational teams. Club sports currently includes 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 to 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 Washtenaw Voice Newspaper

The Washtenaw Voice is a twice-monthly newspaper published by WCC students for the entire campus community. *The Washtenaw Voice* provides opportunities for students to report and write news and feature stories, take photographs, design pages, maintain and develop a full-service website and sell and manage advertising content. *The Washtenaw Voice* is located in the Technical and Industrial Building, Room 106. For more information call 734-677-5405.

Orchard Radio

Orchard Radio is WCC's commercial-free 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 734-677-5245.

Gallery One

Gallery One is located on the 1st floor of the Student Center Building, Room 108. The gallery shows work by student, faculty, local and international artists from 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 or visit www.wccnet.edu/galleryone for general exhibit information. To view Gallery One's flickr site, click on the *Activities* link at the top of Gallery One's home page, then scroll down to *Follow WCC*, and click on *Flickr*. At the flickr site, click on *Gallery One*.

Huron River Review

The Huron River Review, WCC's literary magazine, has earned more than 50 national and regional awards for excellence since its inception in 2002. It is open to submissions of poetry, fiction, nonfiction, photography, and art from WCC students, faculty, and staff. The submission period is September through January every year. The magazine is published annually in April or May. For more information, contact hrr@wccnet.edu.

Alumni Association

The College stays in contact with former students through the WCC Alumni Association. It's the link to career counseling, job fairs, business contacts, and WCC classmates and instructors. All former students may visit <http://alumni.wccnet.edu> to start taking advantage of this resource. The Alumni Association is located in The WCC Foundation Office (SC 306); the phone number is 734-973-3705.

Student Learning Support

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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

- 200 computers
- Windows and Macintosh platforms
- Internet access
- Microsoft applications
- Language lab software
- Software specific to particular classes
- Scanning and digital video editing workstations
- Printing available for a charge
- Tutoring services available

Resource Centers

Richard W. Bailey Library

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

Resources

The Bailey Library provides more than 65,000 books, 20,000 e-books, 400 hard copy periodicals, and 22,000 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

WCC's circulation system, online catalog, and library website provide efficient, accurate information on all library materials. Currently enrolled students should show a WCC ID card to borrow materials and will need their WCC netID and password to gain off-campus access to the Library's online resources. Students with iPhones can access the library catalog directly by: 1) downloading to their iPhone the free app BookMyne (by SirsiDynix) from the Apple store, then 2) searching for *Washtenaw Community College Library* and selecting it as their library.

The Library provides self-service copiers, and students can use their WCC ID card or purchase a copy card from a machine if they wish to make copies.

Hours and Website

The Bailey Library and Computer Commons are open during weekday, evening, and weekend hours as posted each semester. Consult the Library's web site at www.wccnet.edu/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 are covered. Chemistry, physics, biology and other sciences are covered (201 Gunder Myran Building). Tutoring is also available for general subjects, as well as for courses in Academic Skills, English, and English as a Second Language (104 Crane Liberal Arts/Sciences Building). Business and computer courses are covered at the Computer Commons, where lab assistants are also available (2nd floor, Gunder Myran Building). Tutoring is provided on a walk-in, individualized basis so that specific questions can be answered. If arriving during peak times (10:00 a.m. to 2:00 p.m.), students may need to wait for assistance longer than if they arrive during non-peak times. 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 (307 Gunder Myran Building) provides help for students who desire to improve their reading and study skills and realize academic success. 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).

Math Resource Center and Biology Resource Room

The Math Resource Center and Biology Resource Room (201 Gunder Myran Building) provides resources for WCC students enrolled in mathematics or the sciences. Math tutors for short sessions (15 minutes) and longer sessions (45 minutes) are usually available when the Center is open. Hours will vary during vacations and during the summer. The WCC mathematics web site has more information about mathematics 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 currently enrolled WCC 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 generating ideas, to creating effective sentences, paragraphs, and essays, to researching and documenting accurately and ethically.

Students enrolled in English 050/051, 090/091, 100, and 111 have Writing Center assignments as the “fourth” credit hour of their course and are required to attend a one-hour Orientation in the Writing Center during the first week of class. Writing Center assignments are due approximately once a week and provide students with writing support and practice that complements their course work.

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 additional information to help students. Just go to www.wccnet.edu and type “Writing Center” into the Search box.

Testing Center (3rd Floor SC)

The Testing Center provides a quiet and comfortable environment for students and guests to take tests for current classes, GED tests, employment screening tests, College Level Examination Program (CLEP) tests, DSST (DANTES) tests, Distance Learning tests and any tests that instructors wish to schedule.

The Center is open Monday through Saturday during the academic year and on Sundays during some semesters. Other special events may also affect its hours. Check the Center’s hours by going to www.wccnet.edu and search for the Center’s web site by typing “Testing Center” in the Search box.

At the Testing Center’s home page, you can also find out which tests are currently running. (Note: The Center only runs make-up tests if an

Student Learning Support

instructor schedules them.) On the left-hand side of the screen, click on *Current Tests*. This will tell you how long the test you wish to take will be running. To find out how many tests are closing on the day you plan to come in, sort the list by clicking on *End Date*. Since about 80% of students take their tests on the last day they are offered, these days tend to be busy. If 18 or more tests are closing on the date you want, expect to wait for an open seat in the Center.

When you check in at the Testing Center, you will need to show your current WCC student ID, or a current, government-issued photo ID if you are not currently enrolled at WCC. Please have your ID ready and be prepared to provide your instructor's name, the class name, and which

test you wish to take, since sometimes instructors run different tests for multiple classes or multiple sections. When you receive your test, verify that it is the correct test (i.e., Test One, Chapter Two, Mid-Term, or Final) for the correct class and section.

While you are in the Center, your cell phone must be turned off, and you are not allowed to wear an ear piece or ear buds while taking your test. There is no restroom available during testing. All that is allowed on your desk are your writing instruments and whatever notes or calculators your instructor allows. Please do not bring children, as they are not allowed into the Center.



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Academic Procedures

Participation in Assessment of Student Learning

Courses and programs at WCC are regularly assessed to provide information that can be used to improve

We strengthen your success by constantly assessing our results

teaching and learning at the college. To collect meaningful data, it is important that all WCC students participate in college-wide outcomes assessment activities. By choosing to come to WCC, students are expected to take part in assessment activities related to WCC course, program, and

general education outcomes whenever requested. These activities may include portfolio development, tests, surveys, or other tools to measure student learning. Strict confidentiality of individual student work will be maintained in all cases.

Cancellation of Specific Sections of a Course

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

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.

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 midway 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 rules apply to all semesters, including the combined Spring/Summer semester (WCC does not have separate spring and summer semesters). Even if a student is enrolled in one shorter summer session, the following rules still apply.

Full-time student One who enrolls in 12 or more credit hours per semester.

Part-time student One who enrolls in less than 12 credit hours per semester.

Half-time student A part-time student enrolled in at least 6 credit hours per semester.

Enrollment certifications are not processed until the first week of the semester.

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.

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 that list the courses required to transfer successfully all credits. Go to www.wccnet.edu

Counseling can tell you where your WCC credits may transfer 734-677-5102

for a list of approved articulation agreements. 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 the entire general education requirements at participating Michigan four-year col-

Enrollment Verification

Students may have their enrollment verified after the semester starts. 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.

leges 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 and there is information at the www.macrao.org home page under the title *MACRAO Transfer Agreement and Provisos*.

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. Up to 45 credit hours can be granted.

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.

Transferring Credit to WCC

The evaluation and acceptance of transfer credit is governed by the accreditation of the institution issuing the credit. Only transcripts that indicate accreditation by one of the Regional Accrediting Associations* will be evaluated for direct transfer of credit. Credit hours from institutions that are not regionally accredited may be submitted by the student for evaluation through the Portfolio/Document Evaluation process. In order to consider credit from international institutions, WCC requires submission of a course-by-course evaluation from Educational Credential Evaluators (ECE) or World Education Services (WES) instead of the official foreign transcript. Applications for ECE or WES outside services are available online at www.ece.org or www.wes.org and students may choose either one of these organizations. Any expense for international transcript evaluation is borne by the student.

Students seeking to transfer credit must submit official transcripts from the colleges previously attended. Copies of transcripts provided to the College become the property of WCC. Copies of transcripts provided cannot be given back to the student. The combination of all outside posted credits (such as testing, non-traditional, articulated, and transfer credit) cannot exceed 45 credits. If more than 45 credits are submitted, WCC will first attempt to award credit for courses necessary in the student's indicated program of study. Once outside credit is posted to the WCC transcript and proofed, the credit cannot be removed or changed. The

posting of the transfer credit may affect the student's financial aid if a student has attempted 90 credit hours in their college career. Coursework will be evaluated, at the student's request, after the student has earned one or more credit hours at WCC. Credit will only be granted for courses in which a grade of "C" (2.0) or better has been earned. Courses which are evaluated to be equivalent to college-level courses offered at WCC are posted on the transcript as the specific course (college-level is defined as 100 level or above). Courses which are evaluated as college-level but not equivalent to a particular WCC course are posted as elective credit in the appropriate discipline. An educational experience such as a practicum or a clinical that does not have standardized and measurable academic content will not be reviewed for transfer credit. Online, correspondence or teleconferencing courses must meet the same transfer criteria as standard traditional academic credit to be accepted. No transfer credit will be accepted for science lab work if the student has failed the lecture portion of the course.

Not all credit displayed on another educational institution's transcript is eligible to be transferred to WCC. Credit hours obtained at another institution through credit by exam, articulation agreements, life experience, portfolio review, etc. are not accepted. The student may submit these learning experiences for review through the WCC Portfolio/Document Evaluation process for potential elective credit.

WCC credits are based on semesters. Accepted transfer credit not originally issued in a semester-based format will undergo a conversion prior to being posted on the WCC transcript. Credit hours only, not grades, will transfer.

Students Must Promptly Check Transfer Credit

After the transfer evaluations are complete, posted, and a notice is sent to the student, the student bears a responsibility to promptly inform WCC if there are discrepancies in the posted credit that vary from the student's expectation. If there is a question about posted transfer credit, contact the evaluator within the Student Records area to learn how to proceed.

If the dispute involves content equivalency, the evaluator may ask the student to provide a course syllabus from the prior college for that course. Once the course syllabus is provided, the evaluator will review the course in question. If no change is warranted, specific reasons will be provided to the student.

If the student still disagrees with the evaluation, the evaluator in Student Records should be notified immediately. The evaluator will seek further opinion from the academic area at WCC. This process may take considerable time based on the availability of the faculty and also may require the student to provide additional information above what has already been provided. The student may also check with a program advisor for possible course substitutions.

Once credit has been posted to the WCC transcript and proofed, the credit is not removed.

Academic Policies/Procedures

*Regional Accrediting Associations

Washtenaw Community College recognizes the following regional accrediting associations for the acceptance of transfer credit:

New England Association of Schools and Colleges, Commission on Institutions of High Education (NEASC-CIHE)

New England Association of Schools and Colleges, Commission on Technical and Career Institutions (NEASC-CTCI)

Middle States Association of Colleges and Schools, Commission on Higher Education (MSCHE)

North Central Association of Colleges and Schools, The Higher Learning Commission (NCA)

Northwest Commission on Colleges and Universities (NWCCU)

Southern Association of Colleges and Schools, Commission on Colleges (SACS)

Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities (ACSCU)

Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges (ACCJC)

2011-2012 CLEP Tests	Score Needed for WCC credit	WCC Current Practice:	WCC Credit ⁶
	(ACE Recommended Score ¹)	Posts As	
Business			
Financial Accounting	50	ACC 111	3
Information Systems and Computer Applications	50	CIS 110	3
Introductory Business Law	50	BMG 111	3
Principles of Management	50	BMG 230	3
Principles of Marketing	50	BMG 250	3
Composition and Literature			
American Literature	50	ENG 302 elective (HUM)	3
Analyzing & Interpreting Literature	50	ENG 302 elective (HUM)	3
College Composition ⁷	50	ENG 111	3 ⁷
College Composition Modular ⁷ , <i>not recommended for WCC credit</i>	50	ENG 301 elective (WTG) ³	3
English Composition (with or without essay) ^{2,7}	50	With essay ENG 111 Without Essay ENG 301 elective (WTG)	3 ⁷ 3 ⁷
English Literature	50	ENG 302 elective (HUM)	3
Freshman College Composition ²	50	ENG 301 elective (WTG) ³	3
Humanities ⁷	50	HUM 302 elective	3 ⁷
Foreign Languages			
French Language, Level 1	50	FRN 111, FRN 122 if score is 50 to 58 ⁵	3 each/total 6
French Language, Level 2	59	FRN 213, FRN 224 if score 59 or above ⁵	3 each/total 6
German Language, Level 1	50	GRM 111, GRM 122 if score is 50 or above ⁵	3 each/total 6
German Language, Level 2	60	GRM 302 elective (HUM) ⁵	6
Spanish Language, Level 1	50	SPN 111, SPN 122 if score is 50 to 62 ⁵	3 each/total 6
Spanish Language, Level 2	63	SPN 201, SPN 224 if score 63 or above ⁵	3 each/total 6
History and Social Sciences			
American Government	50	PLS 112	3
History of the United States I: Early Colonization to 1877	50	HST 201	3
History of the United States II: 1865 to Present	50	HST202	3

Chart continued on next page

College Level Examination Program (CLEP)

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

- English Composition* or College Composition
- College 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. The College Composition Modular is not accepted for ENG 111 credit.

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

Students who have earned 6 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 areas of composition, literature, foreign languages, history, social sciences, science, mathematics and business. In general, a maximum of 3 semester credits may be granted for each College-approved subject examination for scores which meet ACE recommended credit-granting scores. For information about scheduling a CLEP test, contact the Testing Center at 734-973-3634.

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2011-2012 CLEP Tests	Score Needed for WCC credit	WCC Current Practice:	
	(ACE Recommended Score ¹)	Posts As	WCC Credit ⁶
Human Growth and Development	50	HSC 147	3
Introduction to Educational Psychology	50	PSY 302 elective	3
Introductory Psychology	50	PSY 100	3
Introductory Sociology	50	SOC 100	3
Principles of Macroeconomics	50	ECO 211	3
Principles of Microeconomics	50	ECO 222	3
Social Sciences and History ⁷	50	SSC 302 Social Sciences elective	3 ⁷
Western Civilization I: Ancient Near East to 1648	50	HST 121	3
Western Civilization II: 1648 to Present	50	HST 122	3
Science and Mathematics			
Biology	50	BIO 302 no lab elective ⁴	3
Calculus	50	MTH 191	3
Chemistry	50	CEM 302 no lab elective ⁴	3
College Algebra	50	MTH 176	3
College Algebra -Trigonometry ²	50	MTH 180	3
College Mathematics ⁷	50	MTH 302 elective	3 ⁷
Natural Sciences ⁷	50	NSC 302 no lab Natural Science elective ⁴	3 ⁷
Precalculus	50	MTH 180	3
Trigonometry ²	50	MTH 178	3

ACADEMIC POLICIES / PROCEDURES

¹ The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated CLEP processes and procedures for developing, administering and scoring the exams. The scores listed above are equivalent to a grade of C in the corresponding course.

² These examinations are no longer available to students.

³ WCC does not grade the essays which would be necessary for regular composition credit

⁴ WCC does not offer a lab test

⁵ Limited to a total of 6 credits per language—the higher level attained will post

⁶ 30 WCC testing credit hours limit (a combined total for all testing such as CLEP, DANTES, AP, Credit by Exam. The combination of testing, non-traditional, articulated, and transfer credit cannot exceed 45 credits. For example, if 30 testing credits are granted, the student may only transfer 15 additional credits to WCC).

⁷ General examination credit—cannot have more than 6 credits in the general examination subject area to receive exam credits

CLEP credit will post after the student has provided the official CLEP score report and earned at least one academic credit from WCC.

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.

Additional Policies: Student Records has discretion to give elective credit for AP work that has not been specified as a WCC course equivalent; course equivalencies are determined exclusively by the Office of Curriculum and Assessment.

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 $(4 \times 2.7) + (2 \times 3.3) = 17.4$

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

$17.4 \div 6 = 2.9$ GPA

GPA is 2.9

AP Test Name	Minimum Score Required	Credit Awarded	Course Equivalent
Art, History of	3	3	ART 130
Art, Studio - General Portfolio	3	3	ART 101
Biology	3	4	BIO 101
Calculus AB	3	5	MTH 191
Calculus BC	3	9	MTH 191 and MTH 192
Chemistry	3	4	CEM 111
	4	8	CEM 111 and CEM 122
Computer Science A	3	4	CPS 171
Computer Science AB	4	8	CPS 171 and CPS 271
Economics - Macroeconomics	4	3	ECO 211
Economics - Microeconomics	4	3	ECO 222
English Language and Composition ¹	3	4	ENG 111
	4	7	ENG 111 and ENG 226
English Literature ²	3	3	Elective Credit
	4	6	Elective Credit and ENG 170
Environmental Science	3	4	ENV 101
French Language	3	5	FRN 111
	4	10	FRN 111 and FRN 122
German Language	3	5	GRM 111
	4	10	GRM 111 and GRM 122
Government and Politics, U.S.	3	3	PLS 112
Government and Politics, Comparative	3	3	PLS 211
History, U.S.	3	3	HST 201
	4	6	HST 201 and HST 202
Music Theory	3	3	MUS 180
Physics B	3	4	PHY 111
	4	8	PHY 111 and PHY 122
Physics C - Mechanics	3	5	PHY 211
Physics C - Electricity and Magnetism	3	5	PHY 222
Psychology	3	3	PSY 100
Spanish Language	3	5	SPN 111
	4	10	SPN 111 and SPN 122
Statistics	3	4	MTH 160

AP Placement Notes:

- ¹ ENG LANG/ COMP is accepted as composition ENG 111 (+ ENG 226 with a score of 4 or above)
- ² ENG LIT/COMP is accepted as humanities elective (HUM) (+ ENG 170 with a score of 4 or above)

General Notes:

- Generally, credit is given with a minimum score of 3 (Economics, Computer Science AB are exceptions requiring a minimum score of 4 to give credit).
 - AP credit will post after the student has provided the official AP score report and earned at least one academic credit from WCC.
- Contact Enrollment Services at 734-973-3590 for additional course information.

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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 career/business skills through high school may be eligible to receive college credits for our occupational, computer, or business programs. You may apply for these articulated credits immediately after enrolling into your initial course at WCC or up to 24 months following high school graduation. No fees or tuition are charged for articulated college credits. Students must receive or request a recommendation from their high school teacher in order to be eligible. For more information please contact Washtenaw Community College at 734-677-5164.

Credit by Examination

Students must be currently enrolled to take credit by exam except for persons just admitted who wish to take the exam to demonstrate computer literacy. Students enrolled in a course who appear to be proficient in that 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 CEUs are not normally eligible for college credit.

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). The WCC Portfolio/Document process is designed to give credit for technical or work experience, so WCC's General Education classes do not typically receive credit equivalencies through this method.

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. Accepted coursework will be posted to the transcript after the student has earned one or more credit hours at WCC.

Explanation of Grades

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'.

For more information go to www.wccnet.edu and type *Grading Scale* in the search box.

Satisfactory 'S' or Unsatisfactory 'U':

'S' and 'U' grades are generally given for courses numbered below 100. 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 fully admitted 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. Refer to the Academic Class Schedule for specific dates each semester. Credit is not earned in courses taken on an audit basis.

After the deadline date, students seeking an audit must discuss receiving an audit as a final grade with the instructor.

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.

Course Repeat Limits

Washtenaw Community College acknowledges that the Academic Intervention plan does not effectively address situations where a single course, rather than a complete program of study, has proven difficult for a student to finish successfully. In order to further encourage student success on all levels and to reasonably utilize public resources, the College sets forth the following Course Repeat Limits for all students, both those who are successful in a single course, and those who have not been successful in the course.

1. The student may attempt a course for the first time at their own discretion providing they have met admission and prerequisite requirements.
2. The student may attempt that course a second time at their own discretion.
3. For the third attempt, the student must request permission via an online link in MyWCC:
4. For any attempt beyond the third attempt, the student must do BOTH of the following:
 - a) Request permission via an online link in MyWCC,

AND

- b) If permission is granted, pay a \$200 *per credit hour* Repeat Course Fee (non-refundable) assessed in addition to the normal tuition and fees dictated by the student's residency status. The fee plus tuition represents the actual cost of the class.

Courses taken under Audit status, courses withdrawn, and courses with expired incomplete grades count toward the total repeat attempts. Some courses are exempt from the Repeat Course Limits: e.g. PEA 115, all non-credit continuing education courses, courses numbered 189, 289, 174, 274, 164, 264, and courses designated as repeatable to a specified limit in the WCC catalog. Pursuant to the Board of Trustees policy, Emeritus students will not be charged the repeat course fee.

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 type *Transcripts* into the Search. Students may log onto MyWCC to view their unofficial transcript. 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

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

are available unless the student has a financial obligation to the college. Students may access their grades and unofficial transcript via *MyWCC* on the college web site. Note that on the transcript, grade points are referred to as "quality points."

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.

Academic Forgiveness

Washtenaw Community College (WCC) acknowledges that not all students are equally prepared for a successful academic career. Academic Forgiveness is intended to provide an opportunity to remove a period of poor academic performance at WCC from the GPA calculation. WCC recommends that a student attempt to repair their transcript by repeating a course(s) first and utilize Academic Forgiveness as a last step.

Due to federal regulations, the Office of Financial Aid does not acknowledge Academic Forgiveness when calculating eligibility for aid. Transfer institutions may or may not acknowledge Academic Forgiveness and may recalculate the WCC GPA for their purposes. It is at the discretion of other institutions to determine how they will interpret Academic Forgiveness.

A student seeking Academic Forgiveness must meet and understand the criteria below.

1. A minimum of three years must have elapsed between the poor academic performance and the Academic Forgiveness request. The student may continue to enroll during that three-year period. Enrollment can be at WCC or another educational institution.
2. Only semesters with a semester GPA of less than 2.0 are eligible for Academic Forgiveness.
3. To apply for Academic Forgiveness, the student must have successfully completed 12 or more credit hours at WCC with a C grade or higher and the cumulative GPA of those 12 credits must be 2.0 or higher since the period of poor academic performance. For the purpose of calculating Academic Forgiveness, classes taken since the period of poor academic performance with a final grade of W, AU, N, IX, or I as a final grade will count as F (failures) unless officially excluded due to a successful repeat of the course.
4. Academic Forgiveness applies to a maximum of two (2) semesters.
5. The two Academic Forgiveness semesters are not required to be contiguous.
6. In their request, the student will specify which classes taken during a semester in which Academic Forgiveness is applied for will be included. Courses included in Academic Forgiveness must have grades that affect the student's WCC grade-point average. Courses with a grading format that does not impact GPA (such as Pass/No Pass, Audit, Withdrawal, and Satisfactory/Unsatisfactory) are excluded from the Academic Forgiveness process.
7. If approved, the classes remain on the transcript with the original grade and a notation indicating that Academic Forgiveness was applied to them. The forgiven classes will be excluded from the WCC GPA.
8. Once granted, Academic Forgiveness is not reversible under any circumstance.

Academic Policies/Procedures

9. Academic Forgiveness may be granted only once even if the student did not take advantage of the full limit of Academic Forgiveness during their initial application.
10. Classes removed from the GPA under Academic Forgiveness will still count toward attempted classes for Financial Aid purposes.
11. Other institutions may interpret Academically Forgiven classes differently and use the original grades.
12. Courses that have applied toward a WCC degree or certificate will not be considered under Academic Forgiveness.

In order to apply for Academic Forgiveness, the student will initiate the process by completing an application for Academic Forgiveness with a WCC counselor or advisor. The counselor or advisor will discuss the ramifications and alternatives of Academic Forgiveness with the student. The student will indicate their understanding by signing the application. If the counselor recommends and the student still wishes to pursue Academic Forgiveness, the student will then meet with one of the Deans in Student Services for a second review and discussion of the application and its impact. Upon approval by the Dean, the application is forwarded to the Registrar to verify the criteria has been met, disclosure to the student was performed, and then the changes will be posted to the student's transcript.

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. (Note: only classes with letter grades are included in the 12 credit hour total.) 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 is one semester), have accumulated at least 15 credits and earned a minimum 3.8 grade-point average are also on the Deans' List.

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 the graduate's transcript, 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 are 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 734-973-3500.

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 071 | • ENG 061 | • ENG 090 |
| • REA 050 | • ENG 050 | • ENG 064 | • MTH 034 |
| • REA 051 | • ENG 051 | • ENG 065 | • MTH 067 |
| • REA 070 | • ENG 060 | • ENG 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, ENG 064 and ENG 067 are no longer offered. Choose the appropriate option below and talk to a 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 preceding list.*

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 preceding list.*

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 12.5 credit hours. **Students who move into this status after registering for the upcoming semester will need to adjust their credit hours before the last week of registration.** At that time, the College will adjust the schedules of any students who are over the credit hour limit
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 preceding list.*
 - 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 preceding list.*
 - 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 preceding list.*
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 8.5 credits. This is because students who are placed into Academic Warning Status are limited to 8.5 credits. **Students who move into this status after registering for the**

upcoming semester will need to adjust their credit hours before the last week of registration. At that time, the College will adjust the schedules of any students who are over the credit hour limit.

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 preceding list.*

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 8.5 credit hours. **Students who move into this status after registering for the upcoming semester will need to adjust their credit hours before the last week of registration.** At that time, the College will adjust the schedules of any students who are over the credit hour limit.
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: ACS 065, ACS 095, ACS 105, ACS 107, ACS 110, ACS 111, ACS 121 or ACS 122.
 - 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 preceding list.*
 - 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 preceding list.*
 - 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 preceding list.*

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 preceding list.*

The soonest suspension can occur for any student is the end of a student's third 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; from Spring/Summer 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 be permitted to return to school in Academic Warning Status.
- If the suspension is upheld by the SAC and it is a 1st suspension, 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 2nd floor of the Student Center Building. Find the form online by typing "Student Forms" into the Search box on the College home page. Degrees and certificates are issued in December, May, June or August, depending on when the student has completed their degree or certificate 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.

Apply for graduation before your last semester

online by typing "Student Forms" into the Search box on the College home page. Degrees and certificates are issued in December, May, June or August, depending on when the student has completed their degree or certificate 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. Earn a minimum cumulative grade-point average of 2.0 and if applicable, any minimum GPA specified in your program.
4. Meet all financial and library obligations to the College.
5. File an Application for Graduation form.
6. 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.
2. Complete a minimum of 75% of the total credits required as “residence credit” for each certificate pursued. Credit for prior learning, including credit by exam and transfer credit, may not be used as residence credit. Exceptions: A. The Certificate of Completion requires that all credit hours be completed as residence credit. B. The MACRAO agreement allows students completing their certificates at WCC to complete 25% of their credit hours as residence credit.
3. Earn a minimum cumulative and program GPA of 2.0.
4. If applicable, earn the minimum GPA specified for your program.
5. To earn a second certificate in the same program area, you must complete at least 9 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.

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. 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 degrees or college certificates of 15 credits or more are invited 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

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Student Rights and Responsibilities

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 is prohibited anywhere on the campus; this includes all College facilities, including buildings, sidewalks, parking lots, building entrances, and common areas.
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 email 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 for 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 for 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.

Due Process Guidelines

Student Complaint Procedures

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 is 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 of 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 of 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 of 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 of Student Services within 20 working days of the decision or event that generated the complaint.

Student Rights and Responsibilities

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 of Student Services or Vice President for Instruction

Step One: If the complaint is against the Associate Vice President of Student Services or the Vice President for Instruction, and the complaint cannot be resolved 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.

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 of Student Services' Office.

Step Two: The Associate Vice President of 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 of 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 work days.

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 of 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 of 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 in the Academic Dishonesty section under Student Responsibilities. 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 faculty members 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 of 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 of 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 of Student Services. The Associate Vice President of Student Services shall inform the Vice President for Instruction of the appeal.

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

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.

Appendices

Appendix A

Procedures For Disciplinary Hearings

Administrative Hearings are held before the Associate Vice President of 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 of 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 of 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.

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.

Student Rights and Responsibilities

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

Appendix C

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 and then only for those who are of legal drinking age. Consult the President's Office for procedural information. 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.

Office of the Ombudsman

Current or prospective WCC students with a concern about the College that they haven't been able to resolve should contact the WCC Ombudsman. Your situation will be treated with confidentiality in a safe environment. The Ombudsman's office is a neutral third party – we don't advocate for you or the College. Instead, we try to help find a solution that's fair and works for everyone. The office can:

- Help informally resolve issues
- Provide information to help you resolve the issue yourself
- Refer you to the proper WCC office to resolve your issue
- Explain a policy or procedure that's affecting you so that you better understand your situation
- Offer information about how you can appeal College decisions
- Assist you in considering your options

The Ombudsman's office also does the following:

- Reviews cases where students believe their *MyWCC* account or records have been accessed inappropriately
- Considers requests for refund exceptions where a student is ineligible under WCC's refund policy but believes that exceptional circumstances should result in a refund of tuition and fees
- Enforces WCC's policy that bans smoking anywhere on campus
- Reviews other types of student misconduct

If you'd like to speak to someone in the Ombudsman's office, it's best to make an appointment. If you wish to file a formal complaint against the College, you must submit your paperwork to the Office of the Associate Vice President of Student Services.

The Office of the Ombudsman is located in the Student Center, within the Student Connection, Room SC 203. For information or to schedule an appointment, call 734-973-3328 or email ombudsman@wccnet.edu

Family Educational Rights and Privacy Act (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 and continue to be registered past the refund deadline at the College. FERPA rights expire when the student is deceased and Washtenaw Community College, at the College's discretion, will release records only to next of kin (documentation must be provided and confirmed by the College) or to the legally appointed executor of the student's estate.

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 person employed by the College in an administrative, supervisory, academic or research, or support staff position (including campus security or health personnel);
- 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);
- a person serving on the Board of Trustees; or
- 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 or notification as follows:

- a. to officials of another school, at their request, in which a student seeks to enroll; this information may include application, enrollment, attendance, financial aid, disciplinary records, grading, financial account, and any other pertinent information
- 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

Student Rights and Responsibilities

- 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 considered 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
 - email address
 - date and place 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, degrees and honors 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, nor to other organizations requesting directory information on the student's status, nor would a graduating student be listed in the commencement program, unless the student provides a written release or rescinds the previous request in writing. Students who lose or cannot remember their password to MyWCC must visit campus with appropriate ID to gain electronic access.
- 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

Consumer Information

Information on a variety of consumer topics can be found at www.wccnet.edu/financialaid by looking for the link to *Consumer Information for Prospective and Current Students*.





Campus Safety

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Campus Security is available 24/7, 365 days

Call 3411 from a campus phone

Call 734-973-3411 from a cell phone

Outside emergency phones are in parking lots and exterior areas

Look for

Green or red 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

“Emergency” printed on the side

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, type *Campus Safety* into the Search. 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 canceling classes or closing the College either before or after classes have begun for the day. Students can receive time-sensitive notices via voice, email or text messaging regarding campus closings and emergencies. To sign up, go to *MyWCC* and click *WCC Alert Emergency Notification Service*. Students may also 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.

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 voicemail 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

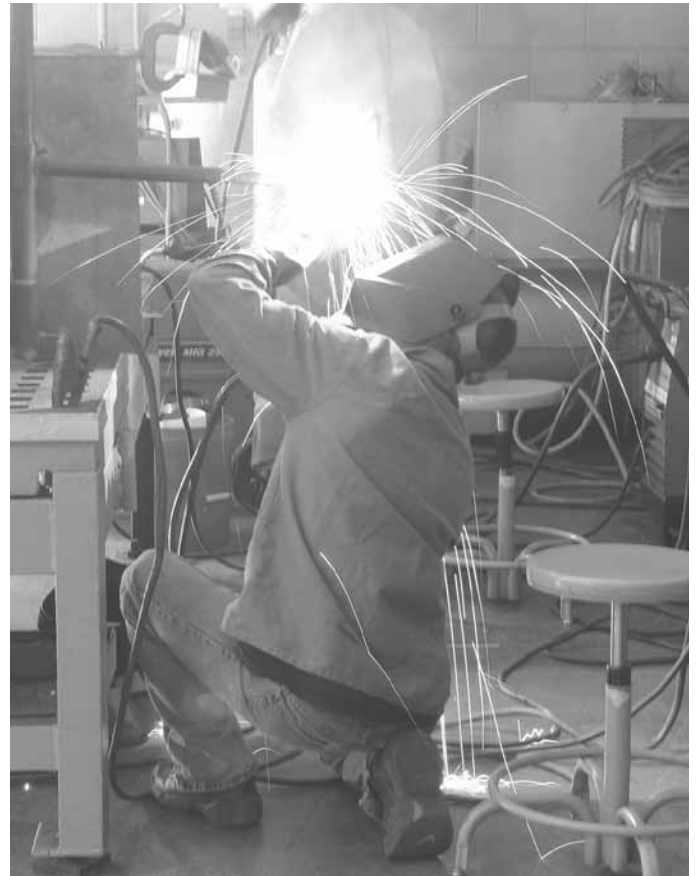
Security staff will provide vehicle jump-start assistance to those who leave their lights on, etc. The Campus Safety and Security Department will assist motorists in contacting local assistance for further service needs.

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



CAMPUS SAFETY

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 Tidal Volume

- 1 Primary (12) bronchi
 - a Rt + Lt primary (12) bronchi
 - arise at T5
 - Rt. bronchus, wider, straighter
 - Secondary (20) bronchi
- 2 Tertiary (25) bronchi
 - a interlobular bronchi
 - b terminal
 - c respiratory
- 3 alveolar ducts
- 4 alveolar sacs
- 5 alveoli
 - type I cells - squam
 - type II cells - secret to surface
 - alveolar macrophages



- 2 Diaphragm relaxes - inc. TP
- 3 Mt intercostal relax - chest wall down - in
- 4 Pressure in thorax
- 5 Air moves out
- 6 Accessory muscles
 - a internal intercostals
 - b abdominal m

C Lung Volumes

- 1 TV = 500ml
- 2 IRV = 1200ml
- 3 ERV = 1200ml
- 4 TLC = 5800ml

Note: Capacities = sum of
near matching volumes

- 5 IC = TV + IRV (1,700ml)
- 6 EC = TV + ERV (1,600ml)
- 7 FRC = ERV + RV (2,300ml)
- 8 VC = IRV + TV + ERV (4,600ml)
- 9 TLC = VC + RV (5,800ml)

- 6 Lungs structure
 - a Rt - 2 lobes, Rt - 3 lobes
 - b surrounded by visceral



Curriculum

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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. AA degrees require between 60 and 66 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 60 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 60 and 72 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 three 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 8 credit hours.

Certificate

The Certificate is awarded for standard credit programs that normally take two semesters to complete and range from 9 to 36 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 9 to 36 credit hours, may be added to a Certificate to form the basis for an associate degree.

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. For more information, refer to **Graduation Requirements** in the **Academic Policies/Procedures** section of this Bulletin.

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.

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 generally met through course distribution requirements (successfully completing courses from restricted distribution lists). Critical thinking is incorporated into the courses in the other areas and does not require any additional coursework.

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 General Education areas as described 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	3-4 credits
Social and Behavioral Science	6 credits	6 credits	3 credits
Arts and Humanities	6 credits	6 credits	3 credits
Critical Thinking ¹	0 credits	0 credits	0 credits
Computer and Information Literacy ²	3 credits	3 credits	3 credits
Total Credit Hours	30-33 credits	30-33 credits	21-24 credits

¹ *Critical thinking skills will be taught in all courses included in the other course distribution areas*

² *Due to the computer intensive nature of many courses, students are encouraged to complete the Computer and Information Literacy requirement as early in their academic career as possible.*

³ *The Associate of Science (AS) degree requires at least one lab science course.*

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 from the Student Connection. The following exceptions may apply:

1. The waiver may not apply if some or all of your general education coursework was transferred from an unaccredited institution to the accredited institution that awarded your bachelor's degree.
2. The General Education Math and Science requirements are not waived if the bachelor's degree does not contain math and/or science coursework.
3. The General Education Computer and Information Literacy requirement is not waived if the student did not complete the equivalent of WCC's computer literacy course.
4. Specific general education courses may still be required to fulfill the program requirements.

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, Arts and Humanities, and Computer Information Literacy 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.

Continued on following page

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 210	Nonverbal 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 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	Geometry and Trigonometry	3
MTH 167 ³	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 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, ENV*, GLG, PHY

* See the EMU Diverse World Requirement list

The following courses apply only to the programs specified:

CEM 102 ²	Chemistry for Elementary Teachers	4
GLG 202 ²	Earth Science for Elementary Teachers	4
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*	African American Art and Culture	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 120 Introduction Film 3
 HUM 145* Comparative Religions 3
 HUM 146 Mythology 3
 HUM 150* International Cinema 3
 HUM 160 American Film 3
 HUM 175* Arts and 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: Our Musical World 3
 MUS 185 Western Music History Survey 3
 PHO 103 History of Photography 3

Computer and Information Literacy

CIS 100 Introduction to Computers and Software Applications 3
 CIS 110 Introduction to Computer Information Systems 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	ENG 213	HST 150	HUM 170
ART 150	ENG 214	HST 210	HUM 175
ANT 201	ENG 224	HST 230	MUS 180
COM 225	ENG 242	HST 235	PLS 211
DAN 180	ENG 281	HST 240	PSY 107
ECO 280	ENV 101	HST 270	SOC 205
ENG 181	GEO 101	HUM 145	
ENG 187	HST 123	HUM 150	



MACRAO Transfer Agreement

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) 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 transcribed 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." This service must be requested before a transcript is sent to a transfer college.

The Colleges and Universities listed below accept the MACRAO transfer agreement

Albion College*	Michigan Technological University
Central Michigan University	Northern Michigan University*
Concordia University*	Northwood University
Davenport University*	Oakland University*
Eastern Michigan University*	Olivet College
Ferris State University*	Rochester College*
Finlandia University*	Saginaw Valley State University*
Grand Valley State University*	Saint Mary's College
Lake Superior State University	Siena Heights University*
Madonna University*	Spring Arbor University
Marygrove College*	Western Michigan University

* These colleges have provisos on their MACRAO agreements as described on <http://www.macrao.org/Publications/MACRAOAgreement.asp> as of April 2011.

MACRAO Transfer Requirements

*Note: Some MACRAO-approved courses do not meet WCC General Education requirements. Check the previous pages for approved General Education 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, 260
 Psychology (PSY) 100, 107, 117, 150, 200, 206, 210, 220, 240, 251, 257, 260
 Sociology (SOC) 100, 155, 202, 205, 207, 220, 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, 142, 200, 201, 208, 212, 215, 225, 227, 228, 237
 Chemistry (CEM) 102*, 105, 111, 122, 140, 211, 222
 Environmental Science (ENV) 101, 201
 Geology (GLG) 100, 103, 104, 110, 114, 202*
 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 only.

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

Arabic (ARB) 111, 122
 Art (ART) **101**, **102**, **108**, **111**, **112**, **114**, **120**, **121**, **122**, **125**, **127**, **128**, **129**, 130, 143, 150
 Communication (COM) 101, 102, **130**, 142, 183, 200, 210, 225
 Dance (DAN) 180, **200**
 Drama (DRA) 152, **170**, **208**, **209**
 English Literature (ENG) 140, 160, 170, 181, 187, 200, 211, 212, 213, 214, 222, 223, 224, 240, 242, 281
 French (FRN) 111, 122, 213, 224
 German (GRM) 111, 122
 Humanities (HUM) 101, 102, 103, 120, 145, 146, 150, 160, **170**, 175, 185
 Music (MUS) 140, 142, 180, 185
 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.

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 in the articulation agreement. Copies of articulation agreements can be obtained in the counseling office or online at <http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges>.



MACRAO TRANSFER AGREEMENT

Program Index

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3D Animation (CTANI) Certificate	141	Construction Supervision (CTCNS) Certificate	93
Accounting (APACCT) Associate in Applied Science Degree	112	C++ Programming (CVCPGM) Advanced Certificate.	156
Accounting (CTACC) Certificate	112	Criminal Justice (AACJ) Associate in Arts Degree	183
Administrative Assistant I (CTADA) Certificate	113	Criminal Justice - Law Enforcement (APCJLE) Associate in Applied Science Degree.	134
Administrative Assistant II (CVAAST) Advanced Certificate	114	Criminal Justice - Law Enforcement – <i>See also Police</i>	
Administrative Assistant – <i>See also Computer Software Applications</i>		Culinary and Hospitality Management (APCULD) Associate in Applied Science Degree.	139
Administrative Assistant Technology (APAATD) Associate in Applied Science Degree	115	Culinary Arts (CFCULC) Certificate	138
Air Conditioning – <i>See also Heating, Ventilation, Air Conditioning and Refrigeration</i>		Culinary – <i>See also Baking and Pastry or Hospitality</i>	
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Auto Body Repair (CTAUBR) Certificate	101	Dental Assisting (CFDAC) Certificate	163-164
Automation Technology (APATEC) Associate in Applied Science Degree	84	Digital Video Production (AADVP) Associate in Arts Degree	142
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Cabinetmaking/Millwork Systems Technology (CVCMST) Advanced Certificate	127	Entrepreneurship (CTENT) Certificate	107
Car – <i>See also Auto Body or Automotive</i>		Environmental Science (ASENVS) Associate in Science Degree	190
Child Care and Education (CVCCE) Advanced Certificate	117	Environmental Science – <i>See also Math and Science</i>	
Child Care and Education – <i>See also Early Childhood Education</i>		Exercise Science (ASESCI) Associate in Science Degree	187
Child Care Professional (APCCP) Associate in Applied Science Degree	118	Exercise Science – <i>See also Math and Science</i>	
Child Development (CTCDA) Certificate	117	Fluid Power (CTFPOW) Certificate.	83
CNA – <i>See also Nursing Assistant Skills Training</i>		Foundations of Computer Security (CTFCS) Certificate	149
Collision Repair Refinish Technician (CVCRRRT) Advanced Certificate	102	Foundations of Information Systems (CTFIS) Certificate	155
Collision Repair Technician (CVCLRT) Advanced Certificate.	102	Foundations of Information Systems – <i>See also Information Systems or Programming</i>	
Commercial Property Maintenance Technology (CVCPTM) Advanced Certificate	121	General Studies in Math and Natural Sciences (ASGSMS) Associate in Science Degree	191
Computer Networking Academy I (CVCNA1) Advanced Certificate	153	Graphic Design (APGRD) Associate in Applied Science Degree.	143
Computer Networking (APCNTM) Associate in Applied Science Degree	154	Graphic Design (CFGDTC) Certificate	143
Computer Networking Operating Systems I (CVCNO) Advanced Certificate	153	Health Care Foundations (CTHCF) Certificate	165
Computer Programming – <i>See also Programming in Java</i>		Health Care Foundations – <i>See also Dental, Nursing, Pharmacy, Physical or Radiography</i>	
Computer Science: Programming in Java (ASCSPJ) Associate in Science Degree	157	Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR) Associate in Applied Science Degree	125
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Computer Software Applications (CTCSSC) Certificate.	113	Heating, Ventilation, Air Conditioning and Refrigeration - Industrial (CVHVAI) Advanced Certificate.	124
Computer Systems Security (APCSS) Associate in Applied Science Degree.	151	Heating, Ventilation, Air Conditioning and Refrigeration – Residential (CTHVRR) Certificate	123
Computer Systems Technology (CTCSTC) Certificate.	152	Hospitality Management (CFHMC) Certificate	138
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Construction Management (AACMG) Associate in Arts Degree.	122	Human Resource Management (CTHRSC) Certificate	108
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Construction Supervision (APCNSP) Associate in Applied Science Degree.	94		

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Industrial Electronics Technology (CFIET) Certificate	86	of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada	98
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Industrial Training (APITRN) Associate in Applied Science Degree	96	Photographic Imaging (CTPHOI) Certificate	146
Industrial Training (ASINDT) Associate in Science Degree	98	Photographic Technology (APPHOT) Associate in Applied Science Degree	147
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Information Systems: Programming in C++ (ASISPC) Associate in Science Degree	158	Police Academy (CTPA) Certificate	133
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Journalism (AAJOUR) Associate in Arts Degree	178	Pre-Engineering – <i>See also Math and Science – Physics/Pre-Engineering Concentration</i>	
Journeyman Industrial (APJIM) Associate in Applied Science Degree	91	Programming in Java (CVJAV) Advanced Certificate	156
Law and Law Enforcement	185	Programming – <i>See also C++ Programming, Computer Science or Information Systems</i>	
Liberal Arts Transfer (AALAT) Associate in Arts Degree	189	Property – <i>See also Commercial Property Maintenance</i>	
Linux/UNIX Systems I (CTLUX1) Certificate	159	Radio – <i>See also Broadcast Arts</i>	
Machine Tool Technology (CTMTTC) Certificate	87	Radiography (APRAD) Associate in Applied Science Degree	173-174
Management Supervision (APMGTM) Associate in Applied Science Degree	110	Registered Nursing – <i>See also Nursing, Registered</i>	
Management Supervision (CVMGTA) Advanced Certificate	109	Residential Construction (ASRC) Associate in Science Degree	128
Manufacturing – <i>See also Automation Technology</i>		Residential Construction I (CTRC1) Certificate	127
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Math and Natural Science – <i>See also General Studies in Math and Natural Sciences</i>		Restaurant – <i>See also Culinary and Hospitality Management</i>	
Math and Science – Computer Science Concentration (ASMSAS) Associate in Science Degree	182	Retail and Business Operations (CTRBO) Certificate	108
Math and Science – Computer Science Concentration – <i>See also Computer Science</i>		Retail Management (APRM) Associate in Applied Science Degree	111
Math and Science (ASMSAS) – Math Concentration Associate in Science Degree	192	Sales – <i>See also Business Sales and Marketing</i>	
Math and Science (ASMSAS) Associate in Science Degree	193	Secondary Education (AASECO) Associate in Arts Degree	186
Math and Science – Math Concentration – <i>See also General Studies</i>		Security – <i>See also Computer Systems Security or Network Security</i>	
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Network Security (CVNS) Advanced Certificate	150	Web Application Development (CVWBDV) Advanced Certificate	145
Network Security – <i>See also Computer</i>		Web Application – <i>See also Internet or Computer</i>	
Networking – <i>See also Computer Networking</i>		Web Database Programmer (CVWDP) Advanced Certificate	156
Numerical Control Programming (CTNCPC) Certificate	88	Web Graphic Design (CVWBGR) Advanced Certificate	145
Nursing Assistant Skills Training (CCNA) Certificate of Completion	166	Web Technology (CTWBTC) Certificate	144
Nursing, Registered (APNURS) Associate in Applied Science Degree	166	Web User Experience (CVWUE) Advanced Certificate	145
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Career Degrees and Certificates

Degrees and Certificates

Washtenaw Community College offers more than 110 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 Transfer and University Parallel programs section, as well as Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement on page 76 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 92.





Whether your interest is in 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 hydraulics or numerical controls.

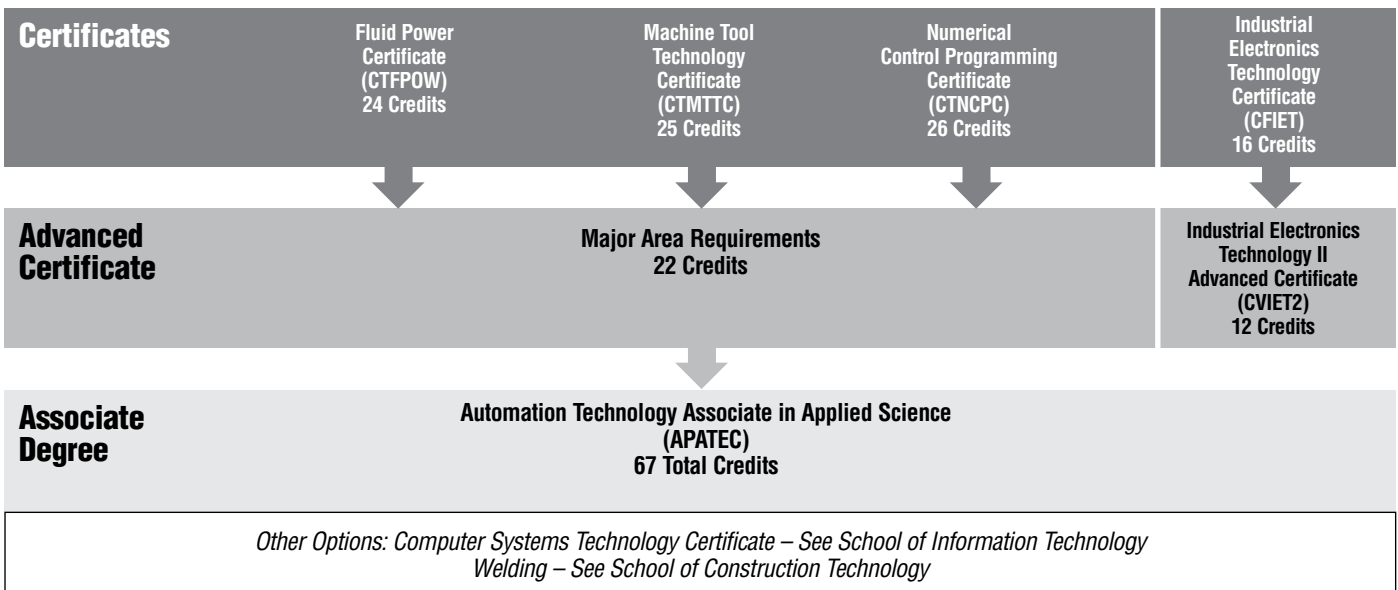
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level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

Fluid Power (CTFPOW)

Certificate

Core Courses

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

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

Major/Area Requirements

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

Minimum Credits Required for the Program:

Notes:

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

(12 credits)

- 3
- 1
- 2
- 2
- 2
- 2

(12 credits)

- 2
- 4
- 3
- 3

24

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

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
Computer Lit.	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

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

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 four 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>.

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:		67

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.*



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

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.

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 have an Academic Math Level of 3 to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

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.

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 Industrial Electronics Technology certificate or equivalent.

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

Machine Tool Technology (CTMTTC)

Certificate

Core Courses

AMS 103	Materials and Processes	(12 credits)	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

CAD 105	Blueprint Reading and Analysis	(13 credits)	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.uccnet.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.

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>.



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.

The next level, an Associate in Applied Science, is available for some programs.

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

Certificate

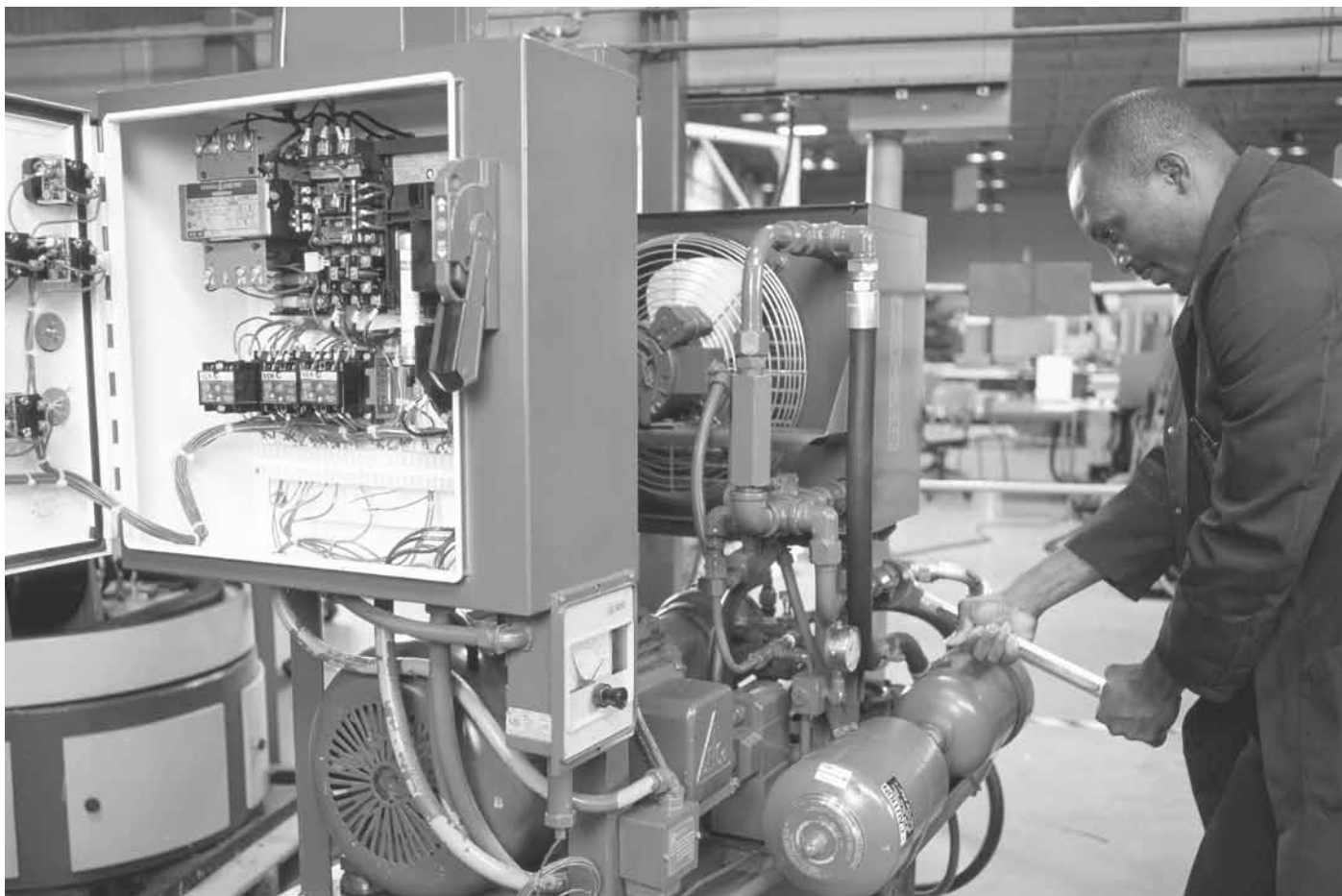
Apprentice Completion Certificate
(CTAC)
24 Credits

Most certificates can lead to an Associate in Applied Science Degree in Occupational Studies.

Associate Degrees

Journeyman Industrial
Associate in Applied Science
(APJIM)
60 Credits

Occupational Studies
Associate in Applied Science
(APOST)
60 Credits



APPRENTICESHIP AND OCCUPATIONAL 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

Complete sponsored apprenticeship program in technical or trade-related coursework.

Minimum Credits Required for the Program:

Notes:

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

(24 credits)

24-36

24

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

Writing Elective(s)
Speech Elective(s)
Math Elective(s)
Nat. Sci. Elective(s)
Soc. Sci. Elective(s)
Arts/Human. Elective(s)
Computer Lit. Elective(s)

Major/Area Requirements

Complete the Apprenticeship Completion Certificate (CTAC), or journeyman-approved coursework in a technical or trade-related area

Elective Take additional credits as needed if total program credits are below 60.

Minimum Credits Required for the Program:

(21 credits)

3-4

3

3-4

3-4

3

3

3

(39 credits)

24-36

15

60

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.

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>.

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 (3-4)
- Speech (3)
- Math (3-4)
- Nat. Sci. (3)
- Soc. Sci. (3)
- Arts/Human. (3)
- Computer Lit. (3)

21-24

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

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.

Occupational Studies (APOST)

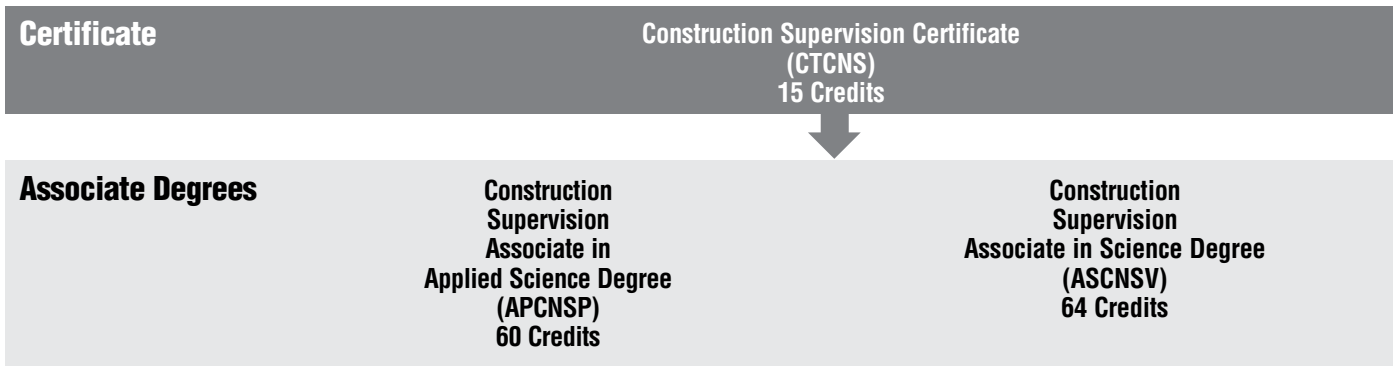
This program allows students to earn an Associate in Applied Science degree by building on occupational/technical courses and certificates. This option can be selected if an associate degree is required or preferred as a condition for employment or advancement in a field. The program also allows students 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>.



ARTICULATED UNION BUILDING TRADE PROGRAMS

These programs are restricted to members of approved union building trade apprenticeship programs, including United Association (UA).



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 articulated union building trade apprenticeship programs 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 articulated union building trade apprenticeship programs.

ARTICULATED UNION BUILDING TRADE PROGRAMS

These programs are restricted to members of Articulated Union Building Trade Apprenticeship Programs.

Construction Supervision (APCNSP)

Associate in Applied Science Degree

General Education Requirements

(22 credits)

Writing	Elective(s)	4
Speech	Elective(s) ¹	3
Math	Elective(s) ²	3-4
Nat. Sci.	Elective(s) ³	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Computer Lit.	Elective(s)	3

¹ UA students may use UAT 210 Public Speaking (1.5 credits) and UAT 213 Planning and Presenting Lessons (1.5 credits)

² UA students may use APP 113 Math for Pipe Trades (3 credits)

³ UA students may use SCI 102 Applied Science (3 credits)

Major/Area Requirements

(19 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:

19

Complete an apprenticeship program concentration in plumbing, pipefitting, HVAC, sprinkler fitting, ironworking, bricklaying, tile setting or other approved union building trade listed below. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Electives Credits completed for a minimum of 60 credits:

0-4

Minimum Credits Required for the Program:

60

Construction Supervision (APCNSP)

This program gives apprentice and journey-level members of the articulated union building trade apprenticeship programs 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; 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: The program is only open to active members of articulated union building trade apprenticeship programs.

Construction Supervision Options

Architectural and Ornamental Ironworker (AIOW) (19 credits)

IWA 120 Introduction to Ironwork	3
IWA 122 Ironworker - General Rigging	2
IWA 131 Introduction to Metal Building	2
IWA 161 Introduction to Architectural and Ornamental Ironwork	2
IWA 201 Introduction to Welding	3
IWA 224 Labor and Trade History	1
IWA 265 Advanced Architectural and Ornamental Ironwork	6

Brick and Block Laying Apprenticeship (BBLA) (25 credits)

BAC 100 Labor and Trade Union History and Impacts	1
BAC 101 Safety Practices	2
BAC 102 Professional Skills Development	2
BAC 110 Introduction to Brick and Blocklaying Apprenticeship	3
BAC 111 Introduction to Masonry Construction	2
BAC 112 Mortar Manipulation	3
BAC 210 Introduction to Blocklaying	3
BAC 211 Introduction to Bricklaying	3
BAC 212 Masonry Wall Construction	3
BAC 213 Masonry Construction Techniques and Restoration	3

HVAC Specialty (HVTC) (26 credits)

UAE 140 Introduction to HVACR Service Technician Practices	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

Journeyman Ironworker (JMIW) (26 credits)

IWA 120 Introduction to Ironwork	3
IWA 122 Ironworker - General Rigging	2
IWA 131 Introduction to Metal Building	2
IWA 141 Introduction to Reinforcing Ironwork	2
IWA 155 Rigging/Machinery Mover II	3
IWA 161 Introduction to Architectural and Ornamental Ironwork	2
IWA 172 Introduction to Structural Features	4
IWA 201 Introduction to Welding	3
IWA 224 Labor and Trade History	1
IWA 272 Advanced Structural Features	3

Metal Building Erector (MTBE) (19 credits)

IWA 120 Introduction to Ironwork	3
IWA 122 Ironworker - General Rigging	2
IWA 131 Introduction to Metal Building	2
IWA 161 Introduction to Architectural and Ornamental Ironwork	2
IWA 172 Introduction to Structural Features	4
IWA 201 Introduction to Welding	3
IWA 224 Labor and Trade History	1
IWA 235 Advanced Metal Building	2

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

Construction Supervision (ASCNSV)

Associate in Science Degree

General Education Requirements

Writing	Elective(s)	6-7
Speech	Elective(s) ¹	3
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
Computer Lit.	Elective(s)	3

¹ UA students may use UAT 210 Public Speaking (1.5 credits) and UAT 213 Planning and Presenting Lessons (1.5 credits)

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: 19

Complete an apprenticeship program concentration in plumbing, pipefitting, HVAC, sprinkler fitting, ironworking, bricklaying, tile setting or other approved union building trade listed below. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Minimum Credits Required for the Program: 64

Construction Supervision (ASCNSV)

This program gives apprentice and journey-level members of the articulated union building trade apprenticeship programs 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 articulated union building trade apprenticeship programs.

<p>Plumber Specialty (PLUM) (26 credits)</p> <p>UAP 100 Introduction to Plumbing Practices 3</p> <p>UAP 102 Introduction to Arc Welding, Soldering, and Brazing 3</p> <p>UAP 104 Drawing Interpretation and Plan Reading 2</p> <p>UAP 106 Oxy Fuel Cutting and Shielded Arc Welding 2</p> <p>UAP 108 Water Supply and Drainage 2</p> <p>UAP 110 Customer Service Techniques 2</p> <p>UAP 112 Plumbing Fixtures and Appliances 3</p> <p>UAP 114 Plumbing Codes and Regulations 3</p> <p>UAP 116 Medical Gas and Backflow Prevention Techniques 3</p> <p>UAP 118 Advanced Plumbing Practices 3</p> <p>Reinforcing Ironworker (REIW) (19 credits)</p> <p>IWA 120 Introduction to Ironwork 3</p> <p>IWA 122 Ironworker - General Rigging 2</p> <p>IWA 141 Introduction to Reinforcing Ironwork 3</p> <p>IWA 201 Introduction to Welding 3</p> <p>IWA 224 Labor and Trade History 1</p> <p>IWA 241 Advanced Reinforcing Ironwork 7</p>	<p>Rigger/Machinery Mover (RGMM) (19 credits)</p> <p>IWA 120 Introduction to Ironwork 3</p> <p>IWA 122 Ironworker - General Rigging 2</p> <p>IWA 151 Rigging/Machinery Mover I 3</p> <p>IWA 155 Rigging/Machinery Mover II 3</p> <p>IWA 191 Reinforced Iron and Structures for Rigging 4</p> <p>IWA 201 Introduction to Welding 3</p> <p>IWA 224 Labor and Trade History 1</p> <p>Sprinkler Fitter Specialty (SPRF) (26 credits)</p> <p>UAR 160 Introduction to Sprinkler Fitter Practices 3</p> <p>UAR 162 Basic Drawing and Introduction to Automatic Sprinklers 3</p> <p>UAR 164 Reading Automatic Sprinkler Piping Drawings 2</p> <p>UAR 166 Installation of Sprinkler Systems 2</p> <p>UAR 168 Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters 2</p> <p>UAR 170 Sprinkler Water Supply and The Automatic Sprinkler 2</p> <p>UAR 172 Types of Fire Protection Systems and Alarms 3</p> <p>UAR 174 Special Application Sprinkler Systems and Hydraulics 3</p> <p>UAR 176 Human Relations 3</p> <p>UAR 178 Technical Writing 3</p>	<p>Tile Mechanics (TILM) (25 credits)</p> <p>BAC 100 Labor and Trade Union History and Impacts 1</p> <p>BAC 101 Safety Practices 2</p> <p>BAC 102 Professional Skills Development 2</p> <p>BAC 120 Introduction to Tile Mechanic Apprenticeship 1</p> <p>BAC 121 Introduction to Tile Mechanic 3</p> <p>BAC 122 Basic Tile Setting 4</p> <p>BAC 220 Wall Tile Installation 3</p> <p>BAC 221 Floor and Stair Tile Installation 3</p> <p>BAC 222 Applications for Tile Installation 3</p> <p>BAC 223 Tile Layout, Techniques and Restoration 3</p>
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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.

Associate Degrees

Industrial Training Associate in Applied Science Degree (APITRN)
60 Credits

Industrial Training Associate in Science Degree (ASINDT)
68 Credits

Sustainable Technologies in HVACR Associate in Applied Science Degree (APSTH)
61 Credits

Industrial Training (APITRN)

General Education Requirements

		(22 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
Computer Lit.	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

(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.

Associate in Applied Science Degree

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; 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

Industrial Training Options

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

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

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

Sustainable Technologies in HVACR (APSTH)

Associate in Applied Science Degree

General Education Requirements		(22 credits)
ENG 100	Introduction to Technical and Workplace Writing	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
Computer Lit.	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		(13 credits)
BMG 205	Creating the Customer Experience	3
MTH 169	Intermediate Algebra	4
UAE 210	Advanced Electronics and DDC Systems	3
UAE 220	Environmental Technology in HVACR	3

Minimum Concentration Credits Required for the Program: 26

Complete an apprenticeship program concentration in HVAC. Upon completion of this, students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the apprentice program concentration requirement.

Sustainable Technologies in HVACR Concentrations		
HVAC Specialty (HVTC)	(26 credits)	
UAE 140 Introduction to HVACR Service	3	UAE 148 Electrical Controls 2
UAE 142 Soldering and Brazing	3	UAE 150 DC Electronics 2
UAE 144 Refrigeration	2	UAE 152 Advanced Electrical Controls and Pneumatic Controls 3
UAE 146 Air Conditioning	2	UAE 154 Advanced Air Conditioning and Refrigeration 3
		UAE 156 Air and Water Balancing and Motor Alignment 3
		UAE 158 Advanced HVACR Practices 3

Minimum Credits Required for the Program: 61

Sustainable Technologies in HVACR (APSTH)

The Sustainable Technologies in HVACR program is designed for journeyman level HVACR technicians who are ready to complete their associate's degree. This program covers advanced electrical and Direct Digital Controls and covers current and emerging green technologies. The program also focuses on the customer experience, including managing customer relationships and written communications. This program prepares students to take the Green Energy Awareness certification test sponsored by the Green Mechanical Council.

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 maintain a minimum grade of "C."

UNITED ASSOCIATION

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

Industrial Training (ASINDT)

Associate in Science Degree

General Education Requirements

(30 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
Computer Lit.	Elective(s)	3

*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 (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

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	2
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







If you are looking for the best technical training in the automotive or motorcycle field, 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 introductory and advanced certificate programs, as well as associate degrees, will enhance your personal and professional qualifications. These programs offer the perfect blend of classroom and hands-on education not available in many other educational settings.

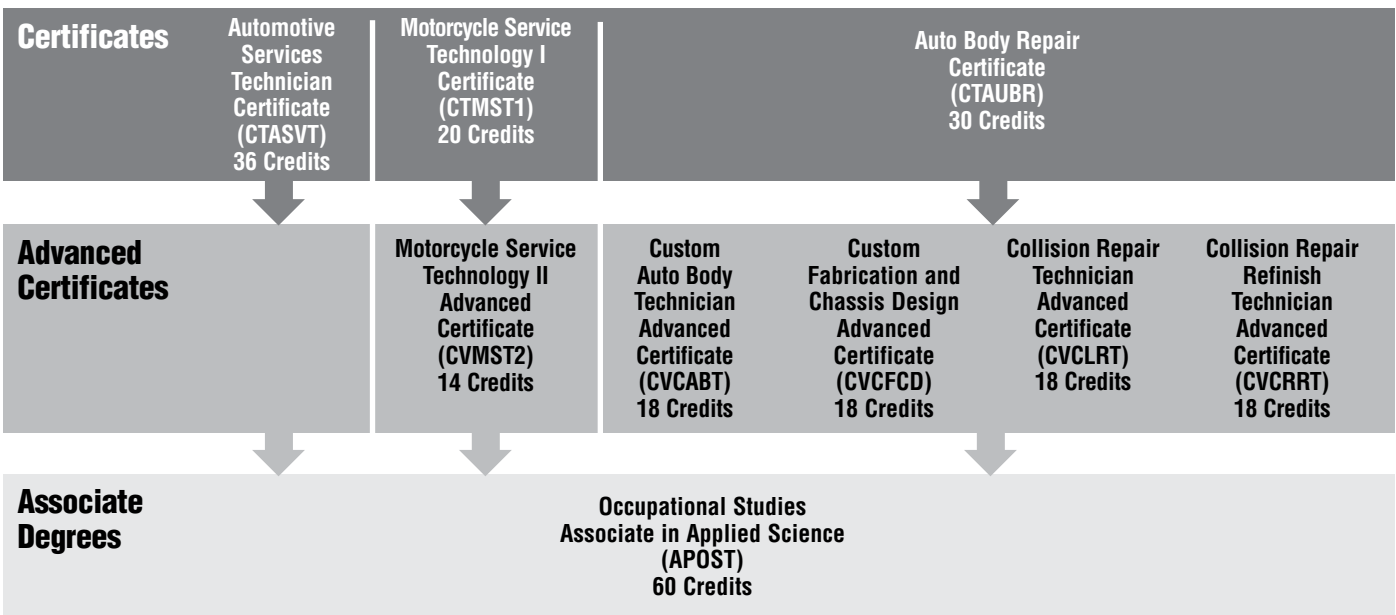
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level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



Other Options: Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies; 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

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

(30 credits)

Minimum Credits Required for the Program:

30

Auto Body Repair (CTAUBR)

This certificate will appeal to a wide array of automobile enthusiasts. Only aspiring body technicians and painters, individuals with an interest in custom cars, hobbyists, and those wishing to start a career in the collision repair industry, need apply. Through the use of NATEF approved curriculum, students will develop core skills such as dent removal, panel replacement, welding, and automobile refinishing techniques and collision-related mechanical repair. Emphasis is placed on preparing students for employment in an ever-changing workplace that adheres to A.S.E. and I-Car standards associated with the collision repair industry. This certificate also provides a stepping-stone to WCC's Advanced Auto Body certificates.

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>.



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, 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: 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, 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: 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.

The automotive certificate prepares the student for work as an automotive services technician, diagnosing and repairing malfunctions in automobile systems.

Automotive Services Technician (CTASVT)

Certificate

Major/Area Requirements

(36 credits)

ASV 151	Automotive Service I	4
ASV 152	Automotive Service II	4
ASV 153	Automotive Service III	4
ASV 154	Automotive Service IV	4
ASV 155	Automotive Service V	4
ASV 254	Suspension and Steering	2
ASV 255	Brakes	2
ASV 256	Electrical and Electronic Systems	4
ASV 258	Engine Drivability	2
Select 2 credits from the following:		
ABR 116	The Evolution of the Automobile	2
ASV 157	Repair Facility Operations and Advising	2
MTT 102	Machining for Auto Applications	2
WAF 105	Welding for Art and Engineering	2
Select 4 credits from the following:		
ASV 157	Repair Facility Operations and Advising	2
ASV 174	ASV Co-op Education I	1-3
ASV 251	Engine Diagnosis and Repair	2
ASV 252	Automatic Transmissions	2
ASV 253	Manual Drivetrain and Axles	2
ASV 257	Heating and Air Conditioning Systems	2
ASV 259	Diagnosis and Repair	4
ASV 261	Alternative Fuels and Hybrid Vehicles	2
ASV 262	Diesel Technology	2
ASV 263	Vehicle Performance	2
ASV 269	Performance Automotive	4

Minimum Credits Required for the Program:

36

Automotive Mechanics (CTASVT)

This program prepares students for employment as a certified automotive technician. Students will diagnose and repair malfunctions in automobile engines, suspensions and steering systems, brakes, electrical and electronic systems and engine drivability issues. This program also offers opportunities to explore vehicle performance, diesel, alternative fuel vehicles, hybrid vehicles and to participate in the building of performance vehicles. The program prepares the student for the State of Michigan Mechanic Certification tests as well as the National Institute for Automotive Service Excellence (ASE) Certification Exams. Students can earn an AAS degree by completing the requirements for the Occupational Studies Program.

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>.



CUSTOM CARS AND 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

CCC 200	Custom Auto Body Technician I
CCC 220	Custom Auto Body Technician II
CCC 240	Custom Auto Body Technician III
CCC 260	Custom Auto Body Technician IV

(18 credits)

4
4
4
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 (CVCFCFD)

Advanced Certificate

Major/Area Requirements

CCC 201	Custom Fabrication and Chassis Design I
CCC 221	Custom Fabrication and Chassis Design II
CCC 241	Custom Fabrication and Chassis Design III
WAF 215	Welding V Advanced GTAW and GMAW

(18 credits)

4
4
6
4

Minimum Credits Required for the Program:

18

Custom Fabrication and Chassis Design (CVCFCFD)

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

MST 110	Motorcycle Service Technology I
MST 120	Motorcycle Service Technology II
MST 130	Motorcycle Service Technology III
MST 140	Motorcycle Service Technology IV
MTT 102	Machining for Auto Applications
WAF 105	Welding for Art and Engineering

(20 credits)

4
4
4
4
2
2

Minimum Credits Required for the Program:

20

Motorcycle Service Technology I (CTMST1)

This 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 maintenances, 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

MST 210	Performance Engine Technology
MST 220	Dynamometer Operations
MST 225	Advanced Dynamometer Tuning Systems
WAF 103	Heli-ARC Welding

(14 credits)

4
4
4
2

Minimum Credits Required for the Program:

14

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.



SCHOOL OF AUTOMOTIVE AND MOTORCYCLE TECHNOLOGY



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.

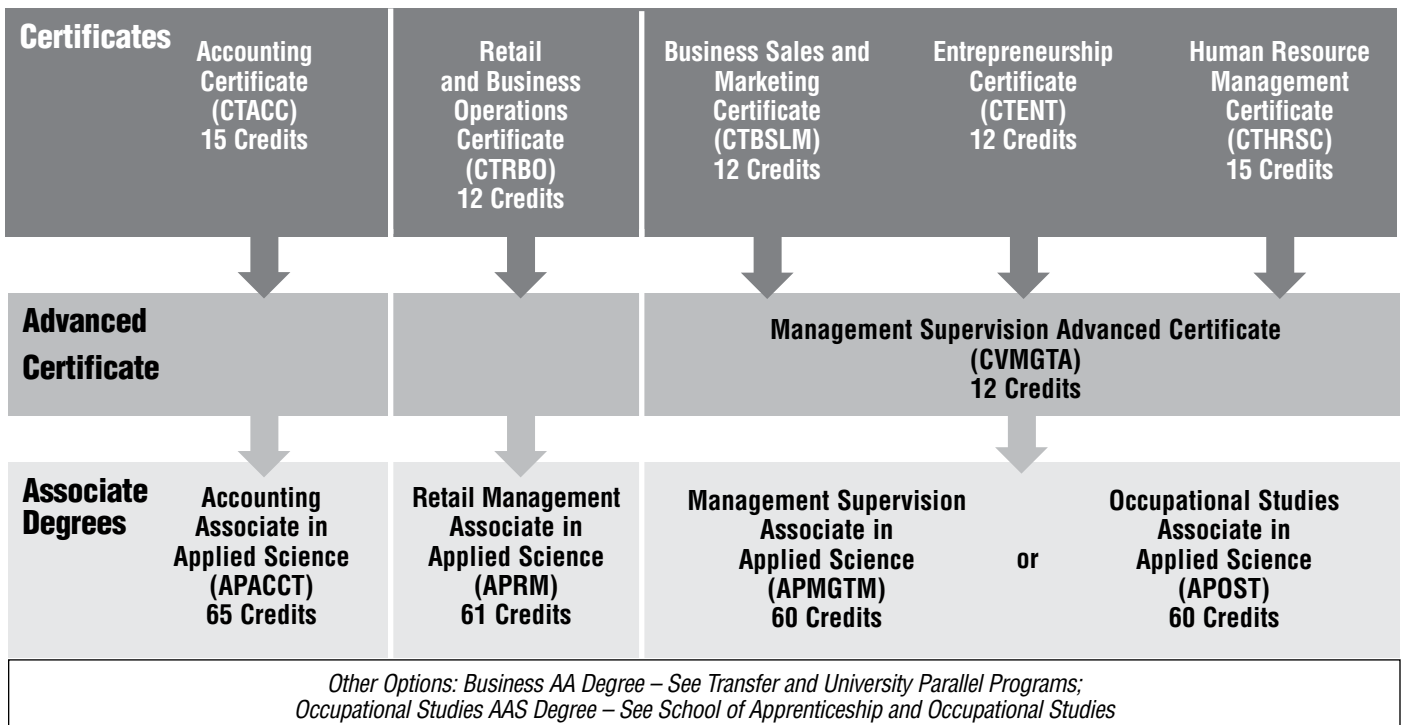
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level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



ENTREPRENEURSHIP

Learn how to recognize market opportunities and plan a small business through completion of this certificate program.

Entrepreneurship (CTENT)

Certificate

Major/Area Requirements

BMG 101	The Business of Your Career
BMG 102	The Student Enterprise Zone
BMG 109	Starting Your Business
BMG 201	Entrepreneurship II - Market Planning

Minimum Credits Required for the Program:

(12 credits)

3
3
3
3
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.

SCHOOL OF BUSINESS AND ENTREPRENEURIAL STUDIES



BUSINESS

Choose one or more areas in the field of business as you prepare for your future.

Business Sales and Marketing (CTBSLM)

Certificate

Major/Area Requirements		(12 credits)
BMG 160	Principles of Sales	3
BMG 205	Creating the Customer Experience	3
BMG 207	Business Communication	3
BMG 250	Principles of Marketing	3

Minimum Credits Required for the Program: 12

Business Sales and 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.

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.

Retail and Business Operations (CTRBO)

Certificate

Major/Area Requirements		(12 credits)
BMG 206	Retail Principles and Practices	3
BMG 211	Merchandising and Inventory Management	3
BMG 273	Managing Operations	3
BMG 275	Business and Supply Chain Analytics	3

Minimum Credits Required for the Program: 12

Retail and Business Operations (CTRBO)

It takes a large number of people working in customer-facing roles as well as behind-the-scenes in a retail operation to keep employees, customers and investors happy. Students who complete this certificate will be knowledgeable, capable and enthusiastic employees who can procure, display and deliver products and services to customers profitable in a retail setting. Students will gain the skills and expertise needed to manage retail projects as well as make and communicate decisions related to human resources, profits, productivity and processes when managing the operations aspect of a business unit.



Management Supervision (CVMGTA)

Advanced Certificate

Major/Area Requirements

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

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
Computer Lit.	Elective(s)	3

(21 credits)

Major/Area Requirements

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 6 credit hours of business courses in the BMG or RES discipline.	6
Elective	Complete an additional 6 credit hours in the disciplines of ACC, BMG, CIS, INP and/or RES.	6

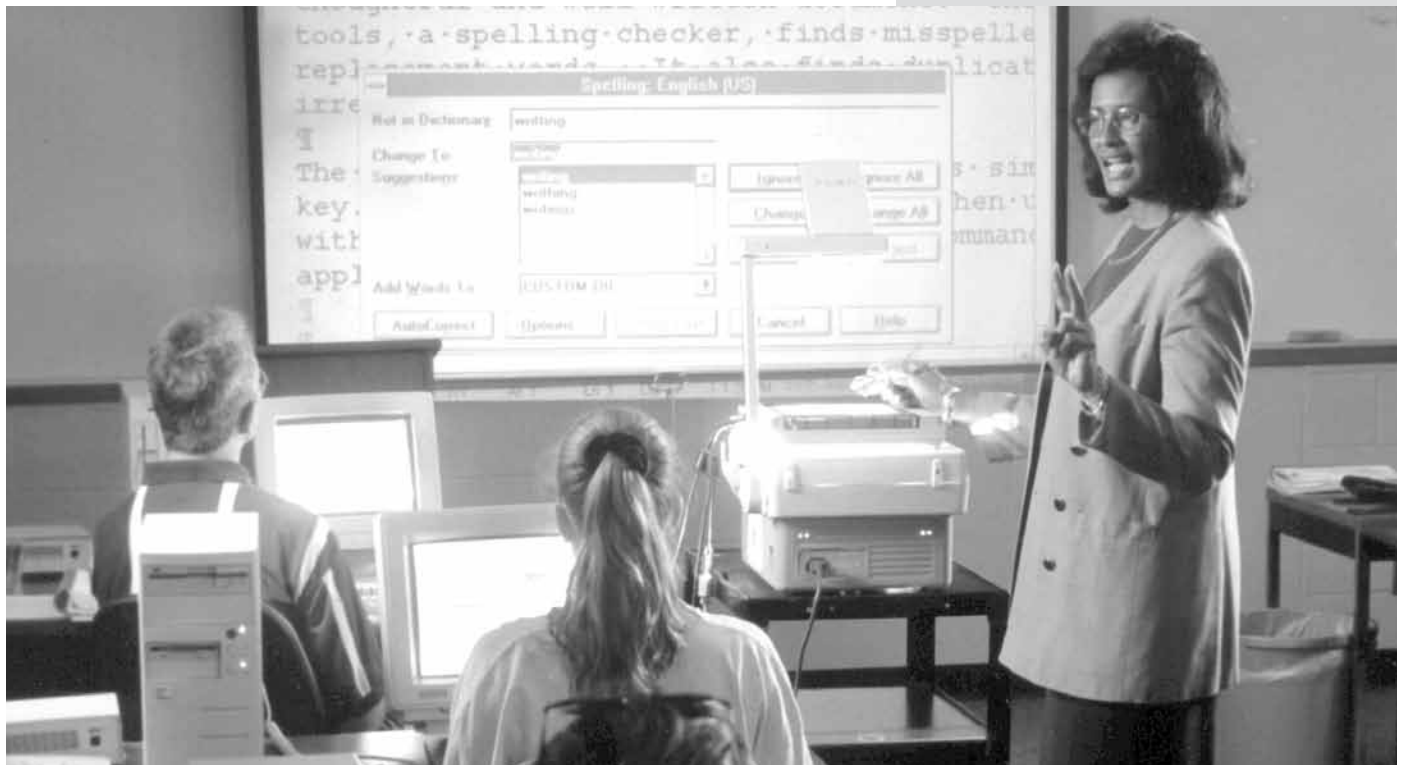
(39 credits)

Minimum Credits Required for the Program: 60

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>.



Retail Management (APRM)

Associate in Applied Science Degree

General Education Requirements (24 credits)

ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 125 or	Everyday College Math	
MTH 160 or	Basic Statistics	
MTH 176 or	College Algebra	
MTH 181 or	Mathematical Analysis I	4
BIO 101 or	Concepts of Biology	
GLG 100 or	Introduction to Earth Science	
PHY 100	Physics for Elementary Teachers	4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
CIS 100 or	Introduction to Computers and Software Applications	
CIS 110	Introduction to Computer Information Systems	3

Major/Area Requirements (37 credits)

BMG 155	Business on the Internet	3
BMG 205	Creating the Customer Experience	3
BMG 206	Retail Principles and Practices	3
BMG 207	Business Communication	3
BMG 211	Merchandising and Inventory Management	3
BMG 230	Management Skills	3
BMG 273	Managing Operations	3
BMG 275	Business and Supply Chain Analytics	3
BMG 295	Capstone: Retail Management	1
BMG 160 or	Principles of Sales	
BMG 250	Principles of Marketing	3
Elective	Choose 3 of the following courses: ACC 111, BMG 111, BMG 140, BMG 200, BMG 220, BMG 240, BMG 279, BMG 291	9

Minimum Credits Required for the Program: 61

Notes:
Students who plan to transfer should meet with an advisor to ensure MACRAO requirements are met.

Management Supervision (APMGTM)

This program prepares students to be knowledgeable, capable and enthusiastic employees who can handle both customer-facing and behind-the-scenes jobs in a retail setting. These retail jobs can be divided into four main areas: customer relations, store upkeep, product handling and administration. Students who complete this associates degree will have had exposure to all four of these areas and they will gain the skills and knowledge to project a can-do, professional and results-focused attitude.

Program Admission Requirements: Students must have:

- Academic Math Level of 2 to enroll in MTH 125
- Academic Math Level of 3 to enroll in MTH 160
- Academic Math Level of 4 to enroll in MTH 176 or MTH 181

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 184	Spreadsheet Software Applications I	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: In order to enroll in ACC 111, students must complete MTH 125, MTH 160, MTH 176 or MTH 181 with a minimum grade of "C."

Accounting (APACCT)

Associate in Applied Science Degree

General Education Requirements

(23 credits)

ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 125 or	Everyday College Math	
MTH 160 or	Basic Statistics	
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
CIS 110	Introduction to Computer Information Systems	3

Major/Area Requirements

(36 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 184	Spreadsheet Software Applications I	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.

Accounting (APACCT)

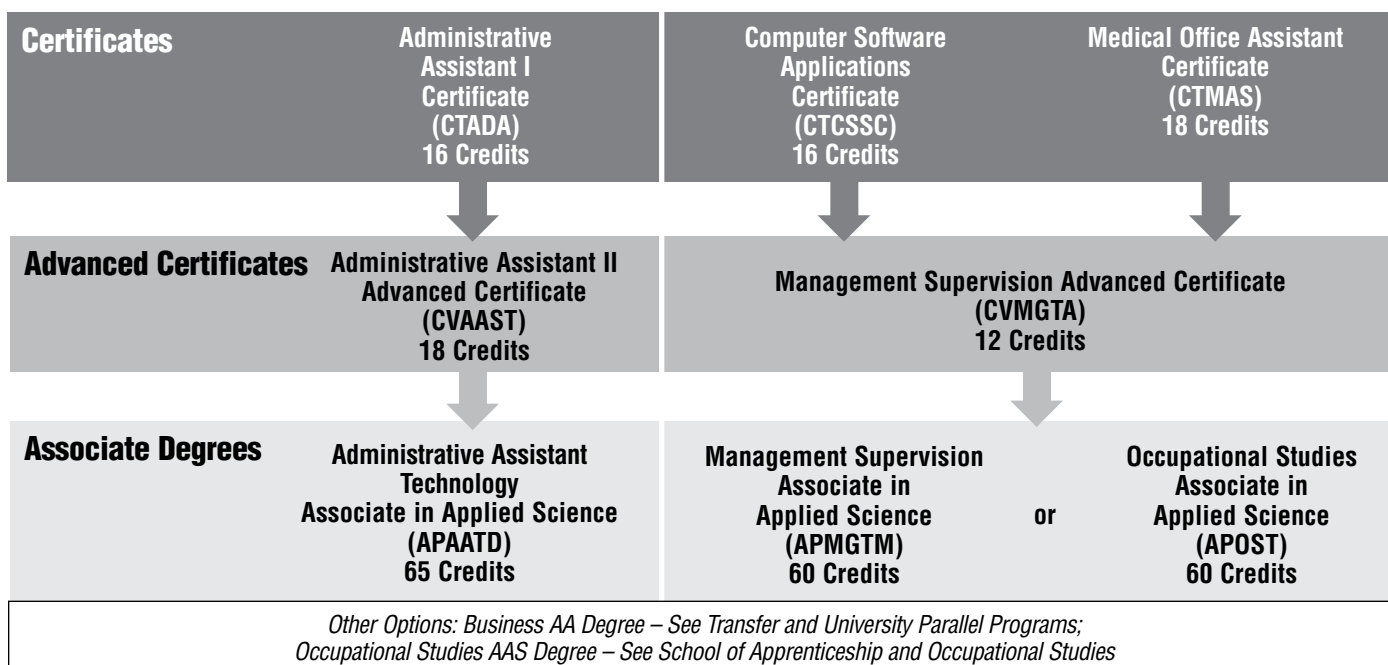
This program prepares students for jobs with duties assigned to a beginning accountant such as verifying additions, checking audits, postings, and vouchers, analyzing accounts, and preparing financial statements. Many of the courses transfer to four-year colleges, including programs at Eastern Michigan 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: Students must have:

- Academic Math Level of 2 to enroll in MTH 125
- Academic Math Level of 3 to enroll in MTH 160
- Academic Math Level of 4 to enroll in MTH 176 or MTH 181

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.



SCHOOL OF BUSINESS AND ENTREPRENEURIAL STUDIES

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 184	Spreadsheet Software Applications I	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 184	Spreadsheet Software Applications I	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.

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>.

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		(18 credits)
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
BOS 284	Spreadsheet Software Applications II	3
Minimum Credits Required for the Program:		18

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.

Program Admission Requirements: Completion of the Administrative Assistant I Certificate. Exceptions may be allowed upon consultation with a program advisor and evidence of relevant prior professional and/or academic experience.



Administrative Assistant Technology (APAATD)

Associate in Applied Science Degree

General Education Requirements

(23 credits)

ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH 125	Everyday College Math	4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
CIS 100	Introduction to Computers and Software Applications	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 184	Spreadsheet Software Applications I	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

(5 credits)

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 208	Desktop Publishing for the Office	3
BOS 250	Office Administration II	4
BOS 284	Spreadsheet Software Applications II	3

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	Clinical and Lab Procedures for Office Assistants	3
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1

Minimum Credits Required for the Program:

65

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.

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 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.



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 (23 credits)

ENG 111	Composition I	4
COM 101	Fundamentals of Speaking	3
MTH125 or	Everyday College Math	
MTH 148	Functional Math for Elementary Teachers I	4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)**	3
ENG 240 or	Children's Literature	
ENG 242	Multicultural Literature for Youth***	3
CIS 100	Introduction to Computers and Software Applications	3

*The following courses are recommended for the Natural Science Elective: AST 111, BIO 101, GLG 100, GLG 104, or SCI 101

** Students are encouraged to select SOC 100 or PSY 100 for their social science elective.

***Transfer students should consider a course from the EMU Diverse World Requirement List.

Major/Area Requirements (38 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 and 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
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
Elective	Complete electives to reach 60 credit hours.	
	Suggested courses include CCP 211 or CCP 220.	0-3

Minimum Credits Required for the Program: 61-62

Notes:

****CCP 101 must be taken before or concurrently with any other CCP course.

Child Care Professional (APCCP)

Completion of the Child Care Professional Associate in Applied Science degree qualifies students to be a director or lead teacher at a child care center in the State of Michigan. 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; Madonna 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: 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 or 133 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.





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.

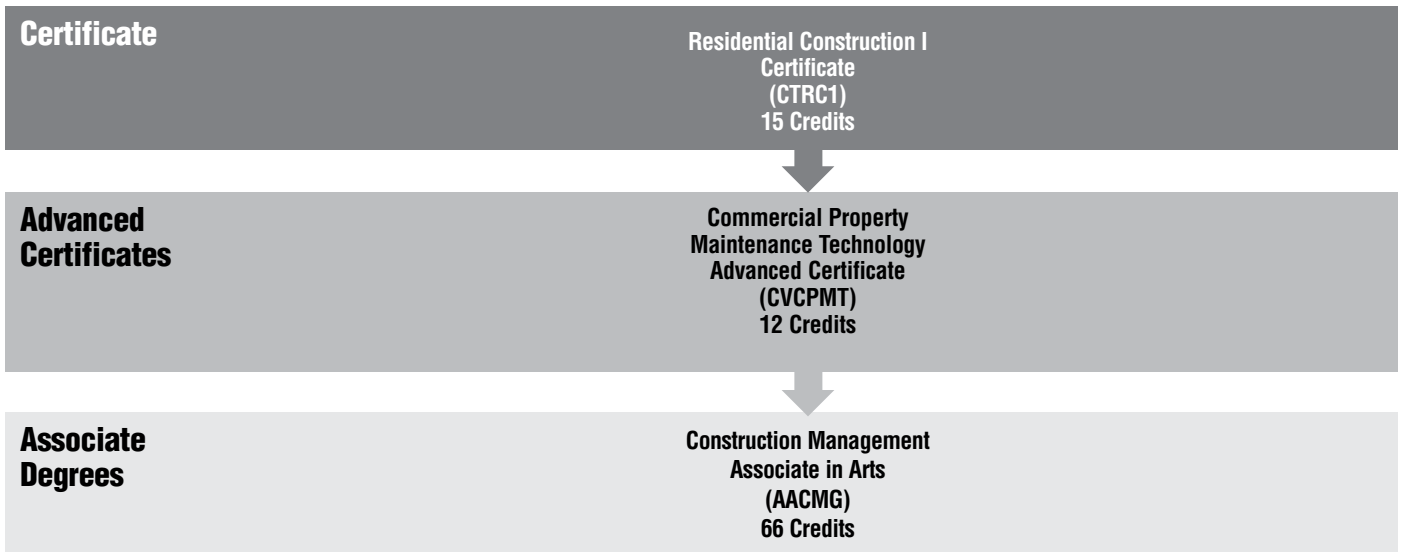
The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate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



SCHOOL OF CONSTRUCTION TECHNOLOGY

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 or Heating Ventilating and Air Conditioning 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 (36 credits)

ENG 111	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)*	3
MTH 160	Basic Statistics**	4
GLG 114	Physical Geology	4
ECO 211 and Soc. Sci.	Principles of Economics I Complete two additional courses, one in a subject other than ECO.	3 6
Arts/Human.	Elective(s)	6
CIS 100	Introduction to Computers and Software Applications	3

Major/Area Requirements (15 credits)

CMG 130	Construction Site Safety and MIOSHA Regulations	3
CMG 150	Introduction to Construction Management	3
CMG 170	Construction Graphics	3
CMG 180	Application of Construction Materials	3
CMG 200	Construction Systems	3

Required Support Courses (15 credits)

ACC 111	Principles of Accounting I	3
BMG 111	Business Law I	3
BMG 207	Business Communication	3
BMG 240	Human Resources Management	3
MTH 178	General Trigonometry	3

Minimum Credits Required for the Program: 66

Notes:

*Choose any COM course that meets General Education Requirements.

**MTH 160 should be completed at WCC to satisfy EMU's Quantitative Reasoning Requirement. If completed at EMU, MATH 110 will be required unless waived by ACT/SAT or math placement score.

Students transferring to EMU should see the articulation agreement for additional courses that can be taken at WCC.

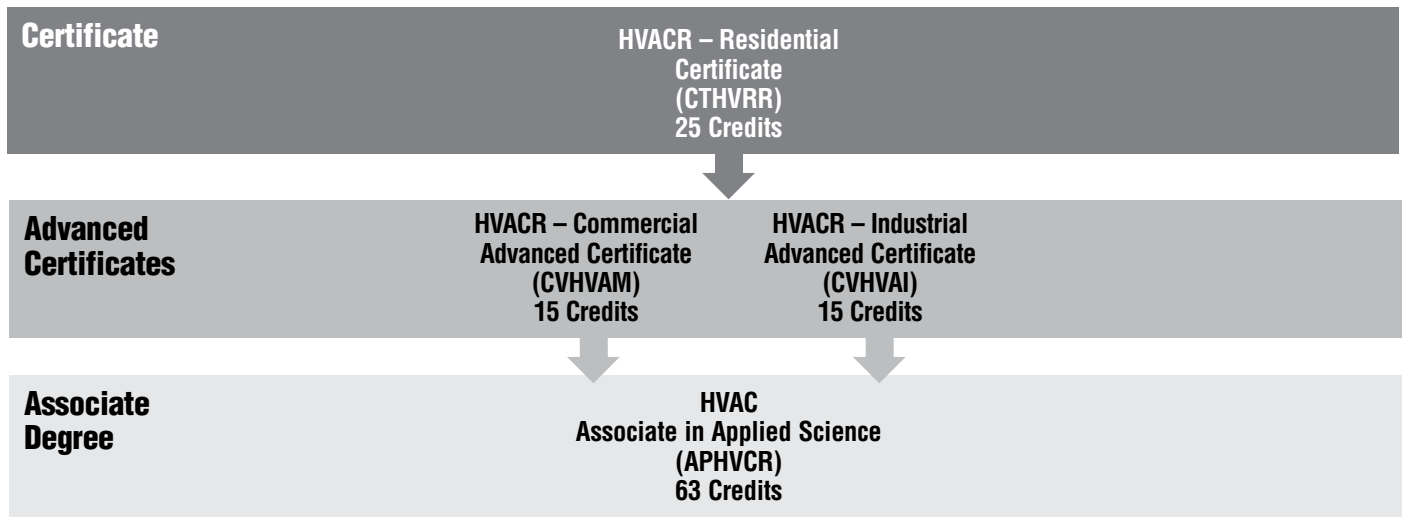
Construction Management (AACMG)

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: Students must have an Academic Math Level of 4 to enroll in CMG 150. Two years of high school algebra is recommended.

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.



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

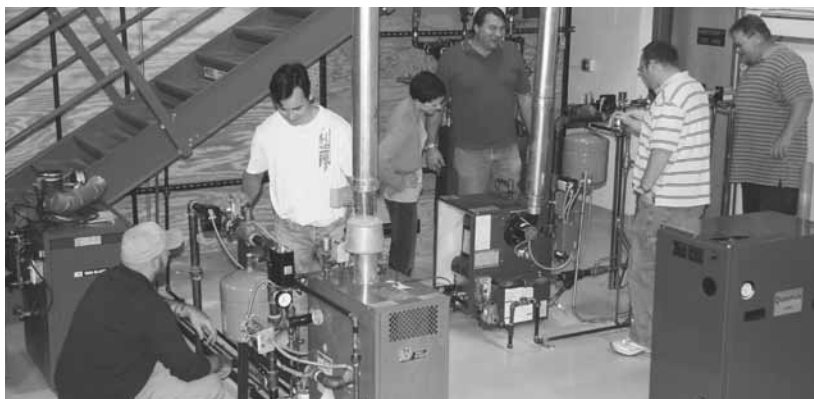
Core Courses (6 credits)

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 troubleshooting 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 Concentration 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 troubleshooting 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

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
Computer Lit.	Elective(s)	3

(21 credits)

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	HVAC 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:

63

Notes:

*Complete additional credits to bring the total to 60 credits. Students should meet with a program advisor to select an appropriate elective course.

Heating, Ventilation, Air Conditioning and Refrigeration (APHVCR)

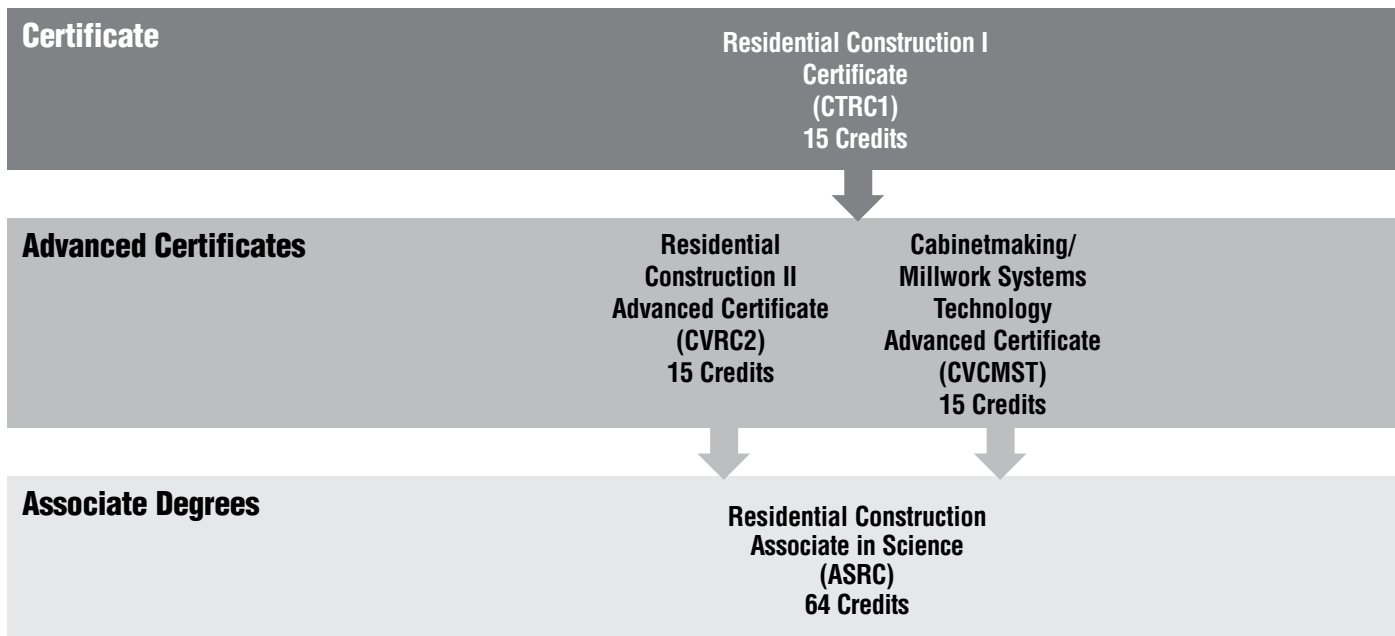
This program is a capstone to both the Heating, Ventilation, Air Conditioning and Refrigeration - Industrial and the Heating, Ventilation, Air Conditioning and Refrigeration - Commercial Advanced Certificates. It provides a rigorous heating, ventilation, air-conditioning and refrigeration (HVACR) background 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.



Residential Construction I (CTRC1)

Certificate

Major/Area Requirements

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, 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>.

Cabinetmaking/Millwork Systems Technology (CVC MST)

Advanced Certificate

Major/Area Requirements

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 (CVC MST)

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.

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 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, 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 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		(34 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
Computer Lit.	Elective(s)	3

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: 64

Notes: *SPN 111 is strongly recommended.

Residential Construction (ASRC)

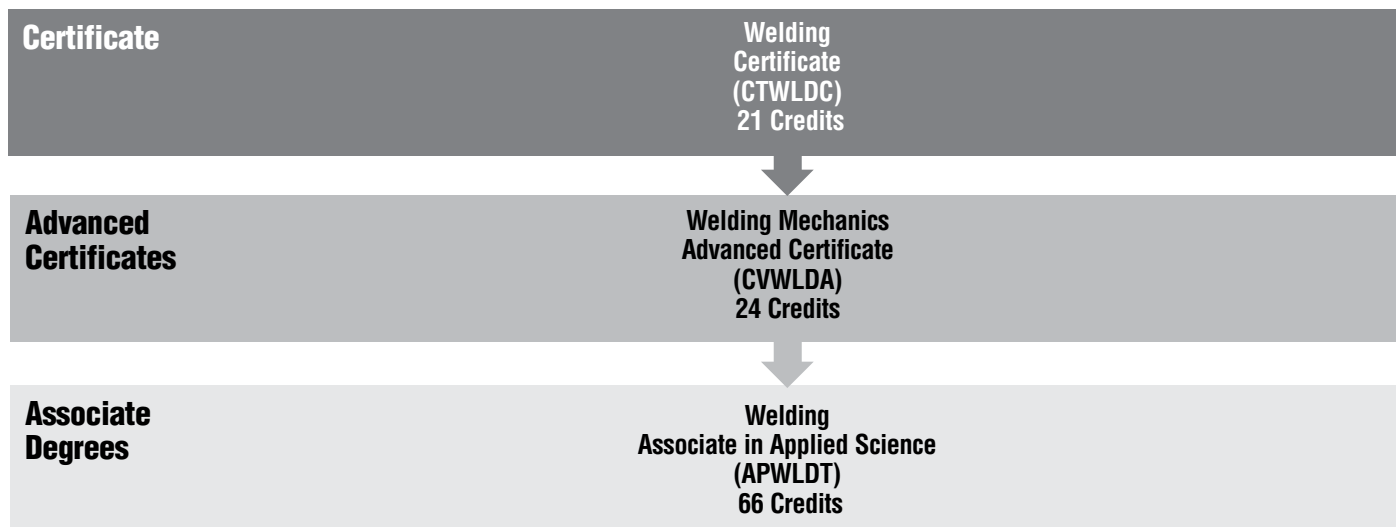
The Residential Construction program teaches students how to build a home from the ground up. The program offers a balance of classroom theory and hands on training. Students will also learn how to start up their own construction business.

Articulation: Eastern Michigan University, 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>.

Continuing Eligibility Requirements: Students must complete all general education and major area requirement courses with a grade of "C" or better.



Learn skills from beginning welding to advanced fabrication for a career as a welding maintenance mechanic.



Welding (CTWLDC)

Certificate

Major/Area Requirements

WAF 105	Welding for Art and Engineering
WAF 106	Blueprint Reading for Welders
WAF 111	Welding I Oxy-Acetylene
WAF 112	Welding II Basic ARC
WAF 123	Welding III Advanced Oxy-Acetylene (OAW)
WAF 124	Welding IV Advanced ARC (SMAW)

(21 credits)

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

WAF 200	Layout Theory Welding
WAF 210	Welding Metallurgy
WAF 215	Welding V Advanced GTAW and GMAW
WAF 226	Specialized Welding Procedures
WAF 227	Basic Fabrication
WAF 229	Shape Cutting Operations
WAF 289	MIG Welding

Minimum Credits Required for the Program:

(24 credits)

3
3
4
4
3
3
4

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

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
Computer Lit.	Elective(s)	3

*MTH 157 is recommended.

Major/Area Requirements

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: 66

(21 credits)

(45 credits)

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>.





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 in Arts degree, which is transferrable to most baccalaureate programs. This degree is described in the Transfer and University Parallel Programs section of the catalog.

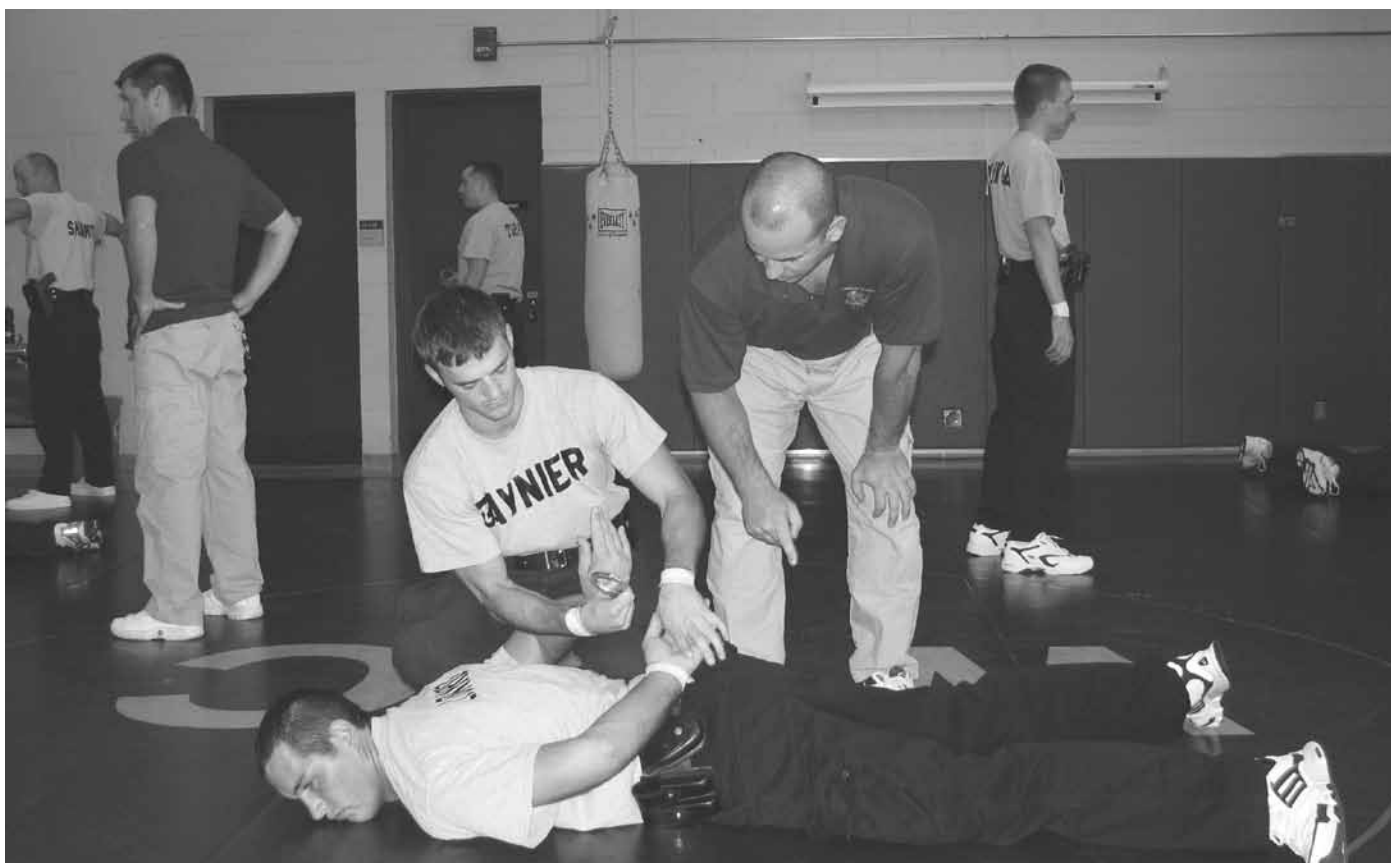
Certificate

**Police Academy
Certificate
(CTPA)
16 Credits**

**Associate
Degree**

**Criminal Justice – Law Enforcement
Associate in Applied Science
(APCJLE)
63 Credits**

Other Options: Criminal Justice Associate in Arts – See Transfer and University Parallel Programs



CRIMINAL JUSTICE AND LAW ENFORCEMENT

Considering a career in law enforcement or corrections? These programs prepare you for further study in these specialized fields.

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).

Applying for Admission to the Program: Students must have a minimum of 45 college credits prior to admission to the Police Academy.



SCHOOL OF CRIMINAL JUSTICE AND LAW ENFORCEMENT

Criminal Justice - Law Enforcement (APCJLE)

Associate in Applied Science Degree

General Education Requirements

ENG 100 or	Introduction to Technical and Workplace Writing	(23 credits)
ENG 111	Composition I	4
COM 102	Interpersonal Communication	3
MTH 151 or	Technical Algebra	
MTH 160 or	Basic Statistics	4
MTH 169	Intermediate Algebra	3
Nat. Sci.	Elective(s)	3
PSY 100 or	Introduction to Psychology	
PSY 200	Child Psychology	3
Arts/Human.	Elective(s)	3
Computer Lit.	Elective(s)	3

Major/Area Requirements

CJT 100	Introduction to Criminal Justice	(40 credits)
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:

63

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	

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.







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.

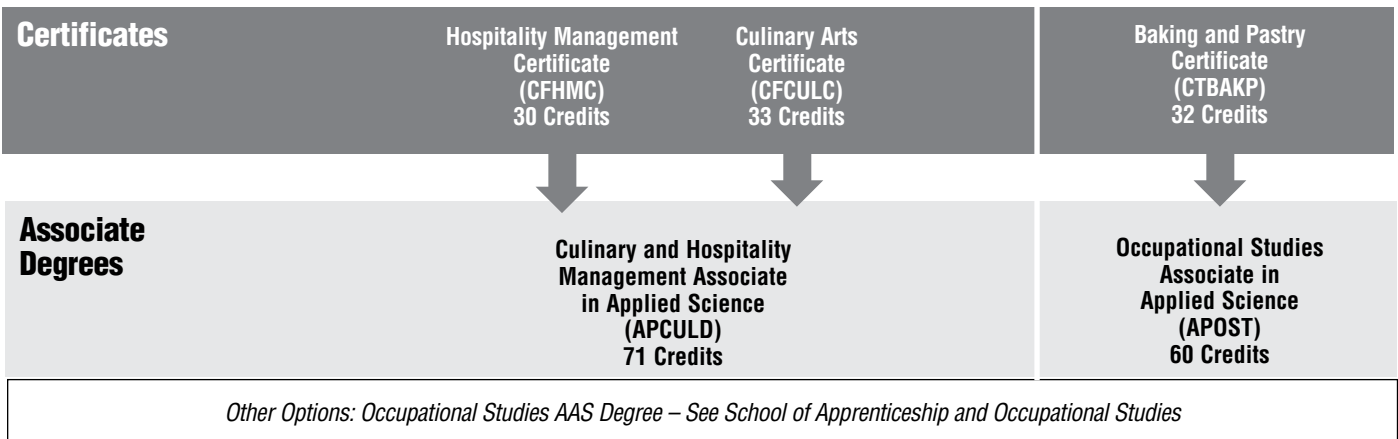
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level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

vides 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.



CULINARY ARTS AND HOSPITALITY MANAGEMENT

Develop the skills necessary for a career in the hospitality industry.

Baking and Pastry (CTBAKP)

Certificate

Major/Area Requirements

CUL 100	Introduction to Culinary Arts Industry	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 140	Bakery Management and Merchandising	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.

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 Arts 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>.

SCHOOL OF CULINARY ARTS AND HOSPITALITY MANAGEMENT



Culinary Arts (CFCULC)

Certificate

Major/Area Requirements	(33 credits)
CUL 100 Introduction to Culinary Arts Industry	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.

Culinary Arts (CFCULC)

This program prepares students for a position as a food production specialist in a hotel, restaurant, or institution, where sautéing, 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, 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>.

Hospitality Management (CFHMC)

Certificate

Major/Area Requirements	(30 credits)
BMG 207 Business Communication	3
CUL 100 Introduction to Culinary Arts Industry	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.

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 3 + 1 transfer toward a baccalaureate degree at a four-year college or university.

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>.

Culinary and Hospitality Management (APCULD)

Associate in Applied Science Degree

General Education Requirements

(19 credits)

Writing	Elective(s)	3-4
Speech	Elective(s)	3
MTH 125	Everyday College Math	4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Computer Lit.	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

(52 credits)

CUL 100	Introduction to Culinary Arts Industry	3
CUL 110	Sanitation and Hygiene**	3
CUL 114	Baking I	3
CUL 115 or	Pastry I	
CUL 124	Baking II	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 174	CUL Co-op Education I***	2
CUL 210	Gardemanger	3
CUL 220	Organization/Management of Food Systems	3
CUL 224	Principles of Cost Control	3
CUL 227	Advanced Culinary Techniques	2
CUL 228	Layout and Equipment	3
CUL 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
CUL 250	Principles of Beverage Service	3

Minimum Credits Required for the Program:

71

Notes:

**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.

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: 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>.



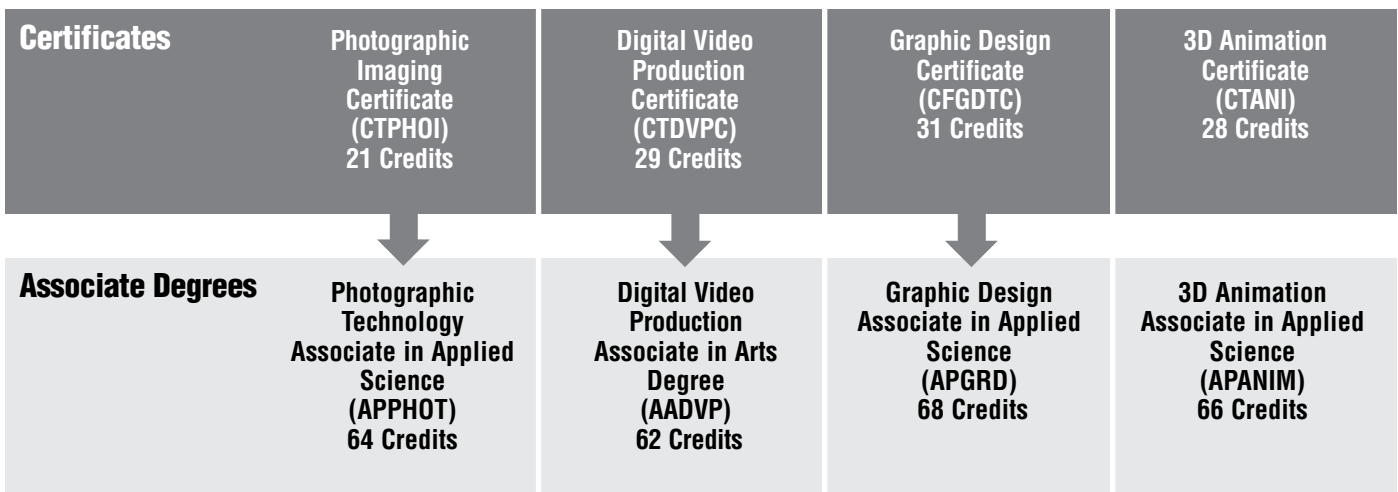


Creativity abounds in the School of Digital Media Arts which encompasses the disciplines of animation, graphic design, internet professional, photography and digital video. The programs in Digital Media Arts introduce students to foundational skills in these disciplines and prepare them for creative jobs.

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.

The next level, an Associate Degree, is available for some programs. Credit hours from the certificate can be applied to the credit hours needed for the Associate Degree.



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 (CTANI)

Certificate

Major/Area Requirements		(28 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 160	Fundamentals of Movement and Animation	4
ANI 230	Motion and Sound	2
ANI 250	3D Animation II	4
ANI 260	3D Animation III	4
GDT 140	Photoshop Graphics	4
Minimum Credits Required for the Program:		28

3D Animation (CTANI)

The 3D Animation Certificate prepares students with fundamental skills for entry-level positions in the digital 3D modeling and animation industry and is a stepping stone to the Associate Degree in 3D Animation. Foundation areas of study include visual perception of 3D form and shape, volume/weight, surface mapping and lighting, basic 3D animation and motion graphic composition.

3D Animation (APANIM)

Associate in Applied Science Degree

General Education Requirements		(21 credits)
ENG 107 or	Technical Writing I	
ENG 111	Composition I	3-4
COM 101	Fundamentals of Speaking	3
Math	Elective(s)	3-4
Nat. Sci.	Elective(s)	3-4
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Computer Lit.	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 160	Fundamentals of Movement and 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
VID 276	Advanced Video Graphics I	3
VID 280	DVD Authoring	3
Minimum Credits Required for the Program:		66

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 Production (CTDVPC)

Certificate

Major/Area Requirements (29 credits)

ENG 115	Writing for Visual Media	3
GDT 140	Photoshop Graphics	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
VID 200	Lighting	3
VID 203	Web Video	3
VID 276	Advanced Video Graphics I	3

Minimum Credits Required for the Program: 29

Digital Video Production (CTDVPC)

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.

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 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 (31 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
Computer Lit.	Elective(s)	3

Major/Area Requirements (31 credits)

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 200	Lighting	3
VID 203	Web Video	3
VID 255	Video Studio/Green Screen Effects	3
VID 270	Documentary Video Production	3
VID 276	Advanced Video Graphics I	3
VID 295	Professional Portfolio	3
Elective	Suggested elective: VID 280*	0-3

Minimum Credits Required for the Program: 62

Notes:

*This course is not required.

Digital Video Production (AADVP)

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.

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>.

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

GDT 100	Typography I
GDT 112	Graphic Communication I
GDT 130	InDesign for Print Publishing
GDT 139	Illustrator Graphics
GDT 140	Photoshop Graphics
GDT 220	Publication Design
GDT 239	Imaging and Illustration
INP 152	Web Graphics I

Minimum Credits Required for the Program:

Notes:

*See a Graphic Design faculty advisor to assist in planning a program of study.

(31 credits)

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)

General Education Requirements

ENG 107 or	Technical Writing I
ENG 111	Composition I
COM 101	Fundamentals of Speaking
MTH 125 or	Everyday College Math
MTH 151	Technical Algebra
Nat. Sci.	Elective(s)
Soc. Sci.	Elective(s)
GDT 101	History of Graphic Design
Computer Lit.	Elective(s)

Major/Area Requirements

GDT 100	Typography I
GDT 112	Graphic Communication I
GDT 130	InDesign for Print Publishing
GDT 139	Illustrator Graphics
GDT 140	Photoshop Graphics
GDT 150	Design for the Internet
GDT 220	Publication Design
GDT 239	Imaging and Illustration
GDT 252	Advanced Digital Studio
GDT 259	Graphic Communication II
GDT 290	Professional Practices
INP 152	Web Graphics I

Minimum Credits Required for the Program:

(21 credits)

(47 credits)

3-4

3

3-4

3-4

3

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68

Associate in Applied Science Degree

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>.

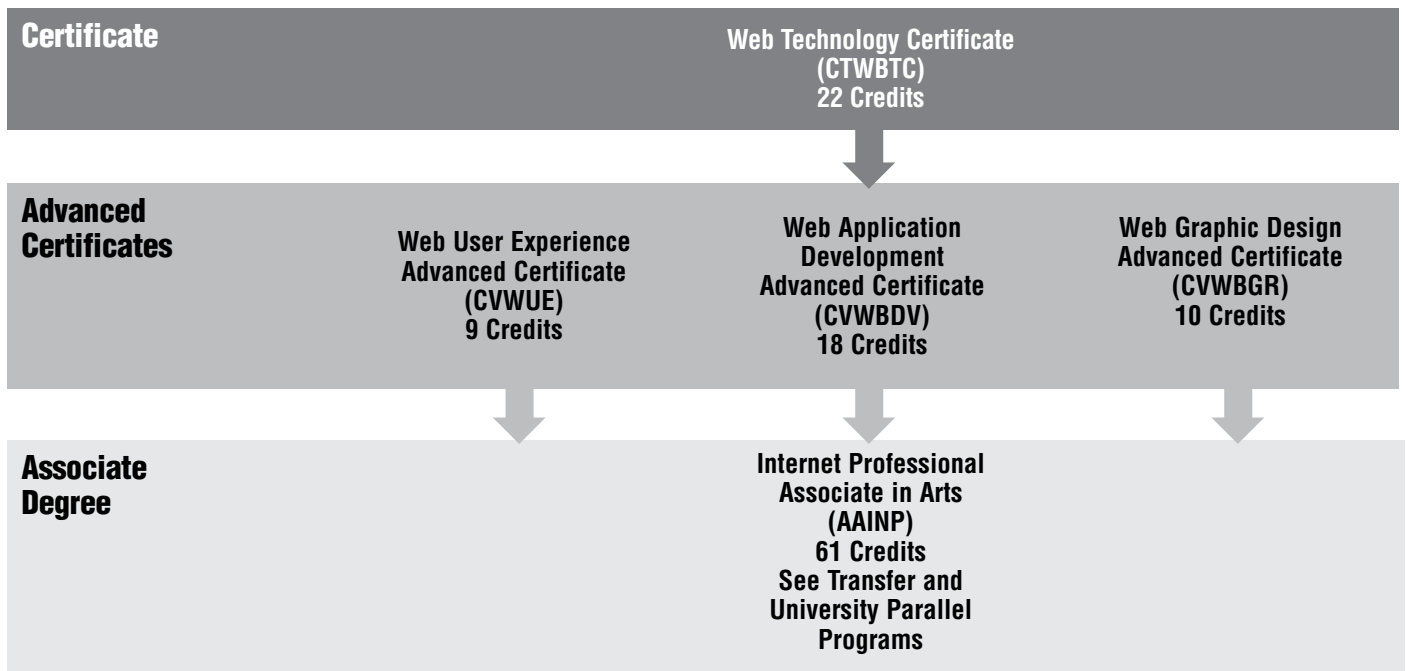
Program Admission Requirements: Basic proficiency with desktop computers is required to enroll in GDT computer-based courses. Students with no or minimal computer skills are encouraged to take GDT 105, Introduction to Mac Graphics.

Note: Graphic Design computer-based courses are taught on Macintosh computers.

SCHOOL OF DIGITAL MEDIA ARTS

INTERNET PROFESSIONAL

Join the Web development industry through the completion of these certificates and degree.



Web Technology (CTWBTC)

Certificate

Major/Area Requirements

GDT 140	Photoshop Graphics
INP 150	Web Coding I
INP 152	Web Graphics I
INP 153	Designing User Experience I
INP 170	Web Coding II
INP 182	Web Graphics II
INP 203	Designing User Experience II

Minimum Credits Required for the Program:

(22 credits)

Web Technology (CTWBTC)

4
3
3
3
3
3
3

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, 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 course or equivalent course in basic computer skills, including use of the Internet.

Web Application Development (CVWBDDV)

Advanced Certificate

Major/Area Requirements	(18 credits)
INP 261 Introduction to Web Programming	3
INP 271 Client-Side Web Programming	3
INP 275 Web Database	3
INP 276 Rich Internet Application Programming	3
INP 281 Server-Side Web Programming	3
INP 291 Emerging Web Technologies	3
Minimum Credits Required for the Program:	18

Web Application Development (CVWBDDV)

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. Successful completion of the Web Technology Certificate is a prerequisite for enrolling in the Web Application Developer 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.

Web Graphic Design (CVWBGR)

Advanced Certificate

Major/Area Requirements	(10 credits)
GDT 139 Illustrator Graphics	4
INP 176 Web Animation I	3
INP 212 Web Graphics III	3
Minimum Credits Required for the Program:	10

Web Graphic Design (CVWBGR)

This program is designed for students interested in the creative aspects of Web development. Courses focus on the knowledge and skills necessary for employment as a Web graphic designer with a concentration in interactive media. Successful completion of the Web Technology Certificate is a prerequisite for enrolling the Web Graphic Design Advanced Certificate.

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 Web Technology Certificate or have significant industry experience prior to starting this certificate.

Web User Experience (CVWUE)

Advanced Certificate

Major/Area Requirements	(9 credits)
ENG 107 Technical Writing I	3
INP 233 Web Analytics and SEO	3
INP 253 Designing User Experience III	3
Minimum Credits Required for the Program:	9

Web User Experience (CVWUE)

This program is for students interested in Web user experience. Courses focus on the knowledge and skills necessary to design, evaluate and enhance the user experience for a wide variety of Web sites and Web applications.

Applying for Admission to the Program: Completion of the Web Technology certificate.

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 (CTPH01)

Certificate

Major/Area Requirements

PHO 110	Introduction to the Darkroom
PHO 111	Photography I
PHO 117	Introduction to the Studio
PHO 127	Digital Photo Imaging I
PHO 228	Digital Photo Imaging II
PHO 122 or	Darkroom Techniques
PHO 129	Black and White Digital Imaging

Minimum Credits Required for the Program:

(21 credits)

1	Photographic Imaging (CTPH01)
4	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.

21



Photographic Technology (APPHOT)

Associate in Applied Science Degree

General Education Requirements

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
Computer Lit.	Elective(s)	3

(21 credits)

Major/Area Requirements

PHO 103	History of Photography	3
PHO 110	Introduction to the Darkroom	1
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 PHO 129	Darkroom Techniques	4
PHO 129	Black and White Digital Imaging	4
PHO 211 or PHO 220	Large Format Photography	3
PHO 220	Advanced Studio Techniques	3
Elective	Complete an additional 9-12 credits of PHO electives (100 level and above)	9-12

(43 credits)

Minimum Credits Required for the Program:

64

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

Photographic Technology (APPHOT)

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 Photography, BA degree; 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>.





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 networking or programming in the growing field of applied information technology.

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.

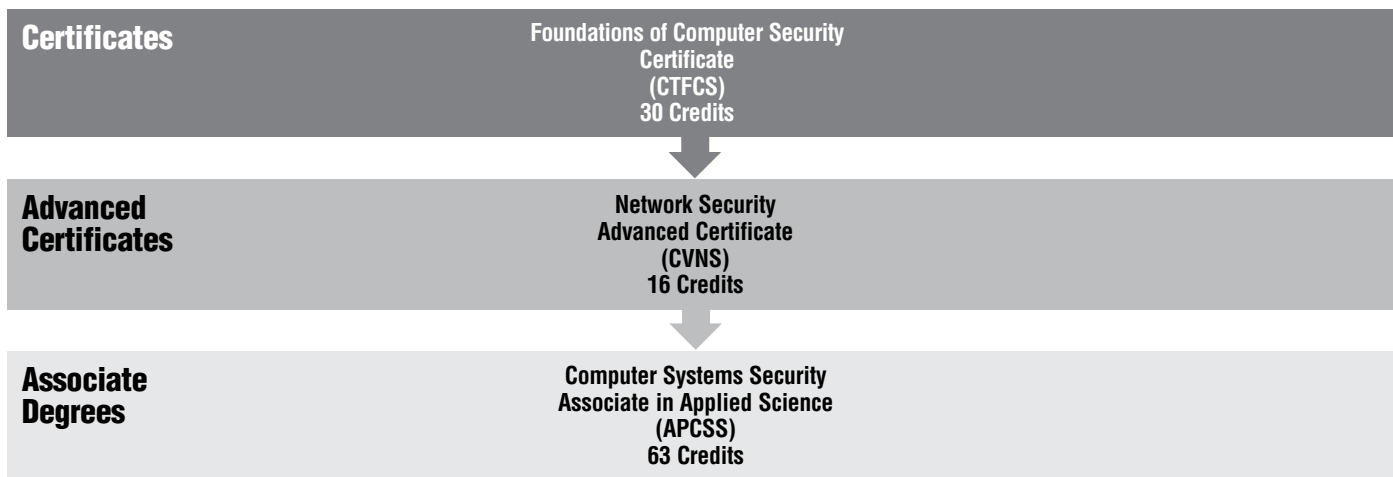
The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate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



COMPUTER SECURITY AND DATA ANALYSIS

Become part of the growing field of computer system security or data recovery and analysis.



Foundations of Computer Security (CTFCS)

Certificate

Major/Area Requirements

(30 credits)

CIS 121	Linux/UNIX I: Fundamentals	3
CNT 201	Administering Microsoft Windows XP Professional	3
CNT 206	Internetworking I - Fundamentals	4
CNT 211	Administering and Managing Microsoft Windows Server Active Directory	4
CNT 216	Internetworking II - Routers	4
CSS 180	Computer Security I	4
CSS 200	Computer Security II	4
CSS 205	Computer Security III	4

Minimum Credits Required for the Program:

30

Foundations of Computer Security (CTFCS)

In this introductory program, students will develop the basic knowledge and skills that will qualify them for admission into the Network Security Advanced Certificate program. Students will receive an introduction to the principles of information assurance and will acquire basic skills in network and system administration.

Applying for Admission to the Program: In order to meet the requirements of the market for jobs in network security, students should have significant professional or educational experience in network and system administration and advanced courses in network and system security

Program Admission Requirements:

- An Academic Math Level of 3
- Students must also be experienced at installing and configuring computers and be comfortable with working at the computer command line with DOS.

Continuing Eligibility Requirements: Students must maintain a grade of "C" or better in the program requirements.



Network Security (CVNS)

Advanced Certificate

Major/Area Requirements	(16 credits)
CNT 251 Designing Windows Server Security	4
CSS 210 Computer Security IV	4
CSS 212 Computer Security V	4
CSS 220 Computer Security VI	4
Minimum Credits Required for the Program:	16



Network Security (CVNS)

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 the Foundations of Computer Security Certificate 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 Foundations of Computer Security Certificate program or have equivalent knowledge before enrolling in this program.

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: In order to meet the requirements of the current job market, students of this program must have significant prior professional experience as Network and/or System Administrators or must demonstrate successful completion of certificate or degree programs in Network and System Administration.

Program Admission Requirements:

- An Academic Math Level of 3
- Substantial experience at installing and configuring computers and skill at working with the command line interface.
- Successful completion of the Foundations of Computer Security Certificate-Network Security Option

Computer Systems Security (APCSS)

Associate in Applied Science Degree

General Education Requirements

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
Computer Lit.	Elective(s)	3

Major/Area Requirements

CIS 121	Linux/UNIX I: Fundamentals	3
CNT 201	Administering Microsoft Windows XP Professional	3
CNT 206	Internetworking I - Fundamentals	4
CNT 211	Administering and Managing Microsoft Windows Server Active Directory	4
CNT 216	Internetworking II - Routers	4
CSS 180	Computer Security I	4
CSS 200	Computer Security II	4
CSS 205	Computer Security III	4
CSS 210	Computer Security IV	4
CSS 212	Computer Security V	4
CSS 220	Computer Security VI	4

Minimum Credits Required for the Program: 63

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.

I	II	III	IV
CIS 121	CNT 201	CSS 200	CSS 210
CSS 220	CSS 180	CNT 206	CSS 205
CSS 212	CNT 216	CNT 211	

Computer Systems Security (APCSS)

In this program, students will learn about 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. Important Note: This program is intended for individuals that will also be completing certificate or degree programs in network administration or that have significant prior professional and/or educational experience in network and/or system administration.

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>.

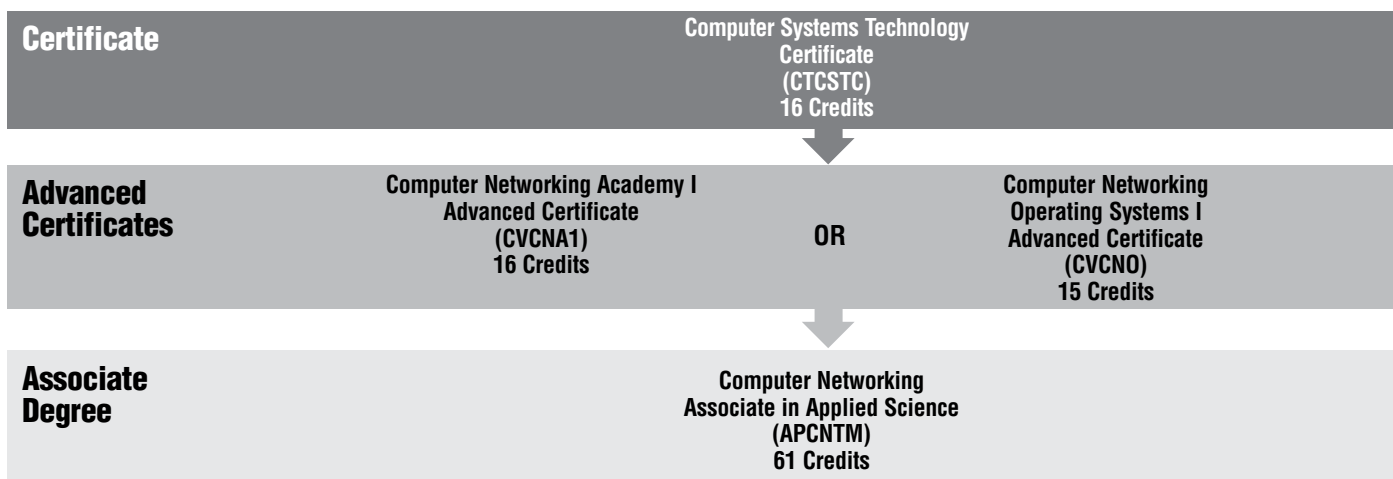
Applying for Admission to the Program: In order to meet the requirements of the current jobs market, students of this program must have significant prior professional experience as Network and/or System Administrators or must also complete certificate or degree programs in Network and/or System Administration.

Program Admission Requirements: An Academic Math Level of 3 is required to enroll in MTH 169. An Academic Math Level of 4 is required to enroll in MTH 176, MTH 178 and MTH 181. Students must also be experienced at installing and configuring computers and be skilled at working with the command line interface.

Continuing Eligibility Requirements: Students must maintain a grade of "C" or better in the program requirements.

NETWORKING

Develop and manage computer networks as a network administrator/engineer.



Computer Systems Technology (CTCSTC)

Certificate

Major/Area Requirements		(16 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
CSS 270 or	Computer Security VII	
ELE 174 or	ELE Co-op Education I	
ELE 299	Customer Relations	1-3
Minimum Credits Required for the Program:		16

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.

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>.

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	(15 credits)
CNT 201 Administering Microsoft Windows XP Professional	3
CNT 211 Administering and Managing Microsoft Windows Server Active Directory	4
CNT 223 Windows Server Networking Infrastructure Configuration	4
CNT 224 Microsoft Server Administrator	4
Minimum Credits Required for the Program:	15

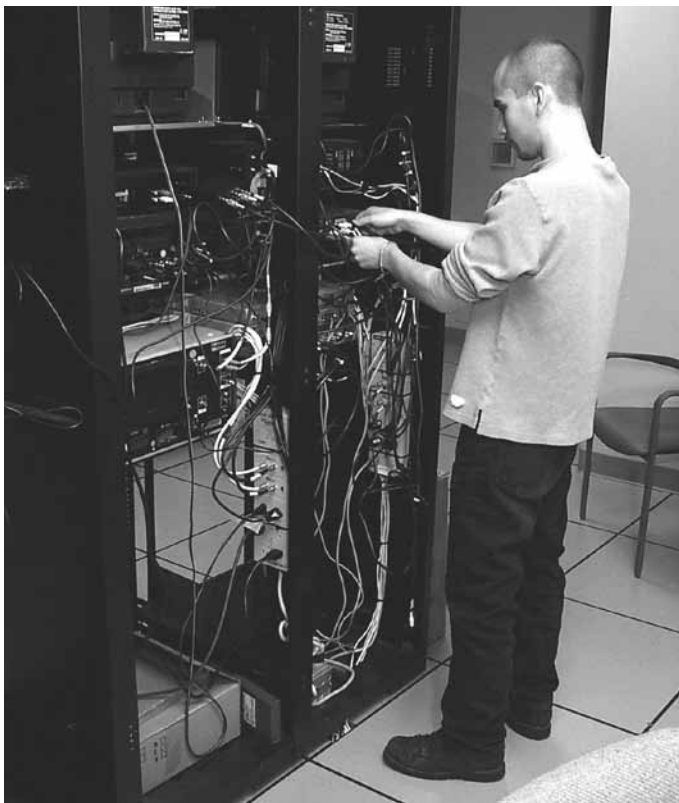
Computer Networking Operating Systems I (CVCNO)

This program lays a foundation in preparation for a profession as a Microsoft Certified IT Professional. Students will install, configure, and troubleshoot Microsoft Client Server Networks. The program is designed to deploy and manage both Windows Server 2003 and Server 2008 with Client Workstations in simulated real-life situations. Administering, managing, monitoring, and troubleshooting of Server 2008 Active Directory, Network Services, and other Server functions are all emphasized. All Server configured activities are tested out using Client Workstations to ensure they work, just as in a real business environment. The program is structured for both those who are working towards Microsoft Server 2003 MCSA/MCSE certifications, and/or Server 2008 MCTS/MCITP certifications. Also those already having certification who want to enhance their knowledge with the newer operating systems, as well as those who may just want to learn how to effectively implement these technologies are 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.

Notes:

This program is designed to be completed in a two semester time frame.



Computer Networking (APCNTM)

Associate in Applied Science Degree

General Education Requirements (21 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
Computer Lit.	Elective(s)	3

Major/Area Requirements (41 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	1-3
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 (15 credits). CNT 201, CNT 211, CNT 223 and CNT 224	15-16
CIS 121	Linux/UNIX I: Fundamentals	3
CPS 120	Introduction to Computer Science	3
Elective	Complete an additional 3 credits to reach a minimum of 60 credit hours.	3

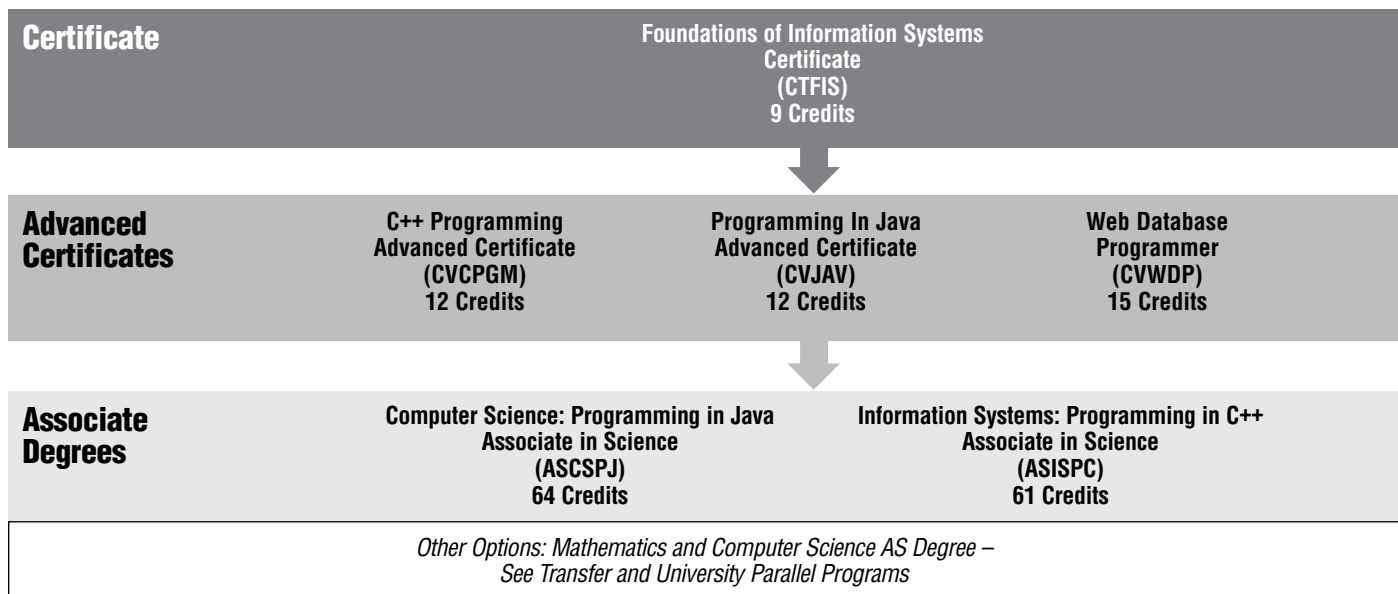
Minimum Credits Required for the Program: 61

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>.

Learn the foundation of computer programming or specialize in a programming language through these programs.



Foundations of Information Systems (CTFIS)

Certificate

Major/Area Requirements		(9 credits)
CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX I: Fundamentals	3
CPS 120	Introduction to Computer Science	3
Minimum Credits Required for the Program:		9

Foundations of Information Systems (CTFIS)

The Foundations of Information Systems certificate provides a conceptual framework for those students wishing to become a professional in computer information systems or computer programming. 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 or analysts.

Continuing Eligibility Requirements: Students must maintain a minimum GPA of 2.0 or better.



C++ Programming (CVCPGM)

Advanced Certificate

Major/Area Requirements		(12 credits)
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
Minimum Credits Required for the Program:		12

C++ Programming (CVCPGM)

This program prepares students for jobs as a computer programmer where they will write C++ 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 Information Systems certificate or equivalent.

Programming in Java (CVJAV)

Advanced Certificate

Major/Area Requirements		(12 credits)
CPS 161	An Introduction to Programming with Java*	4
CPS 261	Advanced Java Concepts*	4
CPS 251 or	Android Programming Using Java	
CPS 278	Java Server Programming	4
Minimum Credits Required for the Program:		12

Programming in Java (CVJAV)

This program is intended for students who need to acquire skills in the Java programming language. The program also gives students skills that can be applied to the related jobs of programmer/analyst.

Program Admission Requirements: Completion of the Foundations of Information Systems certificate or equivalent.

Notes:

*See the Eastern Michigan University Web site for transfer equivalency: <http://it.emich.edu/service/online/tranequiv/>.

Web Database Programmer (CVWDP)

Advanced Certificate

Major/Area Requirements		(15 credits)
CPS 276 or	Web Programming Using Apache, MySQL, and PHP	
CPS 278	Java Server Programming	4
CPS 280	Advanced Web/Database Programming	4
	Select two of the following courses not already selected above: CIS 282, CPS 276, CPS 278, CPS 251, CPS 293	7-8
Minimum Credits Required for the Program:		15

Web Database Programmer (CVWDP)

This program focuses on the development of Web databases and e-commerce applications. It is intended for students with a strong programming background. The coursework emphasizes server-side programming. CSS and professional HTML are given minimal coverage (students interested in these topics should consider the Web Technology certificate).

Program Admission Requirements: Completion of CPS 161 or CPS 171 with a minimum grade of "B-" or instructor consent.



Computer Science: Programming in Java (ASCSPJ)

Associate in Science Degree

General Education Requirements		(36 credits)
ENG 111 and	Composition I	4
ENG 226	Composition II	3
COM 225	Intercultural Communication*	3
MTH 176	College Algebra**	4
CEM 111 or	General Chemistry I	
GLG 114 or	Physical Geology	
PHY 211	Analytical Physics I	4-5
Soc. Sci.	Elective(s)***	9
Arts/Human.	Elective(s)****	6
CIS 100	Introduction to Computers and Software Applications	3
Major/Area Requirements		(11 credits)
CPS 161	An Introduction to Programming with Java	4
CPS 261	Programming Data Structures in Java	4
Elective	Complete one course from: CIS 121, CIS 221, CIS 282, CPS 120, CPS 171, CPS 251, CPS 271, CPS 278 CPS 293, or INP 150.	3-4
Required Support Courses		(5 credits)
MTH 191	Calculus I	5
Required Courses		(12 credits)
Elective	Students must complete 100-level or above transferrable courses. *****	12-15
Minimum Credits Required for the Program:		64

Notes

*Satisfies EMU's Diverse World Requirement.

**MTH 176 should be completed at WCC to satisfy EMU's Quantitative Reasoning Requirement. If completed at EMU, MATH 110 will be required unless waived by ACT/SAT or math placement score.

***Choose three courses from at least two disciplines.

****Students transferring to a four-year institution should choose a lab-based, MACRAO-approved science course.

*****Students intending to transfer to EMU to complete the Comprehensive Computer Science Degree must take the following courses: MTH 192, MTH 197 and a second course in a sequence: CEM 122, GLG 125 or PHY 222.

Computer Science: Programming in Java (ASCSPJ)

This program prepares students to transfer to Eastern Michigan University to complete a bachelor's degree in Computer Science or Applied Computer Science and to pursue careers in computer science fields such as computer systems programming and analysis, software development and maintenance, and applications programming.

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 need an Academic Math Level of 4 or higher to enroll in MTH 176.

Information Systems: Programming in C++ (ASISPC)

Associate in Science Degree

General Education Requirements		(36 credits)
ENG 111 and	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)*	3
MTH 181	Mathematical Analysis I**	4
Nat. Sci.	Elective(s)***	4
ECO 211 and	Principles of Economics I	3
ECO 222	Principles of Economics II	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)****	6
CIS 110	Introduction to Computer Information Systems	3
Major/Area Requirements		(19 credits)
CIS 121	Linux/UNIX I: Fundamentals	3
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
CPS 276	Web Programming Using Apache, MySQL, and PHP	4
Required Support Courses		(6 credits)
BMG 140	Introduction to Business	3
BMG 200	Human Relations in Business	3
Minimum Credits Required for the Program:		61

Information Systems: Programming in C++ (ASISPC)

This program prepares students to transfer to complete a bachelor's degree in Business Administration with a major in Computer Information Systems. Undergraduates and graduates of CIS programs are prepared to create and maintain information systems for organizations, manage information systems projects, and develop strategies for effective use of enterprise information resources.

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 need an Academic Math Level of 4 to enroll in MTH 181.

Notes:

*See the EMU Diverse World Requirement list.

**MTH 181 should be completed at WCC to satisfy EMU's Quantitative Reasoning Requirement. If completed at EMU, MATH 110 will be required unless waived by ACT/SAT or math placement score.

***Students transferring to a four-year institution: choose a lab-based, MACRAO-approved natural science course; choose a social science elective in a discipline other than ECO. See the MACRAO list in the WCC Bulletin for a list of choices.

****PHL 205 or PHL 250 is strongly recommended.

Students intending to transfer into the EMU College of Business may want to take BMG 111 in addition to the courses required in this program. BMG 111 will transfer to the EMU College of Business as LAW 293.

Develop and manage computer systems using universal operating systems.

Certificate

Linux/Unix Systems I
Certificate
(CTLUX1)
12 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.





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.

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

Certificates

Music Production/Engineering
Certificate
(CTMPRO)
20 Credits

Other Options: Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies



MUSIC AND PERFORMING ARTS

Develop the skills for a career in music performance, engineering or production through these certificate programs.

Music Production/Engineering (CTMPRO)

Certificate

Major/Area Requirements

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

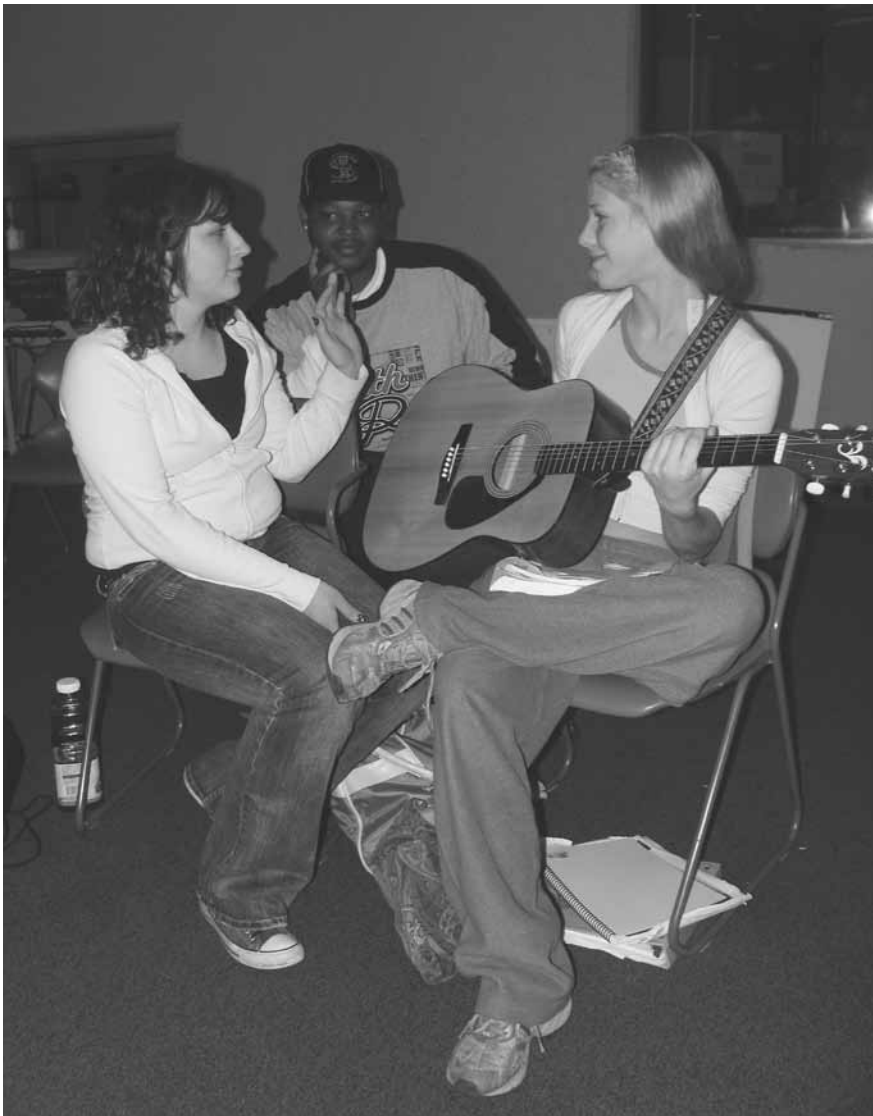
Minimum Credits Required for the Program:

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.

SCHOOL OF MUSIC AND PERFORMING ARTS





Find your place in the growing field of health care. 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, physical therapist assistant, radiography, nursing assistant or professional nursing. The health care foundations certificate provides a starting point for prospective nursing and health science students or provides the general education courses to move from completion of a certificate program into an associate degree program.

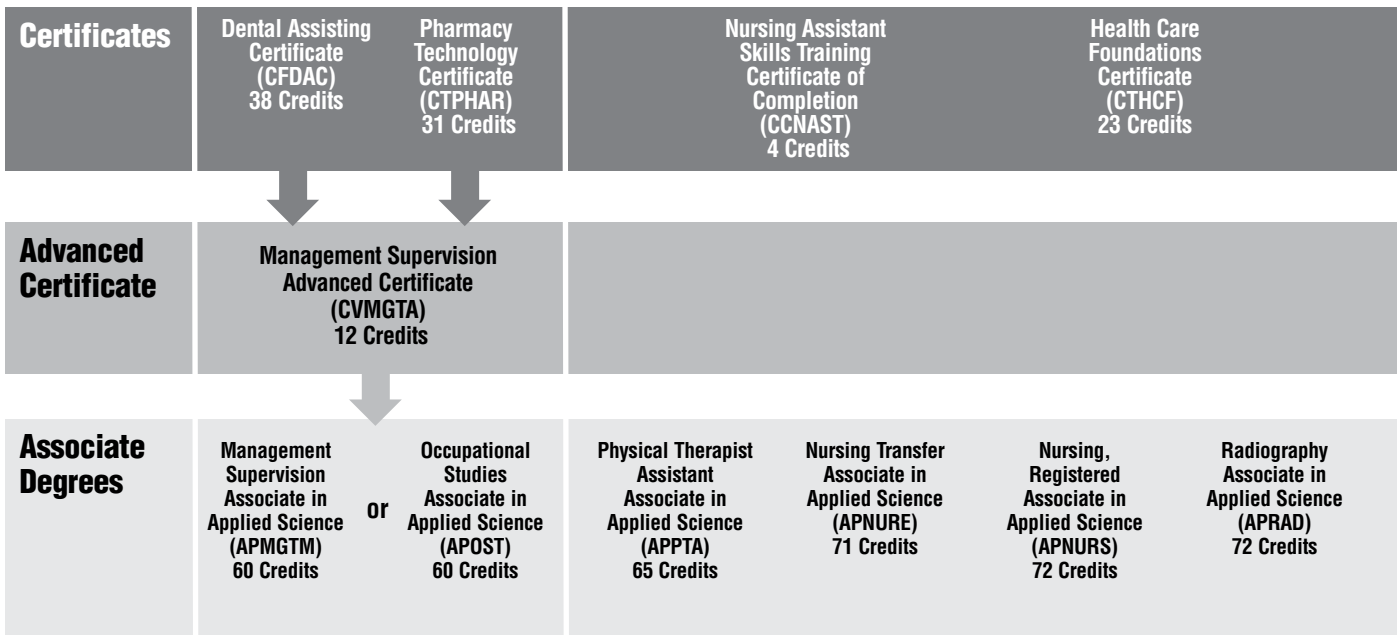
Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level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



*Other Options: Management Supervision Advanced Certificate, Management Supervision AAS Degree – See School of Business and Entrepreneurial Studies
Occupational Studies AAS Degree – See School of Apprenticeship and Occupational Studies*

DENTAL ASSISTING

Prepare for a career as a certified dental assistant through the completion of this program.

Dental Assisting (CFDAC)

Certificate

Minimum Option Credits Required for the Program: (38 credits)

Dental Assisting Options

Pathway I - Option A (38 credits)

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	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

Pathway I - Option B (38 credits)

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

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 downloaded from the WCC Web site.

- http://www4.wccnet.edu/departments/health/pdfs/pathway1a_application_packet.pdf
- http://www4.wccnet.edu/departments/health/pdfs/pathway1b_application_packet.pdf
- http://www4.wccnet.edu/departments/health/pdfs/pathway2_application_packet.pdf

Completed and signed applications must be delivered to the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building. 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.

Continued on next page

Dental Assisting (CFDAC)

Certificate

Continued from previous page

Third Semester		(6 credits)
DEN 212	Dental Practice Management	3
BMG 207 or	Business Communication	
ENG 111	Composition I*	3-4
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	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)

DANB Exam		(22 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.

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- Applicants must undergo a criminal background check.
- Applications will be accepted prior to high school graduation or GED completion.
- 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 jneuman@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.

This certificate program can provide the essential basic skills to prepare for a specialized health care program.

Health Care Foundations (CTHCF)

Certificate

Major/Area Requirements (9 credits)

ENG 111	Composition I	4
HSC 101	Healthcare Terminology	1
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
PHL 244	Ethical and Legal Issues in Health Care	3

Select one of the Health Care foundations concentrations to complete.

Minimum Concentration Credits Required for the Program: 14

Nursing Intent (18 credits)

BIO 111	Anatomy and Physiology - Normal Structure and Function	5
COM 101	Fundamentals of Speaking	3
HSC 100	Basic Nursing Assistant Skills	4
MTH 167	Math Applications for Health Science	3
PSY 100	Introduction to Psychology	3

Physical Therapist Assistant Intent (16 credits)

BIO 111	Anatomy and Physiology - Normal Structure and Function	5
COM 102	Interpersonal Communication	3
HSC 102	Introduction to Physical Therapy	1
MTH 160	Basic Statistics	4
PSY 100	Introduction to Psychology	3

Radiography Intent (16 credits)

BIO 109 or	Essentials of Human Anatomy and Physiology	
BIO 111	Anatomy and Physiology - Normal Structure and Function	4-5
COM 101	Fundamentals of Speaking	3
MTH 169	Intermediate Algebra	4
RAD 100	Introduction to Diagnostic Imaging	2
SOC 100	Principles of Sociology	3

No Specialty (14 credits)

BIO 101 or	Concepts of Biology	
BIO 102 or	Human Biology	
BIO 109 or	Essentials of Human Anatomy and Physiology	
BIO 111	Anatomy and Physiology - Normal Structure and Function	4-5
COM 101 or	Fundamentals of Speaking	
COM 102	Interpersonal Communication	3
HSC 100 or	Basic Nursing Assistant Skills	
HSC 102 or	Introduction to Physical Therapy	
PHT 106 or	Introduction to Pharmacy Technology	
RAD 100	Introduction to Diagnostic Imaging	1-4
MTH 160 or	Basic Statistics	
MTH 167 or	Math Applications for Health Science	
MTH 169	Intermediate Algebra	3-4
PSY 100 or	Introduction to Psychology	
SOC 100	Principles of Sociology	3

Minimum Credits Required for the Program: 23

Notes:

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 Nursing, Physical Therapist Assistant, Radiography and general education requirements for an Associate in Applied Science degree. It provides students applying for a "high demand" health care associate's degree program with a certificate for the completion of most general education and/or pre-admission course requirements of the intended program. Students who plan to enter health care programs are encouraged to contact a counselor.

NURSING

Prepare for a career in a variety of health care settings through these certificate and associate in applied science degree 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, Registered (APNURS)

Associate in Applied Science Degree

First Semester (15 credits)

ENG 111 Composition I* 4

COM 101 or Fundamentals of Speaking* 4

COM 102 or Interpersonal Communication* 4

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 (12 credits)

HSC 147 Growth and Development* 3

NUR 102 Fundamentals of Nursing 2

NUR 106 Fundamentals of Nursing - Lab and Clinical Practice 4

NUR 115 Pharmacology 3

Third Semester (12 credits)

HSC 138 General and Therapeutic Nutrition* 2

NUR 123 Medical-Surgical Nursing I 3

NUR 124 Medical-Surgical Nursing I - Clinical Practice 2

NUR 131 Nursing of the Childbearing Family 3

NUR 132 Nursing of the Childbearing Family - Clinical Practice 2

Nursing, Registered (APNURS)

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: Eastern Michigan University, BSN degree; University of Michigan - Flint, BSN 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. Application packets may be downloaded from the WCC Web site. Download the Registered Nursing program application packet: http://www4.wccnet.edu/departments/health/pdfs/nursing_application_packet.pdf Completed and signed applications must be delivered to the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building. Students will be given information about how to prepare and complete the pre-admission test, Test of Essential Academic Skills, or TEAS, at this time. An application to the Nursing program will not be accepted until all admission requirements are met.

Requirements for application are:

- Academic Math Level of 3
- HSC 101 with a minimum grade of “B-” (2.7 on a 4.0 scale)

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Nursing, Registered (APNURS)

Associate in Applied Science Degree

Fourth Semester (13 credits)

NUR 223	Medical-Surgical Nursing II	3
NUR 224	Medical Surgical Nursing II - Clinical Practice	2
NUR 255	Mental Health Nursing	3
NUR 256	Mental Health Nursing - Clinical Practice	2
PSY 100	Introduction to Psychology*	3

Fifth Semester (14 credits)

NUR 231	Nursing of Children	3
NUR 232	Nursing of Children - Clinical Practice	2
NUR 283	Medical-Surgical Nursing III	3
NUR 284	Medical-Surgical Nursing III - Clinical Practice	3
PHL 244	Ethical and Legal Issues in Health Care*	3

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.

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.

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- 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 2.7. 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, is the responsibility of the student.

- Demonstrate proficiency in the English language
- Declaration of residency status (note that Washtenaw County residents are given priority in program initiation).
- Pass the Test of Essential Academic Skills (TEAS) within three (3) attempts by achieving the following minimum scores based on the current TEAS version.

For Version 5.0:

- Math proficiency - 60 percent or higher
- Reading proficiency - 70 percent or higher
- English proficiency - 60 percent or higher
- Science proficiency - 45 percent or higher
- Overall TEAS score - 60 percent or higher

*If you take the TEAS at an institution outside of WCC, you must request to have an official ATI transcript sent to the Health Admissions Office.

**Minimum scores are subject to change based on new versions released by ATI.

Program Admission Requirements: 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.

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.

Nursing Transfer (EMU School of Nursing) (APNURE)

Associate in Applied Science Degree

First Winter Semester (16 credits)

BIO 111	Anatomy and Physiology - Normal Structure and Function	5
CEM 105	Fundamentals of Chemistry	4
ENG 111	Composition I	4
HSC 147	Growth and Development	3

First Spring/Summer Semester (9 credits)

CIS 100 or	Introduction to Computers and Software Applications	
CIS 110	Introduction to Computer Information Systems	3
ENG 226	Composition II	3
PSY 100	Introduction to Psychology	3

(Need CNA certification before taking NUR 102/NUR 106)

First Fall Semester (14 credits)

BIO 237	Microbiology	4
NUR 102	Fundamentals of Nursing	2
NUR 106	Fundamentals of Nursing - Lab and Clinical Practice	4
NUR 122	Nursing as a Societal and Interpersonal Profession	4

Second Winter Semester (15 credits)

BIO 212	Pathophysiology: Alterations in Structure and Function	4
Elective	Take a course from the COM discipline.	3
MTH 160	Basic Statistics	4
NUR 122	Nursing as a Societal and Interpersonal Profession	4

Second Spring/Summer Semester (3 credits)

PHL 244	Ethical and Legal Issues in Health Care	3
Elective	ANT 201*	0-3
Elective	Select one of the following Humanities courses: ART 143, ART 150, COM 225, DAN 180, ENG 181, ENG 213, ENG 214, ENG 224, HUM 150, HUM 170, HUM 175*	0-3

Second Fall Semester (14 credits)

CEM 140	Organic Biochemistry	4
NUR 115	Pharmacology	3
NUR 130	Health Promotion and Risk Reduction	4
Elective	Take a course from the PSY discipline	3

Minimum Credits Required for the Program: 71

Notes:
 *Optional for receiving the MACRAO stamp prior to transfer
 See WCC-EMU articulation agreement for a description of the additional credit hours that can be taken at WCC.

Nursing Transfer (APNURE)

This WCC honors program prepares students for a smooth transition into the third and fourth years of Eastern Michigan University's School of Nursing (EMU-SoN) BSN 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 EMU-SoN program. WCC students will graduate with an Associate in Applied Science Degree.

Articulation: Eastern Michigan University, BSN degree. Copies of articulation agreements 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: An application and acceptance to the program is required. The application deadline is July preceding each winter 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 and complete the Mandatory Meeting form with the appropriate signatures.

(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).

Sixteen (16) students are admitted each winter semester to the Nursing Transfer Program.

Students must complete a second application for the Nursing Transfer (EMU School of Nursing) program after being admitted to Washtenaw Community College. Further, the student must meet all admission requirements of both WCC and Eastern Michigan University.

Applicants must meet the following minimum admission requirements to be considered for admission to the WCC/EMU-SoN program:

1. Minimum cumulative GPA of 3.4 for high school
- OR**
- Minimum cumulative college GPA of 3.0 (calculated on minimum of 12 credits)
2. Minimum SAT score of 1001 or minimum ACT composite score of 22
- OR**
- 12 college credits with a minimum cumulative GPA of 3.0
3. Minimum grade of "B" in all required science courses
4. Completion of the following required high school coursework or equivalent college level course
 - a. Four (4) units of high school English
- OR**
- minimum three (3) college credits of Composition I (ENG 111 at WCC)

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Nursing Transfer (EMU School of Nursing) (APNURE)

Associate in Applied Science Degree

Continued from previous page

b. Three (3) units of high school math (Algebra I and II, Geometry)

OR

WCC's Academic Math Level 3

c. One (1) unit of high school chemistry

OR

minimum four (4) credits of college chemistry including lab (CEM 090 at WCC)

d. One (1) unit of high school biology

OR

minimum four (4) credits of college biology including lab (BIO 101 at WCC)

e. Four (4) units of high school foreign language and/or social science and/or laboratory science

OR

minimum three (3) college credits in a foreign language, social science or laboratory science course. The laboratory science course must be in addition to the course(s) required above.

f. Four (4) units of other high school academic courses

OR

minimum three (3) college credits in any academic subject (WCC course numbered 100 and above)

5. Students who have a GED certificate are considered to have completed all items above except the chemistry and biology requirements. GED recipients must also submit a copy of their high school transcript. GED recipients must document completion of their biology and chemistry via their high school transcript and/or completion of an appropriate college class.

6. Minimum score of 80% on a pre-admission math test

7. Criminal background check clearance (refer to Information Release Authorization form in the admission packet)

8. Signed Abilities Statement on file

9. TOEFL Scores

Internet-based version = 89 or higher

Reading = 22 or higher

Spelling = 24 or higher

Listening = 23 or higher

Writing = 20 or higher

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 prior to the NUR 102/106 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. Students are expected to maintain math competency in drug dosage calculations throughout the program. MTH 167 is an optional preparatory math course to assist students to achieve this competency.

6. Students must apply for graduation from WCC.

7. To be admitted to EMU-SoN, the student must have:

- A minimum of 2.0 in all nursing courses (i.e. NUR 102, NUR 103, NUR 115, NUR 122, NUR 130, NUR 222)

- A minimum of 3.0 in these science courses (i.e. BIO 111, BIO 237, and CEM 140). Note: All science courses must be completed within ten (10) years of beginning the program at EMU.

- A minimum of 2.0 in SOC 100, PSY 100, ENG 111, MTH 160, COM elective, HSC 147, BIO 212

- A cumulative GPA of 3.0 in CEM 140, ENG 111, PSY 100, BIO 111, HSC 147, (ANT 201 or ANTH 135), whether completed at WCC or EMU.

- An overall cumulative GPA of 3.0 at WCC

8. Students are only allowed to repeat a maximum of two (2) nursing courses, which includes BIO 212 Pathophysiology. Further, a student may only repeat a failed nursing course one (1) time. Any failures in nursing courses taken prior to admission to EMU-SoN (i.e. NUR courses and BIO 212 taken at WCC) are counted toward dismissal and permanent dismissal decisions.

9. Students must take ATI exams for Fundamentals of Pharmacology.

10. Students must complete all other health requirements and criminal background checks per EMU-SoN policy.

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 before June 30, 2011. Students can take the test two times. If a passing score is not attained, an approved Computer and Information Literacy course 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:

- CIS 100 Introduction to Computers and Software Applications;
- 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 specialty 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 downloaded from the WCC Web site. Download the Pharmacy Technology program application packet: http://www4.wccnet.edu/departments/health/pdfs/pharmacy_technology_application_packet.pdf Completed and signed applications must be delivered to the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building. 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. 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.

Pharmacy Technology (CTPHAR)

Certificate



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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 THERAPIST ASSISTANT

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

First Semester (15 credits)

COM 101 or	Fundamentals of Speaking*	
COM 102	Interpersonal Communication*	3
HSC 147	Growth and Development*	3
PTA 100	Fundamentals of Physical Therapy	2
PTA 150	Therapeutic Procedures I	3
PTA 180	Clinical Kinesiology	4

Second Semester (16 credits)

PSY 100	Introduction to Psychology*	3
PTA 160	Therapeutic Procedures II	2
PTA 195	Introduction to Disease	2
PTA 200	Therapeutic Modalities	4
PTA 220	Therapeutic Exercise I	4
PTA 230	Clinical Education I	1

Third Semester (14 credits)

Elective	Computer Lit.	3
PHL 244	Ethical and Legal Issues in Health Care*	3
PTA 198	Soft Tissue Management	2
PTA 225	Therapeutic Exercise II	4
PTA 240	Clinical Education II	2

Fourth Semester (6 credits)

PTA 250	Clinical Education III	5
PTA 280	Clinical Concepts	1

Major/Area Requirements (14 credits)

BIO 111	Anatomy and Physiology - Normal Structure and Function	5
ENG 111	Composition I	4
HSC 101	Healthcare Terminology	1
MTH 160	Basic Statistics*	4

Minimum Credits Required for the Program: 65

Notes:

*These courses may be taken before admission to the Physical Therapist Assistant program. (It is strongly recommended that students complete the general education courses before entering the Physical Therapist Assistant program.)

Students may transfer or substitute equivalent general education courses or a healthcare terminology course required for the Physical Therapist Assistant program.

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.

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 formal application to the program is required. Application packets may be downloaded from the WCC Web site. Download the Physical Therapist Assistant program application packet: http://www4.wccnet.edu/departments/health/pdfs/physical_therapist_assistant_application_packet.pdf Completed and signed applications must be delivered to the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building.

Requirements for application are:

- Completion and submission of an application for admission to the Physical Therapist Assistant program.
- Academic Math Level of 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.
- Applicants will undergo a criminal background check.

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 medical imaging equipment.

Radiography (APRAD)

First Semester		(8 credits)
MTH 169	Intermediate Algebra	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
PSY 100 or	Introduction to Psychology*	
SOC 100	Principles of Sociology*	3
Fourth Semester		(6 credits)
RAD 150	Clinical Education	3
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
Major/Area Requirements		(6 credits)
BIO 109	Essentials of Human Anatomy and Physiology**	4
RAD 100	Introduction to Diagnostic Imaging*	2
Minimum Credits Required for the Program:		72

Continued on next page at A

Associate in Applied Science Degree

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: A limited number of students are admitted to the Radiography Program each year. A formal application to the program is required. Application packets may be downloaded from the WCC Web site. Download the Radiography program application packet: http://www4.wccnet.edu/departments/health/pdfs/radiography_application_packet.pdf

Completed and signed applications must be delivered to the Health Admissions Technician at the Student Connection, located on the second floor of the Student Center Building. 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

Continued on next page at B

Radiography (APRAD)

Associate in Applied Science Degree

Continued from previous page A

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 health-care terminology course required for the Radiography program. Contact the program advisor for approval.

**This course or a higher-level college anatomy and physiology course must be taken before being admitted to the program.



Continued from previous page B

- Academic Math Level of 3
- Completion of BIO 109 or an equivalent college-level anatomy and physiology course with a minimum of C+
- Completion of RAD 100, Introduction to Diagnostic Imaging with a minimum of C+
- Applicants must have a minimum cumulative 2.3 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. 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 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.

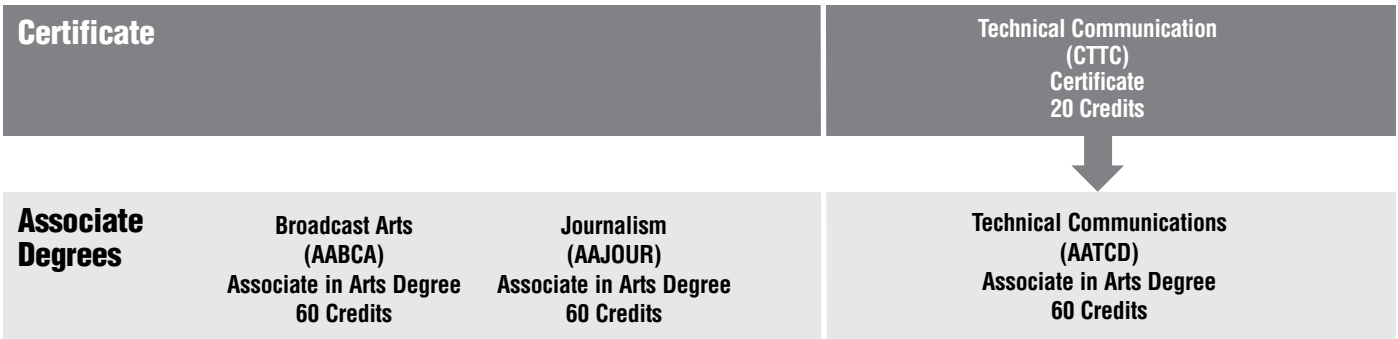
Continuing Eligibility Requirements:

- 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.





We live in an age of communication. The School of Professional Communication is here to serve those who want to develop skills in radio broadcasting, technical communication, or in print and online journalism. Select one of our programs and prepare yourself for an entry-level job or for transfer to a four-year institution.



COMMUNICATION

Whether your goal is broadcasting, journalism or technical communication, these programs provide a foundation for entry-level jobs or to undertake advanced studies at a four-year institution.

Technical Communication (CTTC)

Certificate

Major/Area Requirements		(20 credits)
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
Elective	Select one GDT course from the following: GDT 105, GDT 130, GDT 139, GDT 140	3-4
Elective	Select one INP course from the following: INP 140, INP 150, INP 152**, INP 153	3

Minimum Credits Required for the Program: 20

Notes:

*Students with equivalent coursework/experience are encouraged to contact the program advisor for appropriate course placement. **INP 152 requires student to complete GDT 140 as a prerequisite.

Technical Communication (CTTC)

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. Using the Adobe Technical Communication Suite, the student will develop skill in audience analysis; tutorial, procedure, and reference guide writing; project management; document design; and usability testing. Designed to provide the student with practical and theoretical principles of technical communication, the program prepares students for employment in a wide variety of opportunities in the field. To this end, students will also learn how to conduct a formal job search and create professional portfolios to better compete for jobs. Those without previous college experience can use this certificate to seek work as interns and in co-op positions in technical communication while pursuing the Associate in Arts Degree in Technical Communication..

Program Admission Requirements: Basic computer literacy, a general understanding of Windows OS and Office 2000 and experience using the Internet.

Broadcast Arts (AABCA)

General Education Requirements		(31 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
Computer Lit.	Elective(s)	3
Major/Area Requirements		(29 credits)
COM 150	Introduction to Radio Production	3
COM 155	Scriptwriting for Broadcast Arts	3
COM 160	Voice and Articulation	3
COM 170	Advanced Radio Production	3
COM 235	Broadcast Arts Practicum	3
COM 240	Broadcast Arts Internship	3
Elective	Complete any 100-level or above courses to reach a minimum of 60 credits.	11
Minimum Credits Required for the Program:		60

Associate in Arts Degree

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.
Articulation: Lawrence Technological 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>.

Journalism (AAJOUR)

General Education Requirements		(31 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
Computer Lit.	Elective(s)	3
Major/Area Requirements		(29 credits)
COM 130	Introduction to Mass Communication	3
JRN 111	Introduction to Journalism	3
JRN 216	News Writing and Reporting	3
JRN 217	Feature Writing	3
JRN 220	Journalism for the Web	3
Elective	Complete 6 additional credit hours from COM, GDT, INP, PHO, PLS or VID	6
Elective	Select electives to reach minimum of 60 credit hours.	8
Minimum Credits Required for the Program:		60

Associate in Arts Degree

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.

Notes:

*Transfer students should select a lab-based, MACRAO-approved science course.



Technical Communications (AATCD)

Associate in Arts Degree

General Education Requirements		(33 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
Computer Lit.	Elective(s)	3
Major/Area Requirements		(27 credits)
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
Elective	Select one GDT course from the following: GDT 105, GDT 130, GDT 139, GDT 140	3-4
Elective	Select one INP course from the following: INP 140, INP 150, INP 152**, INP 153	3
Elective	Students must meet with the Technical Communication program advisor to select additional elective courses.	7
Minimum Credits Required for the Program:		60

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 Communication program advisor to select appropriate general education courses.*

*** INP 152 requires student to complete GDT 140 as a prerequisite.*

Technical Writing (AATW)

In this program, students explore the technical communication process in detail and develop skills in audience analysis, project management, technical writing and editing, document design and usability testing. Using the Adobe Technical Communication Suite, students prepare documents for both online and print delivery, learn how to conduct a formal job search, and create professional portfolios to showcase their skills in technical communication.

The Technical Communication Associate in Arts degree is designed for students transferring to a four-year university and seeking a Bachelor of Arts degree. The General Education requirements fulfill both Washtenaw Community College's requirements and the MACRAO Transfer requirements.

Articulation: Madonna University, BA 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 demonstrate basic computer literacy or complete the WCC Computer Literacy Requirement prior to entering the program.

Students must have an Academic Math Level of 3 to enroll in MTH 160 or MTH 169. One year of high school algebra with a "C" or better is recommended.



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.

Business (AABAS)

Computer Science Programming in JAVA (ASCSCCT)

See School of Information Technology

Criminal Justice (AACJ)

Education, Early Childhood (AAECED)

Education, Elementary (AAELEM)

Education, Secondary (AASECO)

Environmental Science (ASENVS)

Exercise Science (ASESCI)

General Studies in Math and Natural Sciences (ASGSMS)

Human Services (AAHUST)

Information Systems: Programming C++ (ASIST)

See School of Information Technology

Internet Professional (AAINP)

Liberal Arts Transfer (AALAT)

Math and Science (ASMSAS)

1. Pre-Medicine Concentration (BMED) or (CMED)
2. Computer Science Concentration (COMS)
3. Mathematics Concentration (MATH)
4. Physics/Pre-Engineering Concentration (PHYS)

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 are also 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 78 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 TRANSFER

Designed for students who intent to transfer into a four-year school program in business.

Business (AABAS)

General Education Requirements		(33 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101	Fundamentals of Speaking	3
MTH 125 or	Everyday College Math	
MTH 160 or	Basic Statistics	
MTH 176 or	College Algebra	
MTH 181	Mathematical Analysis I	4
Nat. Sci.	Elective(s)*	4-5
Soc. Sci.	Elective(s)**	6
Arts/Human.	Elective(s)***	6
Computer Lit.	Elective(s)	3
Major/Area Requirements		(24 credits)
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
BMG 111	Business Law I	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
Required Support Courses		(3 credits)
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:

*Students transferring to a four-year institution should choose a lab-based, MACRAO-approved science course.

**See the MACRAO list to make course selections from any discipline except ECO.

***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.

Associate in Arts Degree

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; Walsh College, BA or 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 cob_undergraduate@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 of 2 to enroll in MTH 125
- Academic Math Level of 3 to enroll in MTH 160
- Academic Math Level of 4 to enroll in MTH 176 or MTH 181

COMPUTER SCIENCE AND INFORMATION SYSTEMS

Interested in a bachelor's degree in computer science or (business) information systems? This area provides the foundation you need to be successful.

Math and Science (ASMSAS)

Associate in Science Degree

General Education Requirements		(34 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	Introduction to Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6
Computer Lit.	Elective(s)	3
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
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
Minimum Credits Required for the Program:		68

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 an Academic Math Level of 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 computer science concentration requires one semester of high school physics or PHY 105 or PHY 111 with a "C" or better to enroll in PHY 211.

Considering a career in law enforcement, the courts or corrections? This program prepares you for further study in these specialized fields.

Criminal Justice (AACJ)

Associate in Arts Degree

General Education Requirements

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	Introduction to Psychology	3
Arts/Human.	Elective(s)*	6
Computer Lit.	Elective(s)	3

(33 credits)

Major/Area Requirements

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

(30 credits)

Minimum Credits Required for the Program:

63

Notes:

*See the MACRAO list to make course selections. Transfer students should select lab-based Natural Science course.

Criminal Justice (AACJ)

This program helps prepare students for jobs in the courts and in corrections (such as probation and parole) as well as state and federal law enforcement. Most, but not all, of these jobs require at least a bachelor's degree and students can complete their first 3 years at WCC before transferring to other four-year schools such as EMU for their final year.

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 an Academic Math Level of 3 to enroll in MTH 160. One year of HS algebra is recommended.



EDUCATION

These programs offer the first two years of instruction required to become a certified teacher in the state of Michigan.

Early Childhood Education (AAECED)

Associate in Arts Degree

First Semester (16 credits)

CCP 101	Child Development	3
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
GEO 101	World Regional Geography	3
PSY 100	Introduction to Psychology	3

Second Semester (16 credits)

CCP 220	Development and Care of Infants and Toddlers	3
CCP 251 or	Education of Exceptional Children	
PSY 251	Education of Exceptional Children	3
CIS 100	Introduction to Computers and Software Applications	3
ENG 226	Composition II	3
MTH 148	Functional Math for Elementary Teachers I	4

Third Semester (15 credits)

ENG 240	Children's Literature	3
HSC 131	CPR/AED for the Professional Rescuer and First Aid	1
HST 201	United States History to 1877	3
MTH 149	Functional Math for Elementary Teachers II	4
CEM 102 or	Chemistry for Elementary Teachers*	
GLG 202 or	Earth Science for Elementary Teachers*	
PHY 100	Physics for Elementary Teachers*	4

Fourth Semester (13 credits)

CCP 200	Working with Families in a Diverse Society	3
CCP 204	The Developing Professional in Early Childhood Education	2
CCP 205	Practicum for the Developing ECE Professional	1
PSY 220	Human Development and Learning	4
Arts/Human.	Elective(s)	3
Elective	Science for Elementary School Teachers (optional)*	0-4

Minimum Credits Required for the Program: 60

Notes:

*Students should complete two of the three science courses to meet requirements for MACRAO. All three could be taken at WCC to transfer to EMU: CEM 102, GLG 202 and PHY 100.

Early Childhood Education (AAECED)

The program prepares students to transfer into an early childhood education program at a four-year college or university. The first two years of instruction in a bachelor's degree program in an early childhood education major is covered. The program includes the general education courses that prepare students for the state-mandated basic skills tests for teachers in the State of Michigan. Requirements vary by college, so students should obtain the current curriculum for the college to which they are transferring.

Program Admission Requirements: Students must have an Academic Math Level of 3 to enroll in MTH 148.

Continuing Eligibility Requirements: GPA of 2.0 or higher



Elementary Education (AAELEM)

Associate in Arts Degree

First Semester

COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
GEO 101	World Regional Geography	3
PLS 112	Introduction to American Government	3
Elective	Complete an Arts/Human. elective*	3

(16 credits)

Second Semester

ENG 226	Composition II	3
GLG 202	Earth Science for Elementary Teachers	4
MTH 148	Functional Math for Elementary Teachers I	4
PSY 100	Introduction to Psychology	3
Elective	Complete one course from the following: ENG 181, ENG 214, or ENG 242	3

(17 credits)

Third Semester

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

(15 credits)

Fourth Semester

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

(15 credits)

Minimum Credits Required for the Program:

63

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.

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 an Academic Math Level of 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.

EDUCATION

This program prepares the student for further study in the area of exercise science.

Secondary Education (AASECO)

Associate in Arts Degree

First Semester (16 credits)

CIS 100 or	Introduction to Computers and Software Applications	
CIS 110	Introduction to Computer Information Systems	3
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

Second Semester (16 credits)

ENG 226	Composition II	3
PSY 100	Introduction to 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 125, MTH 160, MTH 169, MTH 176, 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

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.

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 an Academic Math Level of 2 to enroll in MTH 125.

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.

This program prepares the student for further study in the area of exercise science.

Exercise Science (ASESCI)

Associate in Science Degree

General Education Requirements

(33 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
Computer Lit.	Elective(s)	3

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	Introduction to Psychology	3

Minimum Credits Required for the Program:

71

Notes:

*Transfer students should select two MACRAO-approved Social Science courses.

**Students must have an Academic Math Level of 4 to enroll in MTH 178.

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.

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>.



INTERNET PROFESSIONAL

Join the Web development industry through the completion of these certificates and degree.

Internet Professional (AAINP)

General Education Requirements		(35 credits)
ENG 111 and	Composition I	4
ENG 226	Composition II	3
Speech	Elective(s)*	3
Math	Elective(s)*	4
Nat. Sci.	Elective(s)*	4
Soc. Sci.	Elective(s)*	8
Arts/Human.	Elective(s)*	6
Computer Lit.	Elective(s)	3
Major/Area Requirements		(26 credits)
GDT 140	Photoshop Graphics	4
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	May take a minimum of 4 credits from the following: any 200-level INP classes, ANI 145, ANI 150, ANI 155, BMG 155, CIS 121, CPS 120, CPS 185, CPS 293, GDT 100, GDT 101, GDT 112, GDT 130, GDT 239, GDT 259, PHO 111, PHO 127, PHO 228, VID 101, VID 102, VID 110 or VID 112	4
Minimum Credits Required for the Program:		61

Notes:

*See the MACRAO list to make course selections. Transfer students should select a lab-based Natural Science course.

Associate in Arts Degree

Internet Professional (AAINP)

This program is for students interested in both pursuing a career in the Web development industry and transferring to a four-year school for a bachelor's 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>.

Continuing Eligibility Requirements: For successful continuation in the program, a minimum grade of "C" is required for all INP courses.

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

(32 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
Computer Lit.	Elective(s)	3

Major/Area Requirements

(28 credits)

Elective	Complete 15 credits from the following disciplines: ANT, ARB, ART, COM, DAN, DRA, ECO, ENG, FRN, GEO, GRM, HST, HUM, JRN, MUS, PHL, PLS, PSY, SOC, SPN and YOG.	15
Elective	Complete a minimum of 13 credits to bring the total credits to 60.	13

Minimum Credits Required for the Program:

60

Notes:

*Transfer students should select a lab-based, MACRAO-approved science course.

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 and 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>.



MATH AND SCIENCE

Learn more about math or science through this associate degree program.

Environmental Science (ASENVS)

Associate in Science Degree

General Education Requirements (36 credits)

ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101 or COM 183 or COM 225	Fundamentals of Speaking Persuasion Intercultural Communication*	3
MTH 178	General Trigonometry	3
BIO 101	Concepts of Biology	4
GLG 100	Introduction to Earth Science	4
ECO 211 or ECO 222 or GEO 101 or SOC 100	Principles of Economics I Principles of Economics II World Regional Geography Principles of Sociology*	3
PHL 205	Ethics	3
PLS 112	Introduction to American Government	3
Arts/Human. Computer Lit.	Elective(s)* Elective(s)	3 3

Core Courses (8 credits)

ENV 101	Environmental Science I	4
ENV 201	Environmental Science II	4

Major/Area Requirements (18 credits)

CEM 111	General Chemistry I	4
CPS 120 or CPS 161 or CPS 171	Introduction to Computer Science An Introduction to Programming with Java Introduction to Programming with C++	3-4
MTH 160	Basic Statistics	4
PHY 111	General Physics I	4
Elective	Choose a minimum of 3 credits from the following electives: BIO 102, BIO 103, BIO 107, BIO 227, BIO 228, CEM 122, CEM 211, CEM 222, GLG 103, GLG 104, PHY 122, Social Science MACRAO elective**	3

Minimum Credits Required for the Program: 62

Notes:

*Students transferring to EMU should consider taking COM 225, GEO 101 or an Arts and Humanities Elective that should meet EMU's Diverse World Requirement. See the WCC Bulletin for a list of courses.

**Students who want to meet MACRAO should choose a social science MACRAO course as one of the electives. See the MACRAO list in the WCC Bulletin to make course selections.

Environmental Science (ASENVS)

To prepare our students for a strong background in dealing with environmental issues and concerns from a global point of view. This program integrates biology, chemistry, geology and physics and is designed to lead to an AS degree which should transfer to 4-year institutions following the MACRAO guidelines. This program is designed to give students first hand lab experiences in studying environmental problems from a scientific perspective as well as propose and implement solutions to sustainability. It is ultimately preparing students for careers in resource management, waste management, sustainability, environmental consultation and the like.

Learn more about math or science through this associate degree program.

General Studies in Math and Natural Sciences (ASGSMS)

Associate in Science Degree

General Studies Program Requirements

(60 credits)

1. Complete the General Education Requirements for the Associate in Science degree.

Transfer students are encouraged to complete the MACRAO requirements.

General Education Requirements:

33-34

ENG 111	Composition I	4
ENG 226	Composition II	4
Speech	Elective(s)	3
Math 191 or higher	Elective(s)	5-4
Nat. Sci.	Elective(s)*	3-4
Soc. Sci.	Elective(s)**	6
Arts/Human	Elective(s)	6
Computer Lit.	Elective(s)	3

2. Complete a concentration in math or science

15

15 credit hours from one or two disciplines chosen from Biology, Chemistry, Math or Physics (A minimum of 6 credits at the 200 level is strongly recommended). Students transferring to EMU should select from the following WCC courses: BIO 103, BIO 208, BIO 215, BIO 227, BIO 228; CEM 111, CEM 122, CEM 211, CEM 222; MTH 191, MTH 192, MTH 197, MTH 293, MTH 295; PHY 111, PHY 122, PHY 211, PHY 222 or see an advisor to select courses that will meet the requirements of the college to which you are transferring.

3. Complete a second concentration.

9

Select 9 credits from one or two disciplines listed below (A minimum of 3 credits at the 200 level is strongly recommended). Select from Anthropology, Art, Astronomy, Biology, Chemistry, Communication, Criminal Justice, Dance, Drama, Economics, English, French, Health Science, History, Math, Music, Philosophy, Physics, Political Science, Psychology, Sociology or Spanish

4. Electives to complete a minimum of 60 credit hours

3

Minimum Credits Required for the Program:

60

Notes:

*Transfer students should select a lab-based, MACRAO-approved science course. See WCC catalog for eligible courses.

**Transfer students attempting to satisfy MACRAO should complete an additional 2-3 credit hours in Social Science courses. Courses used to meet General Education Requirements cannot be counted toward the minimum credits for the concentrations.

General Studies in Math and Natural Sciences (ASGSMS)

This program allows students to design a program of study to meet their individual needs. This may be a good option if students are undecided about a major and want to explore a variety of discipline areas with a concentration in math and natural sciences. The program also allows students to customize their coursework to the requirements of the senior college or university to which they are transferring. Students should begin by meeting with a counselor who will assist them in developing a program of study that meets all of the College's graduation requirements. A counselor can also help students determine their interests and career and educational goals as well as provide transfer and career information.

MATH AND SCIENCE

Students utilize this program in preparation for a degree in engineering or physics.

Math and Science (ASMSAS)

General Education Requirements

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	Introduction to Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6
Computer Lit.	Elective(s)	3

Core Courses

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

Complete the requirements for the following concentration.

Math Concentration

Mathematics (MATH)

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: 71

Associate in Science Degree

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 an Academic Math Level of 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.

Students utilize this program in preparation for a degree in engineering or physics.

Math and Science (ASMSAS)

General Education Requirements

ENG 111	Composition I
ENG 226	Composition II
COM 101	Fundamentals of Speaking
MTH 191	Calculus I
PHY 111	General Physics I
PSY 100	Introduction to Psychology
PLS 112	Introduction to American Government
Arts/Human.	Elective(s)
Computer Lit.	Elective(s)

Core Courses

CPS 171	Introduction to Programming with C++
MTH 192	Calculus II
PHY 122	General Physics II

Physics/Pre-Engineering (PENG)

CEM 111	General Chemistry I
MTH 197	Linear Algebra
MTH 293	Calculus III
MTH 295	Differential Equations
PHY 211	Analytical Physics I
PHY 222	Analytical Physics II

Minimum Credits Required for the Program:

(34 credits)

(12 credits)

(26 credits)

72

Associate in Science Degree

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 an Academic Math Level of 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 physics concentration requires one semester of high school physics or PHY 105 or PHY 111 with a "C" or better to enroll in PHY 211.
- The physics concentration requires 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 (34 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	Introduction to Psychology	3
PLS 112	Introduction to American Government	3
Arts/Human.	Elective(s)	6
Computer Lit.	Elective(s)	3

*The Bio/Premed concentration requires BIO 101 & BIO 103. The Chem/Premed 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.

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: 70

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 an Academic Math Level of 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 biology or chemistry concentrations require one year of high school chemistry or CEM 090 to enroll in CEM 111.



SOCIAL WORK

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		(33 credits)
ENG 111	Composition I	4
ENG 226	Composition II	3
COM 101 or COM 102	Fundamentals of Speaking Interpersonal Communication	3
MTH 160	Basic Statistics	4
BIO 101 or BIO 102	Concepts of Biology Human Biology	4
PSY 100	Introduction to Psychology	3
SOC 100	Principles of Sociology	3
Arts/Human.	Restricted Elective(s)*	3
Arts/Human.	Elective(s)**	3
Computer Lit.	Elective(s)	3

Major/Area Requirements		(28 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

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.

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.

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 of 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:

- Has a cumulative GPA of 2.0 in all WCC courses
- Demonstrates honesty in dealings with other students and faculty

Continued on next page



Human Services (AAHUST)

Associate in Arts Degree

Continued from previous page

- 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

Business and Computer Technologies Division

Business Department

Disciplines:

- Accounting (ACC)
- Business Management (BMG)
- Real Estate (RES)
- Tax (TAX)

Business Office Systems Department

Discipline:

- Business Office Systems (BOS)

Computer Instruction Department

Disciplines:

- Computer Information Systems (CIS)
- Computer Networking Technology (CNT)
- Computer Science (CPS)
- Computer Systems Security (CSS)
- Computer Systems Technology (CST)

Culinary/Hospitality Management Department

Discipline:

- Culinary Arts (CUL)

Digital Media Arts Department

Disciplines:

- Animation (ANI)
- Graphic Design Technology (GDT)
- Internet Professional (INP)
- Photography (PHO)
- Video Production (VID)

Drafting Department

Disciplines:

- Architectonics (ARC)
- Computer Aided Drafting (CAD)
- Interior Design (IDN)

Humanities and Social Science Division

Academic Skills Department

Discipline:

- Academic Skills (ACS)
- Reading (REA)

Behavioral Sciences Department

Disciplines:

- Human Services Worker (HSW)
- Psychology (PSY)
- Sociology (SOC)

English/Writing Department

Disciplines:

- English/Writing (ENG)
- Journalism (JRN)

Foreign Language Department

Disciplines:

- Arabic (ARB)
- French (FRN)
- German (GRM)
- Spanish (SPN)

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, Science and Health Division

Allied Health Department

Disciplines:

- Dental Assisting (DEN)
- Pharmacy Technology (PHT)
- Physical Therapist Assistant (PTA)
- Radiography (RAD)

Life Science Department

Disciplines:

- Biology (BIO)
- Physical Education Activities (PEA)

Mathematics Department

Discipline:

- Mathematics (MTH)

Nursing & Health Science Department

Disciplines:

- Health Science (HSC)
- Nursing (NUR)

Physical Sciences Department

Disciplines:

- Astronomy (AST)
- Chemistry (CEM)
- Environmental Science (ENV)
- Geology (GLG)
- Physics (PHY)
- Science (SCI)

Public Service Careers & Apprenticeships Division

Public Service Careers Department

Discipline:

- Child Care Professional (CCP)
- Criminal Justice (CJT)

United Association Programs and Services

Disciplines:

- Electrical Workers Apprenticeship (EWA)
- Local 190/UA Plumbers & Pipefitters (APP)
- United Association Pipefitters (UAF)
- United Association Plumbers (UAP)
- United Association Service Technicians (UAE)
- United Association Sprinkler Fitters (UAR)
- United Association Training (UAT)

United Association Apprenticeships

Disciplines:

- Bricklayer Apprenticeship (BAC)
- Ironworker Apprenticeship (IWA)
- Union Approved Supervision (UAS)

Vocational Technologies Division

Automotive Body Department

Disciplines:

- Automotive Body Repair (ABR)
- Collision Repair Technician (CRT)
- Custom Cars and Concepts (CCC)

Automotive Services Department

Discipline:

- Auto Services (ASV)

Construction Institute Department

Disciplines:

- Construction Management (CMG)
- Residential Construction Technology (CON)

Heating, Ventilation, A/C Department

Discipline:

- Heating, Ventilation, Air Conditioning and Refrigeration (HVA)

Industrial Technology Department

Disciplines:

- Advanced Manufacturing Systems (AMS)
- Electricity/Electronics (ELE)
- Fluid Power (FLP)
- Machine Tool Technology (MTT)
- Numerical Control (NCT)
- Robotics (ROB)

Motorcycle Technology Department

Discipline:

Motorcycle Service Technology (MST)

Welding and Fabrication Department

Discipline:

- Welding and Fabrication (WAF)



Course Descriptions

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Course Descriptions

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.

The next lines contain information about any prerequisites or co-requisites

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).	

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.

A student’s Academic Math Level expires 12 months after the calculation date (the date of COMPASS testing, or the date that the student’s WCC Math Level was established based on an outside assessment, or based on successful course completion.) For example, a student who is placed at

Academic Level 3 in Math but does not take another Math class within 12 months would need to take COMPASS again to establish his or her current Academic Math Level. WCC strongly encourages students moving through a series of related courses not to let more than a semester pass between such courses. If the Academic Math Level has expired, students should refresh their math skills before taking COMPASS again; go to www.wccnet.edu/compassprep to take advantage of the online self-study Math resources and then take COMPASS.

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

Course Placement	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*							
Reading	Reading Level	Completed Course**	COMPASS Reading	ACT Reading	SAT Writing	ASSET Reading	Nelson Denny	Exempt***
Referral to Washtenaw Literacy	<3		<53	<12	na	< 34	< 80	
REA 070	3		53	12	320	34	080	
ACS 107	4	REA 071	68	15	390	37	100	
ACS 108	5	ACS 107	78	18	450	41	115	
None Required	6		82	19	460	43	130	X

Course Placement	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*							
Writing	Writing Level	Completed Course**	COMPASS Writing	ACT Writing	SAT Writing	ASSET Writing	Exempt***	
ENG 050	2		<40	<14	<380	<38		
ENG 090	3	ENG 051	40	14	380	38		
ENG 100 / 107 / 111	6	ENG 091	81	20	480	46	X	

Course Placement	Any Test Score Or Class Below Will Bring You To The Academic Level In The Same Row*								
Math	Math Level	Completed Course**	COMPASS Code:	WCC Math Placement Test MPDE (Decimals) MPFR (Fractions) MPIN (Integers)	ACT Math	SAT Math	ASSET Math	Exempt***	
			Pre-Alg (CMPP)						
MTH 034	0		WCC Math Placement Test scores will be used to place students scoring 0-43	<75 on any	<15	<350			
MTH 067	1			≥75 on all	15	350	<39	X	
MTH 097 / 125 / 151	2	MTH 067	44		18	430	39		
			Algebra (CMPA)						
MTH 148/157**/160/167/169	3	MTH 097	46		21	500	n/a		
MTH 176 / 178 / 181	4	MTH 169	66		23	540	n/a		
			College Algebra (CMPC)						
MTH 180 / 182	5	MTH 176	46		26	590	n/a		
			Trigonometry (CMPT)						
MTH 191	7	MTH 180	46		28	630	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 of the course listed in the "completed course" column (or one of the test scores listed next to it) will bring the student to the academic level listed next to it. Successful completion requires a minimum grade of 'C' or 'S' or 'P'. Exception: Students not yet at Math Level 3 who successfully complete Math 151 in order to take Math 157 should know that Math 151 does not advance the student to Academic Math Level 3.

***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 1. Students who have an exempt score and wish to take a Math class which requires an Academic Level 2 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.

The ESL COMPASS Score or Completed Course Below Will Bring You To The ESL Level In The Same Row*

English as a Second Language (ESL) Levels

	ESL Level	Completed Course***	
ESL Writing Level			ESL COMPASS Writing Score ESLG
	E0**		<42
	E1		42
	E3	ENG 024	63
	E4	ENG 032	84
Out of ESL: no ESL grammar class required. Writing course following ENG 037/038: ENG 090, ESL section. Students may take regular writing Compass at this time.	E5	ENG 061	94
ESL Reading Level			ESL COMPASS Reading Score ESLR
	E0**		<38
	E1		38
	E2	ENG 023	65
	E3	ENG 028	78
Reading course following ENG 034: REA 070. Students may take regular reading Compass for placement at this time.	E5	ENG 034	87
ESL Listening Level			ESL COMPASS Listening Score ESLL
	E0**		<42
	E1		42
	E3	ENG 023	67
	E4	ENG 035	82
Out of ESL: no ESL listening class required	E5	ENG 065	92

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

**Students who score at ESL Level E0 on the ESL Compass placement test for Writing, Reading, or Listening are best served by the ESL groups offered by Washtenaw Literacy. Group times and locations can be found at http://www.washtenawliteracy.org/esl_group_schedule.pdf.

*** Successful completion of the course listed in the "completed course" column (or one of the test scores listed next to it) will bring the student to the ESL level listed next to it. Successful completion requires a minimum grade of 'C' or 'S' or 'P'.

English as a Second Language Prerequisites 2011-2012

ENG 023

ESL Writing Level E1
ESL Reading Level E1
ESL Listening Level E1

ENG 024

ESL Writing Level E1
ESL Reading Level E1
ESL Listening Level E1

ENG 027

ESL Writing Level E3
ESL Reading Level E2
ESL Listening Level E3

ENG 028

Prerequisite: ENG 027

ENG 030

ESL Writing Level E3
ESL Reading Level E2
ESL Listening Level E3

ENG 032

Prerequisite: ENG 030

ENG 033

ESL Writing Level E3
ESL Reading Level E3
ESL Listening Level E3

ENG 034

Prerequisite: ENG 033

ENG 035

ESL Writing Level E4
ESL Reading Level E3
ESL Listening Level E3
Students with ESL Writing Level E3 may enroll in ENG 030 or ENG 032 concurrently
Students with ESL Reading Level E2 may enroll in ENG 027 or ENG 028 concurrently

ENG 037

ESL Writing Level E4
ESL Reading Level E5
ESL Listening Level E3
Students with ESL Writing Level E3 may enroll in ENG 030 or 032 concurrently.
Students with ESL Reading Level E3 may enroll in ENG 033 or 034 concurrently

ENG 038

Prerequisite: ENG 037

ENG 060

Prerequisite: ENG 037 or 038 (may enroll concurrently)
ESL Writing Level E4
ESL Reading Level E5
ESL Listening Level E4
Students with ESL Reading Level E3 may enroll in ENG 033 or ENG 034 concurrently
Students with ESL Listening Level E3 may enroll in ENG 035

ENG 061

Prerequisite: ENG 060

ENG 065

ESL Writing Level E4
ESL Reading Level E5
ESL Listening Level E4

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Academic Skills

ACS

ACS 065 Success Skills Workshop**3 credits****Level I Prerequisites: Academic Reading Level of 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 college-bound students. Major areas of emphasis include the study of word derivations; context clues; dictionary skills; vocabulary acquisition strategies; pronunciation skills and some work with American idioms. An American historical novel is read and discussed to provide practice for new word acquisition skills. An individual final project is assigned where students teach specialized vocabulary from the academic area of their own choosing to the rest of the class.

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. Successful completion of this course with a minimum grade of "C" will raise your Academic Reading level to 5.

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). Successful completion of this course with a minimum grade of "C" will raise your Academic Reading level to 6.

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**

Through a variety of materials, technology and activities, students will learn strategies to increase reading speed, comprehension and critical reading skills. This college level course will improve the ability to meet the demands of the large amount of academic and career-related reading and will also enhance leisure reading.

ACS 111 College Success 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 analyze and evaluate the beliefs, attitudes, behaviors and skills that lead to academic, career and personal success. Through self-assessment, readings, activities and journal writing, students will synthesize data in order to improve self-management, increase self-esteem and maximize learning. Other topics include money management, effective use of college resources, critical thinking and decision making and effective writing and communication. Academic, career and personal goal setting will be explored. The title of this course was previously First Year Experience Seminar.

ACS 121 Career Planning Seminar**2 credits****Level I Prerequisites: Academic Reading Level 4; Academic Writing Level 3
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours**

This course is designed for persons undecided about a program of study or career goal 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, job skills, self-esteem and work attitude.

ACS 122 Career Decision Making**1 credit****Level I Prerequisites: Academic Reading Level 5; 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 course is designed for persons undecided about a program of study or career goal or contemplating changing careers. Students complete self-assessments of interests, work values, skills and abilities, personality preferences through exercises and vocational inventories. They also conduct informational interviews with professionals in their fields of interest.

ACS 123 Information Literacy**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 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 111 Principles of Accounting I**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; Academic Math Level 4 or MTH 125, MTH 160, MTH 176 or MTH 181, minimum grade "C"

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 minimum grade "D"**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This course continues the study of generally accepted accounting principles as they relate to financial accounting standards, financial statement presentation, and to the recording, valuation and disposition of assets and contingent liabilities.

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 types 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.

Animation

ANI

ANI 145 Concept Development for Animation**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 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**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.

Animation (ANI) – Architectonics (ARC)

ANI 160 Fundamentals of Movement and Animation 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This is an introductory course in moving and animating 3D models. Students will learn the theory of motion, movement and established principles of animating and apply these to their 3D artwork. Using existing models, they will develop motion and animation skills. Students will animate rigid objects, organic objects and simple characters. Students will be exposed to keyframe animation and direct animation.

ANI 230 Motion and Sound 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ANI 145, ANI 150 and GDT 140, 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.

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 155, 160 and 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, adaptive and developmental responses to stress, 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.

ARB 122 First Year Arabic II 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ARB 111 minimum grade “C-”

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

This is a continuation of an introduction to Arabic as a second/foreign language. It builds on the basic structures of Arabic and expands its uses in common situations of everyday communication. Students will acquire a solid grammatical base that will enhance their overall linguistic proficiency and enable them to pursue their interest in the language. The course exposes students to authentic Arabic cultural and linguistic material (audio tapes of songs, video records, poems and short stories etc).

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 3D digital modeling. Featured in this course are AutoCAD and Architectural/Revit version.

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 Writing Levels of 6; **Academic Math Level 2****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 they pertain 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 addresses 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/CADD 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.

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 a 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 such basic concepts as figure/ground interaction and value relationships. Some of the materials used may be pencils, paper, acrylic paint and linoleum block printing.

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.

<p>ART 108 Three-Dimensional Design 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 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. Projects will introduce the student to a variety of materials and use of both hand and power tools.</p>	<p>ART 125 Painting II 4 credits Level I Prerequisites: No Basic Skills; ART 114 minimum grade "C+." 30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours Students will continue exploration of the fundamental problems and issues of painting. Greater emphasis is placed on individual development.</p>
<p>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 as a beginning level course before other art courses at WCC are taken. This course is recommended for students who plan to transfer to another college or university.</p>	<p>ART 127 Life Drawing I 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 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.</p>
<p>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 transfer to another college or university.</p>	<p>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.</p>
<p>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.</p>	<p>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.</p>
<p>ART 120 Portrait Painting and Life Drawing 4 credits Level I Prerequisites: Academic Reading and Writing Levels of 6; ART 101 minimum grade "C" 0 lecture, 0 lab, 0 clinical, 90 other, 90 total contact hours The major emphasis of this course is direct observation and artistic expression of the human form using traditional media, Conte and pastel. Design and value relationships are studied, as are the superficial muscular and skeletal systems which affect the surface form. Sessions on portraiture using the anatomical approach are included.</p>	<p>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.</p>
<p>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.</p>	<p>ART 143 African American Art and Culture 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 African American art and culture. It explores the political, social, and cultural effects of various events such as The Revolutionary War, The Civil War, The Great Migration, and The Civil Rights Movement on the arts. Students will be introduced to literary, artistic, and cultural achievements from the colonial era to the present.</p>
<p>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.</p>	

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; ABR 112 minimum grade "B"**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

This course is designed for creative students with an interest in the art of custom painting. Participants in this course learn techniques such as air brushing, pin striping, and lettering, along with the creation of custom graphics, murals and etching. Students will use special effect colors such as pearls and candies on lab assignments that were expertly developed to help participants succeed in the field of custom painting. Students must purchase their own air brush.

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.

ABR 230 Advanced Auto Body V: Advanced Auto Refinish Applications **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; ABR 124**30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours**

In this class, students utilize periods of concentrated effort on specific assignments in selected areas of the auto body repair field. Students work with instructor consultation to demonstrate development within the assigned area of general collision service, body shop organization and management or estimating automobile physical damage.

Automotive Services**ASV****ASV 151 Automotive Service I** **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

In this course, students will learn basic shop safety and accepted shop practices. Included in this course is the theory and operation of automotive gasoline engines - disassembly, measurements, assembly and project organization. Students will learn underhood and undercar preventative maintenance theory and practice as well as general mechanical skills. The focus of this course allows students to gain practical experience in the laboratory. This course was previously ASV 141, Automotive Mechanics I.

ASV 152 Automotive Service II **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

In this course, students will learn basic electrical theory, use and interpret wiring diagrams and electrical testing equipment. In addition, students will learn the fundamentals of brakes, suspension and steering systems. Students will learn the skills needed to replace a number of commonly serviced electrical and chassis components. The focus of this course allows students to gain practical experience in the laboratory. This course was previously ASV 142, Automotive Mechanics II.

ASV 153 Automotive Service III **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; ASV 151 and ASV 152, minimum grade "C"**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

This course continues the theory and operation of automotive electrical systems and introduces the fundamentals of the basic fuel system. Students will have the opportunity to inspect and perform basic services on electrical and fuel system components. The focus of this course allows students to gain practical experience in the laboratory. This course was previously ASV 143, Automotive Mechanics III.

ASV 154 Automotive Service IV **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; ASV 151 and ASV 152, minimum grade "C"**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

This course covers the theory and fundamentals of testing and repairing fuel injection, emission control, and on-board diagnostics (OBD II) systems. This course also covers basic on-car engine repairs and diagnostic testing. The focus of this course allows students to gain practical experience in the laboratory. This course was previously ASV 144, Automotive Mechanics IV.

ASV 155 Automotive Service V **4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; ASV 151 and ASV 152, minimum grade "C"**45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours**

This course covers the theory and operation of automatic and manual drivetrain systems. Topics include the basic diagnosis and repair of automatic transmissions and the basic diagnosis and repair of major drivetrain components. Students will be introduced to 4-wheel drive systems. Upon successful completion, the student will be able to service automatic transmission components as well as diagnose and replace manual drive train components. The focus of this course allows students to gain practical experience in the laboratory.

ASV 157 Repair Facility Operations and Advising 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

In this course, students will learn the skills needed to execute vehicle repair transactions in an automotive service environment. Using computer invoicing software, students will learn to prepare and execute a repair transaction following the State of Michigan guidelines. This course will also provide knowledge about mechanic and repair facility licensing requirements.

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 251 Engine Diagnosis and Repair 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

Students learn the theory and execution of automotive engine mechanical diagnosis and repair during this course. Students learn to apply proper technique to perform a number of significant engine repairs. Students will develop skills for assessing the condition of engines before repair. This course was previously ASV 241, Engine Repair.

ASV 252 Automatic Transmissions 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

Diagnosis of mechanical, hydraulic and electrical transmission systems is featured in this course. Hydraulic and electrical fundamentals, as they pertain to transmission operation, are included. Students will develop skills in the removal, disassembly, repair, reassembly and installation of automatic transmissions and transaxles. This course was previously ASV 242.

ASV 253 Manual Drivetrain and Axles 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

This course is designed to give an understanding of the diagnosis and repair of the automotive drivetrain systems. The course includes manual transmission, manual transaxle, differentials, transfer cases and clutch system diagnosis and repair. This course focuses on removal, service and replacement of major drivetrain components and sub-systems. This course was previously ASV 243.

ASV 254 Suspension and Steering 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

In this course, students learn the theory and execution of automotive suspension and steering system diagnosis and repair. Students will apply proper techniques in performing 4-wheel alignments as well as major suspension and steering component replacement. This course was previously ASV 244.

ASV 255 Brakes 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

In this course, students develop skills in diagnosing and repairing brake systems on vehicles. Instruction includes hydraulic system service and mechanical brakes system service. In addition, diagnosis and repair of anti-lock brake and stability control systems is included. This course was previously ASV 245.

ASV 256 Electrical and Electronic Systems 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours

In this course, students learn the theory and operation of automotive electrical systems. It includes the diagnosis and repair of automotive electrical lighting, instrumentation, convenience and accessory systems. There is a focus on advanced tools and techniques used to diagnose electrical and electronic systems found in today's modern automobiles. This course contains material previously taught in ASV 246, Electrical Circuits.

ASV 257 Heating and Air Conditioning Systems 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

Automotive heating and A/C systems are explored including servicing procedures and diagnostic techniques. A/C system diagnosis and repair are performed with a focus on the multiple types of control systems used in modern automobiles. The proper recovery, recycling and use of modern refrigerants are covered in this course. This course was previously ASV 247.

ASV 258 Engine Drivability 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

This course is designed to provide the student with the experience needed to develop skills in troubleshooting and repairing drivability problems with engine management systems. This course details the study of fuel, ignition and emission systems as they pertain to engine drivability concerns. This course was previously ASV 248, Engine Performance.

ASV 259 Diagnosis and Repair 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 157 minimum grade "C" and any 2 courses from ASV 254 - ASV 258, minimum grade "C", may enroll concurrently; Completion of Automotive Mechanics certificate or experience

45 lecture, 60 lab, 0 clinical, 0 other, 105 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 in a repair facility environment. There is a focus on "road going" vehicle repair and diagnosis in this course. Students will experience the various roles they will encounter in a repair facility. This course was previously ASV 249.

ASV 261 Alternative Fuels and Hybrid Vehicles 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 256 and ASV 258, minimum grade "C"; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

Students will explore the theory and application of alternative fuels and hybrid vehicles. Students will develop the skills to service alternative fuel vehicles and safely service hybrid vehicles. Students will learn about the various fuel systems and will develop the skills needed for the diagnosis and repair of fuel and electrical systems.

ASV 262 Diesel Technology **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 258 minimum grade "C"; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

Students will explore the theory and application of modern light-duty diesel engines in automobile and light truck applications. Students will learn about modern diesel engines and fuel systems and will develop the skills for diagnosis and repair of fuel and electrical systems. Turbochargers, blowers and catalytic converters as well as particulate trap exhaust systems will also be covered in this course.

ASV 263 Vehicle Performance **2 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; ASV 255 minimum grade "C"; Completion of Automotive Mechanics certificate or experience

30 lecture, 22.5 lab, 0 clinical, 0 other, 52.5 total contact hours

This course provides students with the knowledge and skills necessary to diagnose, measure and improve vehicle performance on late model automobiles. The course will cover the areas of basic power train performance, chassis design/dynamics, fuel/ignition systems and basic aerodynamics including safety improvements to meet performance gains.

ASV 269 Performance Automotive **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Automotive Mechanics certificate or experience

45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours

Select 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 drivetrain, electrical systems, suspension, brakes, steering and final safety inspections. Students will work in conjunction with the Auto Body classes to complete a project vehicle.

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

This course analyzes the processes and mechanisms in biological systems including genetics, ecology, evolution, animal behavior and cell energetics. BIO 103 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 native trees and shrubs, wild flowers, and 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 142 Introduction to Nutrition, Exercise and Weight Control **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6

Corequisites: PEA 115

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course explores the relationship between nutrition and energy expenditures to body mass regulation. Part 1: Nutrition, metabolism, and energy transfer (food nutrients, optimal nutrition for exercise and sport, exercise energy utilization and the bioenergetics of food and activity). Part 2: Body composition techniques (assessment of body fat and lean mass, obesity, weight control, modification of eating and exercise behaviors, diet practices: starvation, fad diets, optimal food intake, and psychosocial aspects of weight control: cultural and gender differences). Part 3: Physiologic considerations in total fitness (strength, anaerobic and aerobic power, aging, exercise and health).

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 199 Anatomical Studies **1-3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours

Individualized student experience in cadaver prosection under the supervision of WCC Biology faculty.

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 high school chemistry or 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 gives an introduction to the basic principles of genetics and their application to viruses, bacteria, plants, fungi, and animals, including humans. Classical and molecular genetic mechanisms are covered. Laboratory experiments demonstrate genetic principles and include classical and molecular techniques. Students who have taken one year of high school chemistry with a grade of C or better may have the prerequisites 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 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 or BIO 102, minimum grade “C”

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course introduces plant biology as a field and covers major topics, including: plant biochemistry, plant structure and function, plant growth, nutrition and regulation, plant evolution and classification of the major divisions focusing on flowering plants. The laboratory component emphasizes and compliments the lectures while focusing on plant cells, structure and function, photosynthesis, flowers, fruits and seeds and growth and development through a typical plant life cycle. 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 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 outside 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 in winter.

Bricklayer-Allied Craftwkr App**BAC****BAC 100 Labor and Trade Union History and Impacts 1 credit**

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

The history and future of labor and trade unions, with particular emphasis on the International Union of Bricklayer and Allied Craftworker, will be explored. Topics also include objectives and methods of organized labor and the legal and institutional framework of collective bargaining. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 101 Safety Practices 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 impact of the Occupational Safety and Health Act and obtaining the required certifications will be addressed. The purpose of this course is to teach job safety practices and procedures. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 102 Professional Skills Development 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 an introduction to human relation skills needed on the job site. Workplace skills such as effective communication, motivation, working with supervisors, teamwork and Equal Employment Opportunity Commission (EEOC) will be covered. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 110 Introduction to Brick and Blocklaying Apprenticeship 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 the introduction to brick and block laying for new apprentices. Course topics include the expectations of the apprenticeship program, role of International Masonry Institute (IMI), quality assurance and the construction process. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 111 Introduction to Masonry Construction 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 the basic concepts of masonry construction including how and where various materials are used and the required tools and equipment. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 112 Mortar Manipulation 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 the types and physical properties of mortars. An overview of mortar materials, the manufacture of mortar and the specific manipulations of mortar are also covered. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 120 Introduction to Tile Mechanic Apprenticeship 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 the introduction to tile setting for new apprentices. Course topics include the expectations of the apprenticeship program, role of International Masonry Institute (IMI) and the construction process. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 121 Introduction to Tile Mechanic 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 the basic concepts of tile work including how and where various materials are used, adhesives and the required tools and equipment. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 122 Basic Tile Setting 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 an introduction to basic tile setting. Topics include surface preparation, substrate installation and cutting, setting and finishing tile. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 210 Introduction to Blocklaying 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 topics include common concrete masonry units, parts of a block and wall, joints, bonds, procedures, techniques and steps to basic blocklaying. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 211 Introduction to Bricklaying 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 basic principles and skills used in bricklaying. Topics include types and properties of brick, structural bonds and applying mortar. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 212 Masonry Wall Construction 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 teach the fundamentals of basic masonry wall construction and applicable reinforcement concepts. Types of masonry construction and their descriptions; methods of layout; bonds; veneer, composite, and cavity walls; openings; anchoring devices; and grouting are covered. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 213 Masonry Construction Techniques and Restoration 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 cover basic repair and restoration of masonry in addition to specialty masonry construction techniques. Topics include cleaning, pointing, arches, brick pavers, structural glazed tiles, fireplaces and chimneys. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 220 Wall Tile Installation 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 installing wall tile. Methods of installing wall tile on concrete, wood, gypsum board, glass fiber mesh and reinforced board will be covered. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 221 Floor and Stair Tile Installation 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 cover basic installation of floor and stair tile. Methods of installing tile on interior wood and cement subfloors and concrete, wood and metal stairs will be included. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 222 Applications for Tile Installation 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 application of tile installations. Bathtub, shower, foundation, curbs, countertop, ceiling/soffit, mantel, hearth and swimming pools tile installation will be covered. This course is only available for Bricklayer and Allied Craftworker apprentices.

BAC 223 Tile Layout, Techniques and Restoration 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 cover tile layout, techniques and restoration. Topics will include layout design principles, renovation and repair, cleaning, caulking, quarry tile, domes, arches and columns. This course is only available for Bricklayer and Allied Craftworker apprentices.

Business Management

BMG

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 109 Starting Your 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

In this course, students will identify, investigate and test their business idea using resources customized to their particular business idea. In addition, they will consider the personal commitment, motivation, and skills needed to have your own business and they will assess their specific strengths and areas for improvement. The title of this course was previously Entrepreneurship I - The Essentials.

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. Students are expected to make use of computer technologies to learn in both individual and collaborative environments 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 purpose of this course is to provide students with an understanding of management and labor roles in society and the impact of their relationship on company policies and practices. Students will acquire a basic knowledge of collective bargaining, negotiations, and a framework for analysis of 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

The purpose of this course is to provide students with an understanding of the responsibilities and ethics of a salesperson, effective prospecting skills, preparing customer presentations, handling customer objections, closing a sale, and understanding the basics of a business to business contract.

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 205 Creating the Customer Experience 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 how to create a highly-evolving customer experience in order to build customer loyalty, word-of-mouth customers, and in turn, organizational success. Students apply the core concepts to develop customer experience strategies with a focus on enhancing the quality of the interactions between the service provider and the client/customer. Finally, students refine their personal skills needed to be successful in our constantly changing and customer-centric business environment.

BMG 206 Retail Principles and Practices 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 managing, marketing, selling, promoting and distributing of retail goods and services. Students will learn the conceptual, theoretical and strategic framework of fundamental retail management principles blended with the practical applications of retailing policies, methods and procedures. Students will learn to apply their understanding of the retailing environment and evaluate the financial implications of their retail decisions to prepare them for a career in the retail industry.

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 non-verbal 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 211 Merchandising and Inventory Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 206 minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In most retail operations, inventory is the largest asset, and managing this investment is critical to increasing sales and profitability and providing capital for expansion. Students will learn the practices for determining product assortments, acquiring/replenishing stock and reducing excessive inventory. Supply chain, store layout and visual display principles will also be addressed. Finally, students will learn to perform the calculations related to all aspects of inventory management.

BMG 215 Planning an E-Commerce Business 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 155 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 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 advanced 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

In this course, students will gain an understanding of marketing strategy, segmentation, differentiation, buyer behavior and emerging technology tools for marketers. The course also focuses on marketing decisions, with emphasis on the key strategy decisions in each area of the marketing mix: product, place, promotion and pricing.

BMG 265 Business Statistics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4 or MTH 125 or MTH 160 minimum grade "C"; CIS 100 or CIS 110

This course introduces the concepts of statistics and their application to business decisions. Topics include elements of data set description, probability, random variables, sampling distributions, mean and proportion estimation, hypothesis testing, and regression and correlation analysis. Emphasis is on the application of appropriate statistical methods to analyze data for the purpose of making sound business decisions.

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 275 Business and Supply Chain Analytics 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 4 or MTH 125 or MTH 160, minimum grade "C"; CIS 100 or CIS 110

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students are introduced to the decision-making process and related decision-support tools that managers use on a daily basis. Students will gain the managerial, technical and analytical skills needed to gather, organize and analyze data used to describe and keep track of departmental as well as company performance. Through the use of scenario planning, computer modeling, and business related simulations, students will gain practical experience in anticipating the impact of decisions and applying sound reasoning when creating intelligent solutions to realistic business problems.

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

Students will learn and utilize the Project Management Methodology along with the general functions of management. Using project management software, team strategies, business applications and effective communication controls; students will plan and manage projects. The course will cover the following project management knowledge areas as outlined by the Project Management Institute: integration management, scope management, time management, cost management, human resources management, and communications management.

BMG 295 Capstone: Retail Management 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; BMG 205, BMG 206, BMG 211, BMG 230 and BMG 275, minimum grade “C” all BMG courses; BMG 205, BMG 230 and BMG 275, may enroll concurrently

0 lecture, 0 lab, 0 clinical, 15 other, 15 total contact hours

Students will apply their knowledge of retail management by conducting a business analysis which integrates the concepts, principles and practices learned in prerequisite courses. Students will analyze the environment, operations, marketing, and personnel aspects of a retail store and describe the findings in a final report that demonstrates an understanding and real-world application of managing in a retail environment.

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 proof-reading 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 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 184 Spreadsheet Software Applications 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

In this course, students are taught introductory 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 saving a workbook as a Web page. 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. This course contains material previously taught in BOS 183.

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 the Internet. Topics covered include sending and receiving email; 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.

BOS 274 BOS Co-op Education II 1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BOS 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, 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 second of two-co-op courses.

BOS 284 Spreadsheet Software Applications II **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 2; BOS 184 minimum grade “C”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is the second of two courses in spreadsheet applications. Advanced techniques using Microsoft Excel in the work environment will be stressed. Skills and concepts include working with named ranges and structured references, using auditing tools to analyze data, creating scenarios, creating data maps and pivot tables, creating and using macros, and using workbook protection. Group participation in solving complex formulas and functions is part of this course. This course contains material previously taught in BOS 183.

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 102 Chemistry for Elementary Teachers **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 is designed for students who are planning to teach in elementary schools. It outlines the basic concepts of chemistry such as atomic structure, matter, energy and bonding. The laboratory portion emphasizes the discovery approach using simple equipment and chemicals that are easy to obtain and safe to use around grade school children.

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; MTH 169 or higher (excludes MTH 178 and 181); high school chemistry (taken within last 5 years) or CEM 090 (taken within last 5 years), minimum grade “C” all CEM, MTH and high school requirements

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course covers the major topics in chemistry including: states of matter, physical and chemical changes, stoichiometry, atomic and molecular structure, chemical bonding, thermochemistry and intermolecular forces. It is intended for students in a professional or pre-professional curriculum. Students need intermediate algebra skills to be successful in this course.

CEM 122 General Chemistry II **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CEM 111 (within past 5 years) and MTH 176, both minimum grade “C”

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course is the second of a two-course sequence in general chemistry for pre-professional and liberal arts students. This course develops the concepts of chemical kinetics, chemical equilibrium, chemical thermodynamics and electrochemistry. The ability to solve mathematical equations involving logarithms and exponentials is essential to success in this course.

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

This course is 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, metabolism 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; CCP 101 minimum grade “C” and HSC 131 with grade “P”; both courses may enroll concurrently

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 nutritious 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, national accreditation standards, state and national curriculum standards, and quality indicators are emphasized in relationship to establishing and operating programs for children from birth through age twelve.

CCP 200 Working with Families in a Diverse Society 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course explores the parent - professional partnership. Emphasis is on increasing knowledge and skills for working with diverse families, family differences and functions, communication strategies, and methods for increasing parent involvement in facilitating optimal child development. Advocacy on behalf of children and families, and resources for the professionals are also included. A supervised practicum is a prerequisite for this course. This title of this course was previously Working with Parents.

CCP 204 The Developing Professional in Early Childhood Education 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 200 or CCP 220, minimum grade “C”; ENG 226 minimum grade “C”; MTH 149 minimum grade “C”; 45 Early Childhood Education program credits; consent required

Corequisites: CCP 205

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Students use a reflective-inquiry approach to understand how child development theories and evidence-based practices are used as the basis of quality early childhood education programs. Skills in observation, understanding adult-child interactions, child guidance, diversity, curriculum content areas and classroom environment are explored.

CCP 205 Practicum for the Developing ECE Professional 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade “C”; consent required

Corequisites: CCP 204

0 lecture, 0 lab, 0 clinical, 36 other, 36 total contact hours

This course provides an introduction to the early childhood education classroom setting. Students volunteer in a pre-approved early childhood classroom under the guidance of a master teacher for three hours a week for a minimum of 12 weeks during the semester (minimum of 36 clock hours).

CCP 209 Curriculum for Young Children 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade “C”; CCP 132 and CCP 133

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides an overview of curriculum for young children from birth to age twelve with emphasis on two through five years old. The focus is on developing multi-cultural/anti-bias curriculum activities that are developmentally appropriate for various ages and stages of development. Experience with children in a group setting during the semester is required. Students with a National CDA certificate may request an override for CCP 132 and CCP 133.

CCP 210 Child Guidance and Classroom Management 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade “C”; CCP 132 and CCP 133

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 from 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. Students with National CDA certificate may request an override for CCP 132 and 133. This course was previously CCP 110.

CCP 211 Administration of Child Care Programs 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 113, CCP 122, CCP 123 and CCP 209, minimum grade “C”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course meets Michigan’s child day care administration requirement for program directors and site supervisors. The basis of effective program management is reviewed. Students acquire knowledge of policies relating to children, staff, parents and center operations. Students write policies and procedures required of a program director in Michigan and collect resources needed by an effective program manager. Students who possess the National Child Care credential (CDA) or other professionals who qualify for an administration course should contact the instructor for permission to register.

CCP 218 Advanced Child Care Seminar 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 209 minimum grade “C”; Completion of 50 credit hours in CCP program requirements; consent required

Corequisites: CCP 219

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course focuses on leadership and curriculum skills needed as a director or lead teacher in a child care center. Students refine skills in developing and evaluating sequences of developmentally appropriate learning activities for young children. Students plan and execute a leadership project. Confirm eligibility and suitable employment in a licensed child care center with the program adviser prior to enrolling.

CCP 219 Advanced Child Care Practicum 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 209 minimum grade “C”; Completion of 50 credit hours in CCP program requirements; consent required

Corequisites: CCP 218

0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours

During this supervised practicum experience, students assume the lead teacher role for a minimum of two weeks. Students implement planned activities, refine curriculum planning and evaluation skills, develop skills in self-assessment and program evaluation, and keep a reflective teaching journal. Employment in a licensed child care center is required. Students must meet with a program advisor prior to enrolling in the course.

CCP 220 Development and Care of Infants and Toddlers 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 minimum grade “C”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the normal development of infants and toddlers. Emphasis is on the care and education of infants and toddlers in licensed group settings with attention to physical environment, equipment and materials and care giver strategies.

CCP 251 Education of Exceptional Children 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CCP 101 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; Completion of Auto Body Repair certificate with minimum grade “B”

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.

CRT 201 Collision Technician I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade “B”

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.

CRT 220 Refinish Technician II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade “B”

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.

CRT 221 Collision Technician II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade “B”

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. Instruction will be provided on various types of collision structural damage, frame rack set-up and measurement including diagnostics and theory of repair.

CRT 240 Refinish Technician III 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade “B”

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

Students will learn 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 blendable color match will also be discussed.

CRT 241 Collision Technician III 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade “B”; CRT 201, CRT 221, and WAF 289 minimum grade “B”

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

Students learn to repair 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; Completion of Auto Body Repair certificate with minimum grade “B”; CRT 200, CRT 220, and CRT 240, minimum grade “B”

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course provides 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; Completion of Auto Body Repair certificate with minimum grade “B”; 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; Completion of Auto Body Repair certificate with minimum grade “B”; 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 performance-based course introduces students to the world of radio production. Instruction in the basic fundamentals of radio allows students to experience the hands-on processes involved, including equipment operation and editing software, mixing and editing techniques and the production process. With this knowledge, students create a variety of live and edited projects including promos and a weekly show on WCC's own radio station, Orchard Radio. A brief overview of the history of radio and an understanding of the terminology complete this course.

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 media of the broadcast industry. Through hands-on exercises and projects, students will become familiar with various writing techniques, develop broadcast writing skills and apply those skills to the creation of news stories, interviews, narration, pitches, 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 about upcoming styles.

COM 160 Voice and Articulation 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 students to the verbal and non-verbal elements that are utilized in broadcast announcing. Focus is placed on the verbal basics such as pitch control, resonance and articulation, along with the non-verbal fundamentals of paralanguage and body language. These rudiments are paired together with copy analysis and script marking to give students a full understanding of the process of announcing in the many different fields of broadcasting. Practice in writing and script reads, vocal exercises and self-evaluations give the student ample opportunities to understand and showcase these new techniques.

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
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will examine and analyze the persuasive techniques used within the different mediums of the mass media. Emphasis will be placed on radio and television and the various segments within those mediums including news, advertising and commercial product placement. This course will expose students to various theories and allow them to identify those theories which are prevalent throughout the mass media and the persuasive effects those theories have on the various audiences.

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 210 Nonverbal 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

In this course, students will explore and examine various functions and categories of nonverbal communication including, but not limited to, gestures, movement, facial expressions, vocal behavior and appearance. Through interactive exercises, students will learn how to enhance their own nonverbal communication behavior and better interpret others' behavior to become more successful in their personal and professional lives.

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 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 and analyzes all engineering drawings (blueprints) and electronic drawings used in an industrial setting. Students learn to read, sketch and use various types of engineering documentation. They review and sketch machine drawings, sheetmetal, layouts, hydraulic and pneumatic schematics, industrial-based electrical schematics and diagrams, piping layouts and schematics and welding fabrication drawings. Students learn national standards as they apply to these 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 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 ANSI standard fits and 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"
45 lecture, 15 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 are 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.

Computer Information Systems**CIS****CIS 099 Computer Skills for Beginners****1 credit****Level I Prerequisites:** Academic Reading Level 3; Academic Writing Level 2**15 lecture, 15 lab, 0 clinical, 0 other, 30 total contact hours**

This class teaches the minimum Computer Literacy skills needed to succeed at WCC. Competencies covered include using Microsoft Windows, basic word processing, Internet skills, file management and email. Students will also be exposed to Blackboard and MyWCC basics. This title of this course was previously Computer Literacy.

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 the fundamentals of using office productivity software (word processing, spreadsheet, presentation). The office productivity software covered is Word, Excel and PowerPoint. Other topics covered include Windows fundamentals, Web concepts, email concepts, computer hardware, operating systems, software applications and viruses. Class format includes hands-on work on the computer. Basic computer familiarity is assumed, students with no prior experience with computers are advised to take CIS 099 or CIS 117.

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 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 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 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 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, 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 288 Systems Analysis and Design **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 161 or CPS 171, 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.

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 is 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 Active Directory **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 201 minimum grade “C”, may enroll concurrently or CSS 180 minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course, students will gain extensive experience in the setup and configuration of Microsoft Windows Server Active Directory (A.D.) - the key element in Microsoft’s implementation of a client/server network. Emphasized are A.D. installation, user/group accounts, sites, global catalogs, FSMO roles, security, delegation and group policy implementation. This course will build a strong foundation as part of the preparation for the Microsoft MCSA/MCTS certification as well as job training.

CNT 216 Internetworking II - Routers **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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 217 CCNA Security Certification **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 236 minimum grade “C” may enroll concurrently or equivalent industry experience

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course prepares students for the CISCO Certified Network Associate (CCNA) Security certification examination. The course provides students with the knowledge and hands-on skills necessary to install, configure and monitor CISCO security devices.

CNT 223 Windows Server Networking Infrastructure Configuration **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CSS 180, CNT 211 or CST 225, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course prepares students to install, configure and administer Windows Server Networking Services. Services configured on server include Telnet, FTP, DHCP, DNS, WINS, RAS, VPN, Router, NAT and File/Print. Networking basics, including the OSI/TCP Models, IP addressing and subnetting, are also reviewed. All server configurations are tested from clients using XP Pro/Vista. The course materials are based on Server 2003 MCSA/Server 2008 MCTS certifications.

CNT 224 Microsoft Server Administrator **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 223 minimum grade “C”, may enroll concurrently

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course will give a student extensive experience in Windows Server Management and Administration. Emphasized are Windows deployment services, network infrastructure servers, including routers, RRAS, radius, NAT, IIS services and terminal services. Imaging, virtual machines, network load balancing, backup strategies and system fault tolerance are also covered. This course will build a strong foundation in preparation for future employment as well as the Microsoft MCSA/MCITP Certification.

CNT 226 Internetworking III - Switches**4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; CNT 216 minimum grade “C-” or equivalent**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. It provides students with the knowledge and skills necessary to install, configure, update, and troubleshoot switched LANs and VLANs. Students learn additional skills including classless IP addressing, configuring single area OSPF and EIGRP, switching concepts, configuring CISCO switches, configuration of VLANs, concepts and configuration of VTP, Access Control Lists, and an introduction to wireless LANs. Students must complete CNT 216 or have instructor approval to register for this course. 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 237 Health Information Networking**4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; CNT 236 minimum grade “C”**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

The CISCO Health Information Networking course is a technology-focused curriculum primarily designed for CISCO Networking Academy students who are looking for career-oriented, entry-level health care focused specialist skills. It is designed for students pursuing opportunities in the health IT field.

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 251 Designing Windows Server Security**4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; CNT 211 minimum grade “C” or active directory experience**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This course familiarizes students with the various tools and features provided by Windows Server necessary to secure Windows Network resources. These include methods for securing Active Directory, implementing Certificate Services, setting up secure authentication, configuring ACLs, deciphering UAC, designing firewall and network access protection policies, locking down Windows services, developing effective group policies, planning an auditing scheme and building a Patch Management Program.

Computer Science**CPS****CPS 112 Game Development for Beginners****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 introduces the basics of 2D game design and development. Students will identify game resource requirements and then use supplied game resources to make a complete 2D game. Students will develop game algorithms using object instances, sprites, events, action blocks, library functions, levels, sound effects, music, rooms and scores. Students will develop games without using programming language, but they are expected to have experience with computer application software.

CPS 120 Introduction to Computer Science**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; CIS 100 or CIS 110**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 programming field or for those who do not want to take programming courses but a computer course is required. Students learn to write, enter, compile and execute simple computer programs. This course is intended to bridge the gap between a basic computer literacy and advanced courses. Topics include numbering systems, operating systems, database, programming, networking, Internet and algorithms. Students must have basic computer literacy in order to be successful in this course. Students with computer experience equivalent to CIS 100 or CIS 110 may contact the instructor for permission to waive the prerequisite.

CPS 161 An Introduction to Programming with Java**4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; Academic Math Level 4; CPS 120 minimum grade “C”**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This course is an introduction to the Java programming language. Looping, conditional logic and string manipulation are some of the basic programming concepts covered. Object-oriented concepts are covered such as constructors, polymorphism, abstract classes, interfaces and exceptions. Input/output (I/O) and graphical user interface (GUI) topics are minimally covered. CPS 261 will cover these topics in depth. Students who have previous programming experience equivalent to CPS 120 should contact the instructor for an override. 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 251 Android Programming Using 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**

In this course, students create programs written in Java to run on the Android smart phone operating system. Google APIs for telephony, GPS and “Google maps” will be explored. Students taking this class should have a good knowledge of Java.

CPS 261 Advanced Java Concepts 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 course is a continuation of the Java concepts covered in CPS 161. Topics covered include input/output (I/O), graphical user interface (GUI) associated with AWT/Swing, data structures, networking, and multitasking (threads). Students entering this class should have a good understanding of object-oriented programming concepts such as inheritance and polymorphism. The title of this course was previously Programming Data Structures in Java.

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”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course continues the C++ sequence. It covers more advanced computer science features as implemented in C++. Topics include advanced data structures, complexity/efficiency of algorithms, recursion and problem solving.

CPS 276 Web Programming Using Apache, MySQL, and PHP 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 161 or CPS 171, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Students will build dynamic database-driven Web applications using PHP and MySQL. Students who have not taken CPS 161 or CPS 171, but have equivalent programming experience in any language, should request an override from the instructor or department chair. HTML knowledge is helpful.

CPS 278 Java Server Programming 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 course covers Java Servlets, Java Server Pages (JSP), Java Bean fundamentals and Java Database Connectivity (JDBC). Students taking this class should have a good knowledge of Java fundamentals. Some knowledge of simple HTML and SQL is helpful but not mandatory. This course was previously CIS 278.

CPS 280 Advanced Web/Database Programming 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Reading or Writing Levels of 6; CPS 276 or CPS 278, minimum grade “C+”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This class covers advanced Web/database concepts. XML concepts (including SAX and DOM Parsing) will be used to provide Web/Android communication and database import/export. The course will also cover dynamic Web data access using AJAX and JQuery. Students will also be exposed to transferring data over secure connections using Hypertext Transfer Protocol Secure (https). Cascading Style Sheets (CSS) and professional HTML are given minimal consideration (students interested in these topics should consider the Web Technology certificate).

CPS 293 C# .NET 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CPS 161 or CPS 171, 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 programming techniques, such as data abstraction, encapsulation, polymorphism and inheritance. This course will cover Graphical User Interfaces (GUI) using console application, Window Forms (WinForms) as well as Active Server Pages (ASPX) Web pages. Other topics include: properties, exceptions, events, collections, graphics data interface (GDI+). Data access techniques will be covered including input/output (I/O) classes, database active-X data objects (ADO.Net).

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 I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 100 or CIS 117, minimum grade “C” or industry experience

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

Computer Security I is the introductory course in a series of courses dedicated to computer security. It provides an overview of computer systems with an emphasis on security. Topics include basic architecture of computers and operating systems, command line interface, networking concepts and security fundamentals. This course assumes an intermediate level of computer knowledge and experience. The title of this course was previously Computer Security for PC's.

CSS 200 Computer Security II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 121, CNT 201 and CSS 180, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course provides a solid grounding in Information Assurance. Topics to be covered include understanding security measures, techniques for securing systems, legal issues, basic intrusion detection and recovery methods. The title of this course was previously Information Assurance I.

CSS 205 Computer Security III 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 206, CNT 216 and CSS 200, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is dedicated to the techniques of network penetration testing. Through various hand-out exercises, the student will be introduced to the concepts, techniques, tools, and methodologies for evaluating and auditing network vulnerabilities and properly securing networks from attack. The title of this course was previously Information Assurance II.

CSS 210 Computer Security IV 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 211 and CNT 216, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course is dedicated to the implementation of network security. Students will learn how 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 and principles of network security, packet filtering with ACLs, network address translation (NAT), configuring and deploying multiple firewall topologies, implementing virtual private networks (VPNs), user authentication and intrusion detection. The title of this course was previously Managing Network Security I.

CSS 212 Computer Security V 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CNT 211 and CSS 205, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course teaches students to design and implement secure solutions for wireless networks. The student is first introduced to the fundamentals of wireless technology, including principles of radio transmission. Other topics encompass IEEE standards, implementing wireless topologies, wired equivalent privacy (WEP) and the extensible authentication protocol (EAP) framework. The title of this course was previously Fundamentals of Secure Wireless Local Area 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 Computer Security VI 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CSS 210 and CSS 212, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course prepares the student for the Certified Information Systems Security Professional (CISSP) Certification examination. Topics encompass the ten CISSP domains: Access Control, Application Security, Business Continuity and Disaster Recovery Planning, Cryptography, Information Security and Risk Management, Legal, Regulations, Compliance and Investigations, Operations Security, Physical Security, Security Architecture and Design and Telecommunications and Network Security. The title of this course was previously Network Security Design.

CSS 270 Computer Security VII 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CIS 121, CNT 201, CNT 211, CSS 200 and CST 155, minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This introductory data recovery and analysis course is the first of two courses dedicated to training individuals to conduct corporate computer incident examinations. Students will be introduced to proper procedures for the preservation, identification, extraction, documentation, reporting, acquisition, analysis and interpretation of computer data. Topics covered include evidence handling, chain of custody, collection, preservation, identification and recovery of computer data. Important Note: Students should be able to pass a criminal background check before taking this course. In order to practice Computer Forensics in the State of Michigan, individuals must be licensed as private investigators or qualify for an exemption under statutes pertaining to the licensure of private investigators. The title of this course was previously Computer Forensics I.

CSS 272 Computer Security VIII 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CJT 208, CSS 200, CSS 270 and CST 155, minimum grade “C”

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

Designed for those seeking advancement in the computer security profession, this course surveys legal issues that impact Information Technology professionals, IT Security practitioners and data recovery experts. Substantive and procedural law regarding the right to privacy, the duty to preserve evidence, searches and seizures of electronic evidence, the admissibility of electronic evidence in court, and the prosecution of criminal and civil claims will be covered. This course contains materials previously taught in CSS 240, High-Technology Crime.

CSS 275 Computer Security IX 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CSS 270 minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course continues the theory and skills of advanced data recovery and analysis. It introduces additional software used to perform forensic analysis of file systems such as Linux, FAT 16, FAT 32 and NTFS. Important Note: Students should be able to pass a criminal background check before taking this course. In order to practice Computer Forensics in the State of Michigan, individuals must be licensed as private investigators or qualify for an exemption under statutes pertaining to the licensure of private investigators. This title of this course was previously Computer Forensics II.

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 command line, utilizing the MS-DOS operating system as the instructional tool. Emphasis is placed on the command line for the network administrator/technician. Activities include learning commands, syntax, parameters, redirection, error messages, and file/directory structures. Networking activities include mapping drives, capturing printers and network backups. Preparation of removable boot devices and creation/implementation of batch files are included. 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 2000/XP operating system including operating system functions, structure, major system files, and the basic boot sequence. 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 174 CST 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

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.

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

Students learn basic concepts associated with using PC's in a networked environment, including connecting to a network and connecting networks together. Included are peer-to-peer and client/server networks, network topologies and architectures, the OSI model, Ethernet and TCP/IP protocols, IPv4/IPv6 and MAC addressing, routers and routing, network printing, NAT and VPN's, plus wireless networking. The course also provides a strong foundation in preparation for the CompTIA Network+ Exam. This course contains material previously taught in ELE 216A and ELE 225A.

CST 270 Data Recovery and Analysis **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; CST 118 and CST 155, minimum grade "C"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

In this course, identification, recovery and analysis of data on storage media are covered. Students will be introduced to the tools, techniques and methods of identifying, recovery, analysis, and reconstruction of lost data on a storage media device. The proper procedures for the preservation, handling, recovery and reporting of computer data will be presented.

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 104 Residential Construction I **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3; CON 106 minimum grade "C", may enroll concurrently

30 lecture, 75 lab, 0 clinical, 0 other, 105 total contact hours

This is an introductory course in residential construction and teaches skills and knowledge that prepare students for the advanced certificates in construction-related fields. Topics include material identification, deck and platform building, 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 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

Students will be introduced to safety, sexual harassment and fair housing regulations set forth by the state and federal government. Students will learn customer service and time management as they relate to employment in the repair and maintenance of commercial properties (including: hospitals, hotels, malls, residential rental property, both single and multifamily, resorts, and office buildings). Students will understand the basic components of plumbing in a commercial property and apply proper techniques to correcting malfunctions and/or installation of new products. Students will learn the basic components of doors, locks and closers and apply proper techniques to correcting malfunctions and/or installation of new products. This course was previously TRI 131.

CON 133 Commercial Property Maintenance II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 130 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will be introduced to basic electricity. Students must comprehend and apply proper safety guidelines for the fundamentals of electricity and how those apply to series circuits, parallel circuits and electrical devices. Comprehension and application of advanced plumbing techniques will be addressed including sinks, faucets, drains, water heaters and boilers. Students will understand flooring at each level including, sub-flooring and floor covering. This course was previously TRI 133.

CON 135 Commercial Property Maintenance III 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 133 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will be introduced to HVAC terminology. Students will recognize heating and refrigeration systems and components. Comprehension of major appliance components and installation processes applying proper industry standards. Students will also understand wall covering by applying proper industry, safety and ventilation standards. This course was previously TRI 135.

CON 137 Commercial Property Maintenance IV 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CON 135 minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Students will comprehend advanced HVAC terminology for troubleshooting system and electrical issues. Students will recognize the different types of exterior finishes and understand repairs of those finishes following proper industry and safety standards. Students will examine chemical and cleaning systems for pools. Students will identify pool maintenance issues and understand how to repair said issues. 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.

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 Principles 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 180 Introduction to Green Building 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

In this course, students will be introduced to aspects of green and sustainable building practices. Beginning with an overview of the environment and the history of the green construction movement, students will learn sustainable construction theories and how they differ from standard construction practices. Topics include LEED certification, building systems, materials, site selection, air quality and remodeling.

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 instructed towards a) taking the State of Michigan Builders License Exam, b) writing legal construction contracts for projects and c) 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 and CON 220, minimum grade “C”; CON 220 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 and CON 230, minimum grade “C”; CON 230 may enroll concurrently

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

487 lecture, 410 lab, 0 clinical, 0 other, 897 total contact hours

This course is an approved Police Academy for the State of Michigan. The Michigan Commission on Law Enforcement Standards (MCOLES) Policy and Procedure Manual, WCC Police Academy Daily Rules and Regulations, and the WCC Student Handbook 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. Students will be held to this same code of ethics as sworn law enforcement officers.

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 Culinary Arts Industry 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

In this course, students will be introduced to the segments of the culinary and hospitality industry. Students will trace the history of the culinary industry from the 18th century through the development of travel and tourism ending with contemporary trends. The resources of the American Culinary Federation (ACF) will be explored. This class includes off-campus tours, case studies, trend identification and career opportunity focus. The title of this course was previously Introduction to Hospitality Management.

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 must 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, gateaux, 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: Serve 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 a la carte and 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.

Culinary Arts (CUL)

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 led to the current cuisine and culture.

CUL 140 Bakery Management and Merchandising 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; CUL 110 minimum grade "C" and CUL 114 and CUL 115

30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours

This course introduces students to management and merchandising concepts utilized in bakeries. Emphasis is placed on cost control, sales concepts, customer service, and product presentation. Students will acquire hands-on experience in retail sales.

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, minimum grade "C+"

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 the basic principles one must master to become a skilled culinarian. Students are presented with an opportunity to exercise the principles and solid fundamentals of professional cooking through competitive events. The competitor (student) is further challenged in his or her creativity and individuality with an ever present focus on simplicity and elegance.

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” foods. Students will focus on correct applications and fundamentals of culinary skills, quantity food production, organization, mise en place, cooking methods, improved knife skills, plate presentation and the use of standardized recipes. Emphasis is placed on timing, organization, proportioning 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 and Concepts CCC**CCC 200 Custom Auto Body Technician I 4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course

60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours

This course was created for students who are interested in pursuing a career in the specialty car market of hot rods, customs and concept vehicles. Students will build on skills in prerequisite courses to evaluate 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 modifications and the process used to achieve show car quality sheet metal fit and finish.

CCC 201 Custom Fabrication and Chassis Design I 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course

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 shear and Beverly shear. Subjects covered will include installing air bag suspension, choosing wheel/tire offset combinations, raising and lowering suspension, as well as fabricating various custom parts needed to build a custom car.

CCC 220 Custom Auto Body Technician II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course

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 body work 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. 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 also covered. Instructors will also provide information on advanced paint operations such as “ghosting” of graphics, “smoking” of headlights/taillights and special sanding/buffing procedures as related to the final appearance of a custom car.

CCC 221 Custom Fabrication and Chassis Design II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course; 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 and 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; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course; 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 featured in national media publications such as News Week, Car and Driver, Hot Rod, and television programs that include 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; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course; 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; Completion of Auto Body Repair certificate with minimum grade of “B” or better in each course; 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.

CCC 290 Mobile Electronics 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; ABR 111 and ABR 135, minimum grade “C” or ASV 152 minimum grade “C”

45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours

This course covers the principles of mobile automotive electronics and integration of aftermarket electrical upgrades. The emphasis is centered on the planning and installation of performance audio, HID LED lighting, remote start and navigation systems as well as basic harness design and layout. It provides practical and theoretical experience necessary to fully understand the tools, equipment and organization of many custom electrical projects. Students will be prepared to take the Basic Installation Technician Exam to become a Mobile Electronics Certified Professional.

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

This course introduces and applies basic tap dance exercises and steps. This includes the opportunity to perform a tap dance piece in an end-of-term recital.

DAN 104 Beginning Tap Dance II 1 credit

Level I Prerequisites: No Basic Skills; DAN 103 minimum grade “C”

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies complex tap dance exercises and steps. This course includes the opportunity to perform a tap dance piece in an end-of-term recital.

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 African 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 African dance exercises and steps. This course includes the opportunity to perform an African dance piece in an end-of-term recital.

DAN 111 Hip Hop Dance 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 Hip Hop dance exercises and steps. This course includes the opportunity to perform a Hip Hop dance piece in an end-of-term recital. The title of this course was previously Popular Dance Forms.

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

This course introduces and applies basic ballroom dance exercises and steps.

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 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DAN 101, DAN 105 and DAN 107, minimum grade "C"; each DAN course may enroll concurrently

0 lecture, 0 lab, 0 clinical, 30 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. The technical aspects of production will be introduced and utilized. This course culminates in an end-of-term production.

DAN 210 African Dance II 1 credit

Level I Prerequisites: No Basic Skills; DAN 110 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is designed to further students' dance vocabulary using advanced African dance movements and traditional African rhythms employed in boogie, jazz, hip-hop, modern and Latin dance. This course includes the opportunity to perform an African dance piece in an end-of-term recital.

DAN 222 Ballroom Dance II 1 credit

Level I Prerequisites: No Basic Skills; DAN 122 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

Students will perfect the basics of ballroom dance. They will learn advanced patterns in waltz, foxtrot, cha-cha, lindy-hop, swing, samba and hustle. Other dances may be introduced at teacher's discretion. This course 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 is a continuation of an activity class in which students participate in the exploration of diverse dance-related exercises and techniques. Students will explore a higher level of exercises with increased intensity for the development of physical flexibility, mobility and strength. Students will also explore the relationship of exercise to health.

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

15 lecture, 9 lab, 0 clinical, 0 other, 24 total contact hours

This course addresses types of diseases and their transmission, the application of OSHA and CDC guidelines to dentistry, as well as the management of hazardous waste in the dental office. Students gain practical experience in the operation of sterilization equipment and disinfection techniques, as well as methods for the safe management and manipulation of various substances used in the dental treatment room.

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. Topics include intra-oral and extraoral structures of the skull and face, including bones, muscles, and soft tissue. Tooth surface annotation, cavity classification, occlusion and malocclusion are emphasized.

DEN 108 Dental Radiography 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Dental Assisting program

15 lecture, 33 lab, 0 clinical, 0 other, 48 total contact hours

The course introduces concepts of radiography as they are applied to dentistry. Principles of radiation physics, health and safety factors effecting radiographic images, and quality control measures are examined. Students then use this knowledge to prepare radiographic images. The content of this course, when combined with DEN 128, satisfies the Administrative Rules of the Michigan Board of Dentistry educational requirements.

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 introduction to dental assisting. It provides an overview of the history of dentistry, professional organizations, ethics, and the role of the dental health team. Students are introduced to the treatment room, equipment, and basic procedures. The application of OSHA and CDC guidelines used in four-handed dentistry are emphasized.

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 and equipment in accordance with OSHA and CDC 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 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 102 and DEN 107, minimum grade “C”

15 lecture, 17 lab, 0 clinical, 0 other, 32 total contact hours

This theoretical course provides the student with the necessary knowledge and tools to obtain diagnostic data and the recording of this data. The student gains practical experience in common charting techniques and records management.

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, 22.5 lab, 22.5 clinical, 0 other, 45 total contact hours

This course provides students with both laboratory and clinical experience in producing dental radiographs. Procedures for infection control and maintenance of patient records are emphasized. Students gain experience with mannequins in the laboratory, and apply these skills to patients in the clinic. The content of this course, when combined with DEN 108, meets the Administrative Rules of the Michigan Board of Dentistry educational requirements.

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, 130 clinical, 0 other, 130 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 in the University of Michigan Dental Clinic. Students assist during basic preventive and operative procedures, monitor vital signs, apply OSHA and CDC guidelines, sterilize instruments and manage patient records.

DEN 131 Principles of Dental Specialties 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; DEN 110 minimum grade “C”

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course introduces students to the role of the dental assistant in dental specialties. Latest concepts in each specialty are presented by dental specialists.

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, 130 clinical, 0 other, 130 total contact hours

This course provides Pathway I option B students with clinical application of all previous knowledge as they gain clinical experience in their office of employment. Students have the opportunity during basic preventive and operative procedures, monitor vital signs, apply OSHA and CDC guidelines, sterilize instruments and manage patient records.

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, 195 clinical, 0 other, 195 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 and provide evidence of such a rotation.

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

15 lecture, 105 lab, 15 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.

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 provides an overview of the dental business office. Topics include styles of management, office management software, office accounting, and business office equipment including computers. Interpersonal communication, both written and oral, are emphasized. 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. The student demonstrates clinical, laboratory, and radiographic skills in their offices of employment. Students also observe two specialty dental practices.

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

An introduction to acting skills and techniques through improvisation and the presentation of dramatic scripts. Voice projection, staging, character development and emotional expression are explored in theatre games, monologues and scenes. The course will appeal to anyone interested in developing 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

A continuation of the introduction to acting skills and techniques exploring a diversity of approaches through improvisation and the presentation of dramatic scripts. Voice projection, staging, character development and emotional expression are explored in theatre games, monologues and scenes. The course will appeal to anyone interested in developing acting, presentation and/or communication skills.

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 policies 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.

Electrical Worker Apprentice**EWA****EWA 100 Introduction to Electrical Apprenticeship 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 overview of the electrical apprenticeship program and the responsibilities of an electrician. History, safety, OSHA regulations, and job site conditions are explored. Organizing, motivation and leadership techniques, and labor laws are also covered. Limited to IBEW 252 Apprentices.

EWA 110 Job Information 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 study commonly used tools and materials needed for installing complete electrical systems. Shock hazards are discussed and how to use test instruments to check a circuit to verify if it is energized. How to measure voltages and currents on energized circuits, rigging and lifting of loads, and wire insulation properties are also covered. Limited to IBEW 252 Apprentices.

EWA 120 Blueprint Reading 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

The course teaches students how to identify line types, use of drawing tools, and techniques used in creating blueprints. Students also study drafting scales, electrical symbols, mechanical symbols, and job specifications to prepare them for transferring written information into the physical installation of complete electrical systems. Limited to IBEW 252 Apprentices.

EWA 130 DC Theory 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 study the basic structure of the atom and how current flow occurs in conductor materials. Circuit analysis techniques are applied to series, parallel, and combination circuits. Also covered is an introduction to generation of electricity using the principles of magnetism and electromagnetism. Limited to IBEW 252 Apprentices.

EWA 140 Codeology 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 electrical apprentices to the language and format of the National Electrical Code. An understanding of the NEC is fundamental to making safe and proper electrical system installations and this course teaches valuable skills for finding, studying, and interpreting code rules. Limited to IBEW 252 Apprentices.

EWA 150 Code Practices 5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

A comprehensive article-by-article study of the National Electrical Code is presented in this course. The apprentice will discuss and analyze in detail the rules in each article of the NEC as they apply to the installation of each part of a complete electrical system. A thorough understanding of the NEC is requisite for successfully passing the mandatory State of Michigan licensing exam. Limited to IBEW 252 Apprentices.

EWA 160 AC Theory 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 studies alternating current systems and circuits. The effects of inductance and capacitance in alternating current systems are calculated using vector analysis techniques so that the apprentice can understand, design, and troubleshoot the alternating current systems that he will install and maintain. Resonance and power factor correction as power quality issues are also discussed. Limited to IBEW 252 Apprentices.

EWA 170 Semiconductors 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 are introduced to the basic theory of operation of semiconductor devices. The basics manufacture and construction of P-type and N-type semiconductor materials and the theory of the PN junction are discussed and then expanded upon with the introduction multilayer devices. Limited to IBEW 252 Apprentices.

EWA 180 Grounding 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 an in-depth study of the requirements of Article 250 of the National Electrical Code as it relates to grounding and bonding of systems and equipment. The student will learn the definitions for each part of the grounding installation and will use code tables to determine the correct sizing of the conductors to be installed. Equipment, materials, and techniques for proper installations will also be covered. Limited to IBEW 252 Apprentices.

EWA 190 Transformers and Electrical Safety 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 student will learn about OSHA requirements on construction work sites and the proper selection of the proper personal protective equipment and clothing. Electrical safety culture will be discussed and related to transformers which are the most common source of electrical energy in any building. Arc fault current calculations will be presented as part of NFPA 70E requirements for determining safe approach distances for energized equipment. Limited to IBEW 252 Apprentices.

EWA 200 Motors and Controls 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 learn to identify various motor types by their construction and component parts and will learn the operating characteristics of common types of motors that are currently in use most types of buildings. Reading and understanding nameplate data is presented as a fundamental need for the installation and maintenance of motors. Students will learn to develop control circuits using ladder diagrams to construct complex controls incorporating time delay, interlocking, reversing, plugging, jogging and other fundamental control circuits. Limited to IBEW 252 Apprentices.

EWA 210 Digital Electronics and PLC's 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 knowledge of digital controls utilizing AND, OR, NAND, XOR, and XNOR logic. Students also study applications of these digital circuits in programmable logic controller installations and applications. Relay ladder logic programming language is studied to provide the student the fundamentals for entering a control program into a PLC. Limited to IBEW 252 Apprentices.

EWA 220 Instrumentation 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

Students learn the fundamentals of process control systems. Topics include instrument symbols, test procedures, instrument calibration, installation, and documentation. Students learn measure pressure, temperature, flow, and levels as well as how to calculate expected readings using range and span information. Limited to IBEW 252 Apprentices.

EWA 230 Fire Alarms, Telephone and Security Alarms 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 the fundamentals of fire alarm, telephone, and security alarm systems. Topics include: installation, inspection, testing, and maintenance. Also covered are network cabling, pathways, system performance, and administration. Limited to IBEW 252 Apprentices.

EWA 240 Distributed Power Generation and Power Quality 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 learn basics of UPS systems, solar photovoltaic technology, and fuel cell technology as it would apply to the design, installation, inspection, and maintenance of these systems. Also studied are power quality problems that affect all buildings' distribution systems. Topics include: types of PQ problems, causes of PQ problems, locating the problems, PQ test equipment, and solving PQ problems. Limited to IBEW 252 Apprentices.

EWA 250 Technical Mathematics 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 learn basic principles of applied math using Ohm's Law. Students learn to solve circuitry problems, wire resistance, voltage drops, AC circuit parameters, power factor, and phase angle. Limited to IBEW 252 Apprentices.

EWA 260 Applied 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 prepares apprentices in the electrical trades to accurately apply principles of science to their work. Topics include: the structure of matter, the physical characteristics of copper and aluminum as conductor materials, the atomic structure of conductors versus insulators (dielectrics), temperature-pressure enthalpy diagrams for heating and cooling cycles, and light propagation in fiber optic media. Limited to IBEW 252 Apprentices.

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 106 Renewable Energy Technology

3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3 or MTH 151 minimum grade “C-”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course provides a comprehensive introduction to the principles and practical applications of solar, wind, geothermal, hydroelectric, ocean and biomass renewable energy technologies. Motivations for developing renewable energy will be examined and students will evaluate their personal energy footprint and create a plan to reduce it. Demonstrations, field trips and labs will provide direct contact with the technology. Students will work in teams on a design project to explore one technology in depth.

ELE 111 Electrical Fundamentals

4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Academic Math Level 3 or MTH 151 minimum grade “C”

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 determine required number and sizes of branch circuits, conductors, fuses, raceways and boxes. Other topics include grounding, motor circuits and controls, local codes, and code changes. Recommended for students interested in industrial control technology or in becoming licensed journeypersons or master electricians.

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:** Academic Reading and Writing Levels of 6; consent required**0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours**

This course provides individualized instruction on composition components, including grammar, punctuation, research, and documentation. Enrollment is restricted to Writing Center tutors only. Satisfactory/unsatisfactory grading is used.

ENG 023 High Beginning ESL Reading and Listening **4 credits****Level I Prerequisites:** ESL Writing Level E1; ESL Reading Level E1; ESL Listening Level E1**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. Satisfactory/unsatisfactory grading is used.

ENG 024 High Beginning ESL Grammar and Communication **4 credits****Level I Prerequisites:** ESL Writing Level E1; ESL Reading Level E1; ESL Listening Level E1**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This class is designed 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.

ENG 027 Low Intermediate ESL Reading I **4 credits****Level I Prerequisites:** ESL Writing Level E3; ESL Reading Level E2; ESL Listening Level E3**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:** ENG 027 with grade “S”**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 030 Intermediate ESL Grammar I **4 credits****Level I Prerequisites:** ESL Writing Level E3; ESL Reading Level E2; ESL Listening Level E3**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.

<p>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</p>	<p>ENG 050 Basic Writing I 4 credits Level I Prerequisites: Academic Reading Levels 3, 4 or 5; Academic Writing Level 2 only Corequisites: ENG 000 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>
<p>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.</p>	<p>This class is not intended for students who speak English as their second language. Inexperienced writers will gain confidence writing formal English sentences and paragraphs in and out of class. Students will also utilize the Writing Center and complete required assignments as part of the class. 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.</p>
<p>ENG 033 Intermediate ESL Reading I 4 credits Level I Prerequisites: ESL Writing Level E3; ESL Reading Level E3; ESL Listening Level E3 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>	<p>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</p>
<p>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.</p>	<p>This class is not intended for students who speak English as their second language. This is a continuation of English 050, and inexperienced writers will gain confidence writing formal English sentences and paragraphs in and out of class. Students will complete more advanced individual and Writing Center assignments. Satisfactory/unsatisfactory grading is used. Satisfactory completion of ENG 051 is required to advance to ENG 090 and will raise your Academic Writing level to 3.</p>
<p>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</p>	<p>ENG 060 Advanced ESL Grammar I 4 credits Level I Prerequisites: ENG 037 or ENG 038, may enroll concurrently; ESL Writing Level E4; ESL Reading Level E5; ESL Listening Level E4; Students with ESL Reading Level E3 may enroll in ENG 033 or ENG 034 concurrently; Students with ESL Listening Level E3 may enroll in ENG 035 concurrently 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>
<p>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. Students must satisfactorily complete their work before advancing to a higher level reading course. Satisfactory/unsatisfactory grading is used.</p>	<p>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.</p>
<p>ENG 035 English Pronunciation and Conversation (ESL) 3 credits Level I Prerequisites: ESL Writing Level E4; ESL Reading Level E3; ESL Listening Level E3; Students with ESL Writing Level E3 may enroll in ENG 030 or ENG 032 concurrently; Students with ESL Reading Level E2 may enroll in ENG 027 or ENG 028 concurrently 45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours</p>	<p>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</p>
<p>This course is designed to help students improve their aural and oral communication skills. The three components of the course are: systematic introduction to and practice with the sound system of American English, especially suprasegmentals; extensive listening practice in the library and in class; and introduction to and practice with appropriate conversational skills, such as offering, accepting, and refusing invitations, and asking for and giving opinions.</p>	<p>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.</p>
<p>ENG 037 Intermediate ESL Writing I 4 credits Level I Prerequisites: ESL Writing Level E4; ESL Reading Level E5; ESL Listening Level E3; Students with ESL Writing Level E3 may enroll in ENG 030 or ENG 032 concurrently; Students with ESL Reading Level E3 may enroll in ENG 033 or ENG 034 concurrently 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>	<p>ENG 065 Advanced ESL Speaking and Listening 3 credits Level I Prerequisites: ESL Writing Level E4; ESL Reading Level E5; ESL Listening Level E4 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>
<p>This course 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.</p>	<p>This class is designed to teach international students the listening, note taking and speaking skills needed for success in American college classrooms. Satisfactory/unsatisfactory grading is used.</p>
<p>ENG 038 Intermediate ESL Writing II 4 credits Level I Prerequisites: ENG 037 with grade "S" 60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours</p>	<p>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</p>
<p>This class is a continuation of ENG 037. This class meets along with 037 and focuses on strengthening the students' ability to express themselves in English. Satisfactory/unsatisfactory grading is used.</p>	<p>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 of ENG 090 is required to advance to ENG 091.</p>

- 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. Successful completion of this course with a minimum grade of "C" will raise your Academic Writing level to 6.
- 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 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 documents such as 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 teaches students to write effective academic essays for various audiences. Reading materials serve as a basis for essays and classroom discussions. Students write both in-class and out-of-class essays. 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. Students will apply critical-thinking skills to assess literary works. 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 will apply critical thinking skills to assess 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. Students will apply critical thinking skills to assess literary works.
- 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. Students will apply critical thinking skills to assess 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	ENG 213 World Literature I	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Technical Writing program and ENG 208 minimum grade "C"		Level I Prerequisites: Academic Reading and Writing Levels of 6	
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours		45 lecture, 0 lab, 0 clinical, 0 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.		World Literature I is a course that analyzes world literature through literary masterpieces written from the time of ancient Greece through the Renaissance. Students will apply critical thinking skills to assess literary works.	
ENG 200 Shakespeare	3 credits	ENG 214 Literature of the Non-Western World	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6		Level I Prerequisites: Academic Reading and Writing Levels of 6	
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours		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. Students will apply critical thinking skills to assess literary works.		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 sub-continent of India, and includes a variety of traditional, modern and contemporary works of literature to introduce and explore the world's literary cultures. Students will apply critical thinking skills to assess literary works.	
ENG 208 Technical Writing II	3 credits	ENG 218 Technical Writing IV	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 107 minimum grade "C", may enroll concurrently		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		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.)		In this hands-on course, students learn how to manage online help projects; design, write, and test online help systems using Adobe RoboHelp; and incorporate software demonstrations using Adobe Captivate. Students explore the best delivery option(s) for their target audience, and produce multiple outputs (such as HTML Help, Web Help, Flash Help and Adobe Air Help) from a single source.	
ENG 222 American Literature II - 1900 to the Present	3 credits	ENG 223 British Literature - After 1800	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6		Level I Prerequisites: Academic Reading and Writing Levels of 6	
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours		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. Students will apply critical thinking skills to assess literary works.		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). Students will apply critical thinking skills to assess literary works.	
ENG 209 Technical Writing III	3 credits	ENG 224 World Literature II	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6; ENG 208 minimum grade "C"		Level I Prerequisites: Academic Reading and Writing Levels of 6	
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours		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.		This course is a continuation of ENG 213. It analyzes some of the great literary works of the Western tradition since the Renaissance and demonstrates how these works have contributed to present cultural heritage. Students will apply critical thinking skills to assess literary works.	
ENG 211 American Literature I - Before 1900	3 credits	ENG 226 Composition II	3 credits
Level I Prerequisites: Academic Reading and Writing Levels of 6		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		45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours	
The course provides a survey of the literature of North America (continental U.S.) from the 17th century to 1900. Students will apply critical thinking skills to assess literary works.		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 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). Students will apply critical thinking skills to assess literary works.			

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 is beneficial for library studies or work, teacher’s aide program, nursery and day care work and as general education for parents. Students will apply critical thinking skills to assess literary works.

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. Students will apply critical thinking skills to assess literary works. 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, child care 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 apply critical-thinking skills to assess literary works.

Environmental Science ENV

ENV 101 Environmental Science I 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 introductory science course will cover the physical processes that affect the environment, the impact of people on the environment and the physical resources in our environment. It will also explore the causes, consequences and possible solutions to both local and global environmental issues. Emphasis will be placed on a holistic approach to environmental science, using laboratory exercises, class discussions and projects to reinforce scientific principles.

ENV 201 Environmental Science II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; BIO 101, CEM 111, ENV 101 and GLG 100, minimum grade “C”; CIS 100 or CIS 110 minimum grade “C”, may enroll concurrently; CPS 120 minimum grade “C”, may enroll concurrently

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

This course offers an in-depth, interdisciplinary approach to the understanding of the environment and environmental issues. Students are expected to have taken a college introductory course in each of the following disciplines: biology, chemistry and geology prior to taking this course. Environmental issues will be studied from a scientific, as well as social scientific, perspective. Students will complete a capstone project.

Fluid Power FLP

FLP 101 Fluid Power Fundamentals - I 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 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 and actuators. Component failure modes and troubleshooting concepts are also covered. This course contains material previously taught in FLP 111. FLP 101 is generally offered in the first 7 1/2 week session.

FLP 110 Fluid Power Fundamentals - II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; FLP 101 minimum grade “C”, may enroll concurrently

30 lecture, 15 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 110 is generally offered in the second 7 1/2 week session.

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 role 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

Conversational in approach, this course assumes no prior knowledge of the language. Students will practice the fundamentals of spoken and written French and enhance their appreciation of French Civilization and the culture(s) of the French-speaking countries. Note: This course does not fulfill 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 everyday 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

45 lecture, 30 lab, 0 clinical, 0 other, 75 total contact hours

This course provides a basic understanding of the major branches of earth science, including geology, hydrology and meteorology. It is designed to develop an awareness and appreciation for these geosystems and their important interrelationships, as well as an understanding of the scientific approach to problem-solving. This course will include an overview of both local and global environmental problems as well as a discussion of possible solutions.

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. Traditional classroom lectures will be supplemented with field experiences to explore topics learned in class.

GLG 104 Weather 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 introduces the student to basic concepts involved in the analysis of weather phenomena and atmospheric processes on a global and local scale. Additional units on climate change, including both global warming and ice ages, are included in this course. Each major component is accomplished with corresponding lab investigations and/or exercises.

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

45 lecture, 30 lab, 0 clinical, 0 other, 75 total contact hours

Students examine the physical features and processes that have formed and are forming the landscape of the Earth. Emphasis is placed on learning the local geology of Michigan and the Great Lakes. Topics will include: topographic maps, minerals, rocks, soil erosion and formation, plate tectonics, earthquakes, volcanoes, mountain building, geologic time and dating, running water, lakes, groundwater, oceans and glaciation.

GLG 202 Earth Science for Elementary Teachers 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

45 lecture, 30 lab, 0 clinical, 0 other, 75 total contact hours

This course utilizes laboratory activities, lecture and projects to present the content and methodology necessary for success in teaching earth science in the elementary classroom. Topics include the formation of the solar system, minerals, rocks, geologic time, plate tectonics, earthquakes, volcanoes, mountain building, water, oceans, environmental issues, climate change and weather. Teaching methodology includes developing lesson plans and presenting lessons from those plans.

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 130 minimum grade “C”; or GDT 139 minimum grade “C” and GDT 130 may enroll concurrently

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 minimum grade “C”; GDT 140 minimum grade “C”, may enroll concurrently

60 lecture, 0 lab, 0 clinical, 30 other, 90 total contact hours

This course introduces fundamental graphic design principles and visual communication theories. Students produce dynamic visual compositions addressing matters of cognition, aesthetics, symbols, ideation and ethics with emphasis on creative expression and inventiveness.

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 139, GDT 140 and INP 152, minimum grade “C”

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours

In this course, students will get an 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 and post a multipage Website. 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 215 Typography II**3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; GDT 100

30 lecture, 0 lab, 0 clinical, 30 other, 60 total contact hours

In this course, students will deepen their knowledge of typography beyond the fundamentals. This course will explore advanced typography concepts such as grid systems, refinement of text and display type, hierarchy and using typography to communicate the message effectively. Students with experience equivalent to GDT 100 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 and GDT 139

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 minimum grade “C”

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 InDesign 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, minimum grade “C”

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 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 preparation, portfolio preparation and includes professional review of student 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, 25 lab, 25 clinical, 0 other, 90 total contact hours

This state approved 90 hour (3 weekdays or 5 evenings per week) program prepares students for employment in a variety of health care settings from nursing homes, hospitals or home health care agencies where they will work as a nursing assistant. After the class is successfully completed, the student will be eligible to take the state clinical and knowledge tests for certification. Certification is required for employment as a nursing assistant in long-term care facilities.

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 Clinical and Lab Procedures for Office Assistants **3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; HSC 101 minimum grade “C”, may enroll concurrently

22.5 lecture, 37.5 lab, 0 clinical, 0 other, 60 total contact hours

This course consists of lecture and lab practice related to the role of the office assistant in a health care or medical office setting with emphasis on the clinical and lab procedures that may be performed in entry-level positions. Competencies will be evaluated in the areas of fundamental clinical and general patient care procedures, including how to recognize and respond to common office emergencies. This course is not part of an AAMA certification preparation program. This title of this course was previously Medical Office and Laboratory Procedures.

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 from 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 the nursing program requirements and is also open to the general population.

Heating, Ventilation, and Air

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 device 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 HVAC Sheet Metal Fabrication 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 offers an introduction to layout, design and fabrication of sheet metal with an emphasis on residential HVAC applications. Topics will include safety, sheet metal tools and equipment, fabricating HVAC duct using patterns and drawings, and installation techniques, standards and good practices. 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 101 and HVA 103, minimum grade “C”

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course prepares students to conduct an energy audit on residential, commercial and industrial structures and HVAC systems. Students gain an understanding of the current energy, building, and HVAC standards put out by organizations such as ASHRAE, and the U.S. Green Building Council’s “LEED” program. Students will also be introduced to topics such as commissioning, heat recovery, thermal storage 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 108 minimum grade “C”

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers commercial refrigeration systems. This includes system operation, installation, maintenance and troubleshooting. Topics covered include: types of commercial refrigeration systems, evaporators, compressors, condensers, expansion devices, defrost, controls and cold storage principles.

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 108 minimum grade “C”

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers an overview of hydronics which includes boilers and chilled water systems. Major components are identified: safety and control systems are analyzed and inspected. Flow characteristics are examined for proper calculation of piping and radiator sizes.

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 United 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 of 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 services. It includes discussions of major target populations, the major helping professions, the social context and the history of helping, roles performed by professional helpers, intervention skills, values and ethical 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 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 the student to basic interviewing skills in the helping profession, as well as 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 program 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 describe American families as social systems, how to describe the structure of a family and how to identify common patterns in family functioning. Common problems and special circumstances in family functioning will be addressed. Students will learn to identify effective ways to engage families. Basic social work interventions with families will be described.

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, 0 clinical, 180 other, 195 total contact hours

This course integrates students into the working world by having them complete field work in human service agencies. The student will have the opportunity to progress from observations in directly supervised client contact to indirectly supervised client contact. The field work will be integrated with course work during a one hour seminar. Learning objectives will be 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”

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 120 Introduction to 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 motion pictures from a variety of eras and cultures. Instruction will cover various elements of the creative process involved in film making including the following: narrative, acting, mise-en-scene, editing, cinematography and sound. Students will develop the skills necessary to critically and technically evaluate one of the most dynamic and influential art forms of the past 100 years.

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 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 1891 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. This 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 through 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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course takes students through the process of planning and organizing a Web site, as well as creating Web pages using an industry standard tool (such as Dreamweaver). Students will learn basic HTML, CSS and how to publish Web pages on a Web server. This course is for students with no knowledge of HTML, but who need to understand the basics of Web publishing. It is not intended for those intending to become Web developers.

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 Web page creation using Extensible Hypertext Markup Language (XHTML) and Cascading Styles Sheets (CSS). Pages are authored in a text editor and published on a Web server using an FTP program. Major areas of emphasis include creating valid Web pages, building an appropriate document structure and using modern formatting techniques. Credit by examination is available for students with prior industry 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; GDT 140 minimum grade “C”

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. Students will gain an understanding of Web graphic design and 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

This course focuses on advanced client-side coding for the Web. Various approaches to coding graphical layouts are the primary emphasis and students will be creating valid, standards-compliant pages that render properly cross-browser and cross-platform. Additional topics include accessible markup, media-specific styling, filters and image replacement. XML and related languages are also considered.

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; GDT 139 minimum grade “C”, may enroll concurrently

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 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

This course focuses on intermediate Web interface and design techniques that focus on whole-site design, alternative layout styles and the preparation of images for Web development. Topics include designing for specific clients and audiences, alternate layout strategies and intermediate graphic and interface design strategies. This class challenges students to incorporate different design strategies, technologies and style into Web interfaces. Industry-standard software applications for Web design will be used in a PC-based classroom.

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. 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 explore the user experience of everyday devices.

INP 212 Web Graphics III**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 182 minimum grade "C"**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This course focuses on experimental and non-traditional Web interface design. Students will identify non-traditional, experimental Web design styles and apply them to Web deliverables. Students will also learn emerging professional layout styles and develop interfaces based on audience, design research and emerging technology. Software applications for Web design and development will be used in a PC-based classroom.

INP 233 Web Analytics and SEO**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 150 and INP 153, minimum grade "C"**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

In this course, students will learn about the technologies and techniques used to increase Web site traffic, as well as how to track user activity and evaluate the impact of Web site changes via analytics. Search engine optimization and the role of social and interactive media in driving user behavior are given significant focus.

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 learn user experience best practices for a wide variety of Web environments and topics, including mobile devices, internationalization, AJAX and content management systems. Students will prototype user interfaces based on these best practices and document specifications in use cases.

INP 261 Introduction to Web Programming**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 a foundation in programming for the Web. Server-side programming will be in Python and client-side programming will be in JavaScript. Successful completion of this course allows students to progress to the higher-level INP programming courses.

INP 271 Client-Side Web Programming**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 261 minimum grade "C"**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This is an advanced course in JavaScript for Web development. Accessible, unobtrusive and standards-compliant coding techniques are stressed. AJAX and various APIs will be given significant consideration. Students must have the JavaScript foundation from INP 261 or previous JavaScript programming experience to be successful in this course (usage of frameworks/libraries alone is insufficient). Students with experience equivalent to INP 271 may contact the instructor for permission to waive the prerequisite. The title of this course was previously Web Coding III.

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 261 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. No prior database experience is required. Students with computer experience equivalent to INP 261 may contact the instructor for permission to waive the prerequisite. This course was previously INP 283.

INP 276 Rich Internet Application Programming**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 261 minimum grade "C"**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This course focuses on the development of Rich Internet Applications, with Actionscript as the core development language. Additional frameworks and languages for Rich Internet Application development will also be given consideration. Students with computer experience equivalent to INP 261 may contact the instructor for permission to waive the prerequisite. This title of this course was previously Web Animation II.

INP 281 Server-Side Web Programming**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 261 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. This course focuses on PHP and Ruby for Web development. Server-side concepts are stressed, including authentication, sessions, data storage and retrieval and template-based Web development. Students with experience equivalent to INP 281 may contact the instructor for permission to waive the prerequisite. The title of this course was previously Web Coding IV.

INP 284 Web Graphics IV**4 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; INP 212 minimum grade "C"**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This course is an introduction to the methods and philosophies of information design as they apply to interface design. By using the principles and practices of information design, such as sequencing, memory strings, wayshowing and wayfinding, students will create Web information that is both accessible and usable. This course is designed to step students through a typical information design project from pre-testing to prototype development and post-testing.

INP 291 Emerging Web Technologies 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; INP 261 minimum grade “C”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This course focuses on the technologies and standards that will shape the future of the Web. HTML5 and CSS3 are examples of the emerging standards that will be considered, along with additional languages and technologies on the cutting edge of Web development. Students with computer experience equivalent to INP 261 may contact the instructor for permission to waive the prerequisite.

Iron Workers of America

IWA

IWA 120 Introduction to Ironwork 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 ironworking for new apprentices. Course topics include job safety and health, blueprints and mathematics for ironworkers. Students will be introduced to oxy-acetylene cutting and safety in the classroom before completing hands-on assignments. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 122 Ironworker - General Rigging 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 scaffold erecting, scaffold dismantling, and basic rigging along with cranes and other rigging power equipment. Topics include safety, signals, calculations, fiber and wire ropes, hardware, slings and reeving. Students will use differing tools and devices for rigging including cranes, fork trucks, tuggers, gantries and truck loading. Load security and student safety is emphasized. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 131 Introduction to Metal Building 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 overview to metal building erection and finishing for new apprentices. Topics include primary and secondary framing and wall sheeting. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 141 Introduction to Reinforcing Ironwork 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 overview of reinforcing ironwork for new apprentices. Topics include material property and related CRSI and ACI codes and specifications. Students will develop additional blueprint reading skills specific to reinforcing steel. Various types of structures will be reviewed and students will be introduced to splicing and coupling. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 151 Rigging/Machinery Mover 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 focuses on advanced rigging skills including machinery moving, disconnecting power and hydraulic lines and the basics of reinforced steel. Students will practice loading, hauling, unloading, setting, aligning, laser leveling and grouting. Emphasis will be placed on reading and interpreting blueprints for proper positioning and application to different types of reinforced steel structures. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 155 Rigging/Machinery Mover 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 introduces conveyor systems, their uses, and maintenance requirements. Terminology, systems components, basic installation, devices and mechanisms will be covered. Rigging as it applies to different types of structural details will be emphasized. This course prepares students to take the Crosby Master Rigging and CDL Certification tests. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 161 Introduction to Architectural and Ornamental Ironwork 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 architectural wall systems. Students will learn about curtain wall systems, window wall systems, sloped walls, cable walls, skylights and testing. Students will gain experience erecting storefronts, entranceways and glass rails. Students will be introduced to sealants and glazing systems. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 172 Introduction to Structural Features 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 structural features of a building. Students will also be introduced to instruments, tools and fasteners with a focus on leveling and anchors. Topics include erecting columns, band beams, joists and trusses, plumbing and aligning, decking and various types of bolts. Classroom training will be supplemented with hands-on experience. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 191 Reinforced Iron and Structures for Rigging 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 an overview of reinforcing ironwork for new apprentices. Reinforcing iron topics include material property and related CRSI and ACI codes and specifications. Structural topics include erecting columns and beams, joists and trusses, plumbing and aligning, decking and various types of bolts. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 201 Introduction to Welding 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 continues the theory and practice of welding. Students learn Oxy-Acetylene cutting and welding in addition to shielded arc welding. Students receive instruction in welding symbols, details, procedures, codes, qualifications, inspections and FEMA requirements. Related safety is covered. Students are encouraged to take and pass the SMAW certification test. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 224 Labor and Trade History 1 credit

Level I Prerequisites: Academic Reading and Writing Levels of 6

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

The history and future of labor and trade unions with particular emphasis on Ironworkers will be discussed. Students will be introduced to skills and practices needed to be a foreman for ironworkers. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 235 Advanced Metal Building 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 hands-on experience in metal building erection and finishing. Students will install insulation, siding, metal roofing, flashing and trim. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 241 Advanced Reinforcing Ironwork 7 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
105 lecture, 0 lab, 0 clinical, 0 other, 105 total contact hours

This course continues training for reinforcing ironwork with emphasis on ACI codes 318 and 117 and the CRSI Manual of Standard Practices. Students will focus on unbonded mono-strand and bonded post tensioning installations, stressing, blueprints and troubleshooting. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 265 Advanced Architectural and Ornamental Ironwork 6 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
90 lecture, 0 lab, 0 clinical, 0 other, 90 total contact hours

This course continues training for architectural and ornamental ironworkers. Students will install several different mock-up systems focusing on correct installation of metal and composite wall panel systems, associated trim and openings. The selection of wall systems based on structural and metal building types will be discussed. This course is only available for Ironworker apprentices through the Local 25 training center.

IWA 272 Advanced Structural Features 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 topics such as bridges, towers, wind turbines, stair stringers and other unique layouts. This course is only available for Ironworker apprentices through the Local 25 training center.

Journalism JRN

JRN 111 Introduction to 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 delivered in various forms, identifying fundamental elements of style, tone, 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. This course was previously ENG 101.

JRN 216 News Writing and Reporting 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; JRN 111
minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students write news articles suitable for publication in print or electronic media. 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. This course was previously ENG 216.

JRN 217 Feature Writing 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; JRN 111
minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students write articles suitable for publication as features for print, Web or other media. 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 a part of each writing assignment. This course was previously ENG 217.

JRN 218 Sports Writing and Reporting 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; JRN 111
minimum grade "C", may enroll concurrently

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students write basic game, advance and feature stories for sports journalism. Column writing is explored as well, along with the fundamentals of covering a sports beat for print- and Web-based reporting. Students will also study the techniques of successful sportswriters and learn how to develop and interact with sources.

JRN 220 Journalism for the Web 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; JRN 111
minimum grade "C"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students explore ways to report news and information digitally. Students use social media, digital images, and digital video along with text to report stories they gather and post on Web-based blogging platforms--while continuing to observe the ethical and legal conventions of quality journalism.

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 teaches 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. Students 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 034 Foundations of Numeracy** **4 credits****Level I Prerequisites:** Academic Reading Level 4; no minimum writing level; Academic Math Level 0, no higher than level 1**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

MTH 034 is the first course in the developmental math sequence. Students will develop their number sense and master the four basic operations. Topics of this course include addition, subtraction, multiplication, and division of; whole numbers, integers, decimals, fractions. Other topics include prime numbers, factorization, basic measurement, and inequalities. Students will also learn success strategies. Students who complete this course with a C or better are eligible to enroll in MTH 067.

MTH 067 Foundations of Mathematics **4 credits****Level I Prerequisites:** Academic Reading Level 4; no minimum writing level; Academic Math Level 1, no higher than level 2**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This is the first of two courses in the developmental math sequence. The focus of this course is to develop students’ problem-solving and basic algebra skills. Topics for this course include applications involving integers, decimals and fractions, as well as applications of percents, proportions and consumer credit, algebraic expressions, algebraic properties, algebraic operations and multi-step equation-solving. The Cartesian Coordinate system and applications of algebra are also introduced. Successful completion of this course with a minimum grade of “C” will raise your Academic Math level to 2.

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. Topics include linear and quadratic functions, polynomials and systems of linear equations. Students who complete this course are prepared for college-level mathematics. Successful completion of this course with a minimum grade of “C” will raise your Academic Math level to 3.

MTH 125 Everyday College Math **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 is intended to further students’ mathematical knowledge of concepts and applications they might encounter in everyday adult life. Students will read and understand college-level readings of mathematical topics. Topics will include three main subject areas: advanced consumer math and formulas (mortgage interest, compound interest, loans and credit cards), Logic and Sets (sets and operations, Venn Diagrams, basic logic) and statistics (probability, measures of center and spread, the normal curve).

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 Geometry and Trigonometry 3 credits**Level I Prerequisites:** Academic Reading and Writing Levels of 6; Academic Math Level 3 or MTH 151 minimum grade "C"**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 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. The following functions will be studied: quadratic, rational, radical, logarithmic and exponential. A graphing calculator is required for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 4.

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. Topics include graphs of functions including transformations, function composition, variation, polynomial functions of degree two and higher, polynomial and synthetic division, roots of polynomials, complex numbers, rational functions and equations, non-linear equations and inequalities, inverse functions, exponential functions equations and models, logarithmic functions equations and models and applications. A graphing calculator is required for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 5. 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 4**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This course provides a rigorous background in trigonometry. 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.

MTH 180 Precalculus 5 credits**Level I Prerequisites:** Academic Reading and Writing Levels of 6; Academic Math Level 5**75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours**

This course provides the necessary background in analytic geometry, trigonometry and advanced algebraic topics for calculus. Topics include trigonometric functions, identities and graphs, the conic sections, sequences and series and the binomial theorem. A graphing calculator is recommended for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 7.

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'Hopital'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.

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 293 minimum grade "C"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This is a one-semester course on solving elementary differential equations. Topics include: solving 1st order basic differential equations, solving higher order linear differential equations with constant coefficients, Laplace Transforms, solving systems of linear equations using the eigenvalue method. Successful completion of MTH 197 (Linear Algebra) is strongly recommended. 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

45 lecture, 60 lab, 0 clinical, 0 other, 105 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"

45 lecture, 60 lab, 0 clinical, 0 other, 105 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 minimum grade "C"

45 lecture, 60 lab, 0 clinical, 0 other, 105 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, MTT 102 and WAF 105, minimum grade "C"

45 lecture, 60 lab, 0 clinical, 0 other, 105 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"

45 lecture, 60 lab, 0 clinical, 0 other, 105 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"

45 lecture, 60 lab, 0 clinical, 0 other, 105 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, data acquisition, and tuning tool. The course will instruct the student in the design and application of various tuning technologies used in current custom fuel and ignition mapping. The student will develop the skills to become proficient in tuning carbureted vehicles.

MST 225 Advanced Dynamometer Tuning Systems **4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; MST 220 minimum grade "C"

45 lecture, 60 lab, 0 clinical, 0 other, 105 total contact hours

Students will be taught the skills to operate a load control dynamometer as an advanced tuning tool. The primary emphasis is on the student learning to use the dynamometer to troubleshoot and tune fuel injection systems on motorcycles and ATV's. They will learn the application of various technologies used by both the OEM's and aftermarket companies.

MST 230 Advanced Motorcycle Fabrication 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This course begins the integration of the knowledge and skills acquired in the Motorcycle Service Technology programs and from coursework in Welding and Fabrication and Machine Tool Technology. Students will practice design skills including pattern development, mechanical drawing and fastener selection in the creation of a custom motorcycle frame, swing arm or billet accessory. Designs will be fabricated using welding, milling machine and lathe operation skills on various types of building materials including body sheet metal.

MST 235 Advanced Motorcycle Fabrication II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; consent required

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours

This is the second course in advanced motorcycle fabrication. This course expands on the knowledge acquired in Motorcycle Service Technology, Welding and Fabrication and in Machine tool Technology. Areas of study will include all aspects of the complete design and fabrication of a custom motorcycle.

Music

MUS

MUS 103 WCC Jazz Orchestra 2 credits

Level I Prerequisites: No Basic Skills

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

WCC Jazz Orchestra is a performance-oriented course for woodwinds, brass, percussion and string instruments, as well as electronic keyboards and vocalists. There is an emphasis on musical phrasing, blending, style 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, the course can be repeated a maximum of four times for credit.

MUS 104 Top 40 Combo 2 credits

Level I Prerequisites: No Basic Skills

30 lecture, 0 lab, 0 clinical, 0 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

30 lecture, 0 lab, 0 clinical, 0 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 jazz music. This is a performance group which offers concerts at WCC and in the community-at-large.

MUS 112 Washtenaw Community Concert Band 2 credits

Level I Prerequisites: No Basic Skills; consent required

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

The Washtenaw Community Concert Band is a performance-oriented course with an emphasis on learning and performing conventional concert band music. It will focus on melodic, harmonic and rhythmic skills necessary for high-quality performance in a concert band setting. The class will be combined with players from the community for rehearsals and will perform in the community and on campus. This course may be repeated for credit up to a maximum of three times.

MUS 133 Beginning Guitar 2 credits

Level I Prerequisites: No Basic Skills

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a beginning guitar class focusing on playing chord changes, fingerstyle techniques and beginning and intermediate chord progressions found in popular and folk music. This course was previously MUS 233.

MUS 134 Intermediate Guitar 2 credits

Level I Prerequisites: No Basic Skills; MUS 133 minimum grade "C"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This class covers advanced chord formations (Major 7th, Minor 7th, and Dominant 7th chords) and how to apply them in a song. It also covers Major and Minor Scales in every key and how to use them in songs by playing the melody. Advanced stages of the class will cover improvisation. Musical expression will also become an important factor. The students will be introduced to the term "the art of self expression." Students with experience equivalent to MUS 133 may contact the instructor for permission to waive the MUS prerequisite. This course was previously MUS 236.

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 course for the serious music student and professional musician covering basic agreements, contracts, royalties, copyrights and other legal aspects in the music industry. Students who intend to perform for an audience, publish or record need this important information.

MUS 154 Functional Piano I 2 credits

Level I Prerequisites: No Basic Skills
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This class is designed for those who wish to learn the fundamentals of playing the piano, including the ability to read and execute keyboard music harmonically and melodically. The course covers basic musicianship, piano technique fundamentals, 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. This course was previously MUS 210.

MUS 155 Functional Piano II 2 credits

Level I Prerequisites: No Basic Skills; MUS 154 minimum grade "C"
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course is a continuation of functional piano, providing studies beyond the beginning stage. It focuses more on individual development in terms of technique, expression, and performance, as well as providing further keyboard skills, historical and theoretical background. This course was previously MUS 211.

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 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: Our Musical 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 is an active participation course that will use music as a means for learning about the world around us. The course emphasizes the potential creative, critical-thinking and socio-cultural factors as they may best enhance the students' lives and careers. Many of the world's musical styles and geographic regions are considered.

MUS 185 Western Music History Survey 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 music history course covering the major stylistic periods in the development of music in Western civilization. Students will develop skills to listen to music critically and place it in historical context, and will study the fundamental elements of music necessary for focused listening. Students will be introduced to representative composers, works and styles from a variety of periods from early music through the present.

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 237 Finger-Style Blues and Slide Guitar 2 credits**Level I Prerequisites: No Basic Skills; MUS 133 and MUS 134, minimum grade "C"****30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours**

This course draws from the history of the musicians from the Delta regions of Mississippi in the 1930's to the present. 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; MUS 134 minimum grade "B"****45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This class will focus on the styling of jazz guitar greats like 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 the dynamics and sensitivity. The class will give insight into improvisational playing of chords and walking bass lines simultaneously.

MUS 240 Jazz Guitar II 3 credits**Level I Prerequisites: No Basic Skills; MUS 239 minimum grade "B"****45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This class will further explore 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 playing chords and walking bass lines simultaneously.

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****45 lecture, 0 lab, 0 clinical, 0 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 154 or MUS 155, 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 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**

In this course, students will learn how to market themselves or others in the music industry. Students will focus on developing interpersonal skills; preparing a portfolio; booking performances; preparing, analyzing and negotiating contracts; and determining the monetary value of the work of a musician. Students will explore how to manage their business while creating a multi-faceted career.

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. 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. This is the first of two possible co-op courses.

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.

NCT 274 NCT Co-op II

1-3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NCT 174; 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. This is the second of two possible co-op courses.

Nursing

NUR

NUR 039 NCLEX-RN Preparation

2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 231 and NUR 283, minimum grade "C-"

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course assists nursing program graduates in preparing for the NCLEX-RN (National Council Licensure Examination for RNs). Emphasis is placed on reviewing learned materials and on taking national comprehensive examinations. Departmental approval is needed if not a graduate of WCC's APNURS program. Grading uses the satisfactory/unsatisfactory system.

NUR 102 Fundamentals of Nursing

2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Registered Nursing or Nursing Transfer program

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours

This course provides an introduction to nursing and the WCC nursing program. Foundational principles are explored for providing a safe and effective care environment, promoting health, maintaining psychosocial integrity and promoting physiological integrity. The nursing process and core components will be introduced as organizing frameworks for the nursing program. This course creates a foundation of evidenced-based nursing knowledge for subsequent nursing courses and builds on knowledge gained in prerequisite courses. This course contains material previously taught in NUR 100.

NUR 106 Fundamentals of Nursing - Lab and Clinical Practice

4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 102 minimum grade "C-", may enroll concurrently

0 lecture, 120 lab, 60 clinical, 0 other, 180 total contact hours

In this course, students learn basic nursing procedures and rationales through lab discussion, lab practice, and clinical practice. Using the nursing process and core components as organizing frameworks, nursing skills are developed that provide a safe and effective care environment, promote health, maintain and promote psychosocial and physiological integrity. The student must successfully complete the lab discussion and lab skills check-outs before progressing into the clinical component, which takes place in an extended care setting. Pre-clinical assessment time is required prior to and outside of the scheduled clinical hours. This course contains material previously taught in NUR 100 and NUR 103 and builds on knowledge gained in prerequisite courses.

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 WCC Nursing Programs, but may also be taken for transfer into second career BSN programs with consent of the instructor after submission of required documentation.

NUR 122 Nursing as a Societal and Interpersonal Profession**4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 102 (minimum grade "B" for APNURT or minimum grade "C" for APNURS students); NUR 106 with grade "P"; both courses may enroll concurrently

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 Medical-Surgical Nursing I**3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 102 and NUR 115, minimum grade "C-"; NUR 106 with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students use the nursing process in the care of adults and their families during health and illness. Evidenced-based principles of nursing care for adults experiencing and adapting to health deviations in the following core areas are covered: acid-base imbalances, cardiovascular, respiratory, renal, endocrine, cancer, and hematology. This course builds on knowledge gained in prerequisite courses and is the first of three medical-surgical nursing courses. The title of this course was previously Acute Care Nursing I.

NUR 124 Medical-Surgical 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 prerequisite courses. The lab component covers advanced nursing skills associated with the care of acutely ill adults. In the clinical component, the student begins to develop competency with time management and prioritization of patient care, while gaining an increased proficiency 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. The title of this course was previously Acute Care Nursing I - Clinical Practice.

NUR 130 Health Promotion and Risk Reduction**4 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Nursing Transfer programs (UM-SoN and EMU-SON) and NUR 122 minimum grade "B"

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

In this course, students gain an understanding of the concepts of health, healthy 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 behaviors are 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 behavior is examined. Using substantive content, exemplar behaviors of nutrition, physical activity and coping and adaptive behaviors will be 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 in the context of the theoretical and empirical literature and standards for the nursing profession. Students will examine potential strategies for influencing health behavior change.

NUR 131 Nursing of the Childbearing Family**3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 102 and NUR 115, minimum grade "C-"; NUR 106 with grade "P"

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course, students use 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 concerning deviations from the normal maternity and newborn experience will be addressed. Perioperative nursing topics as applied to the childbearing family will also be included. 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 settings. The focus of this course is to develop the students' ability to apply knowledge gained in prerequisite courses and Nursing of the Childbearing Family to the planning, implementation, and evaluation of care for the antepartum, intrapartum, postpartum woman, her newborn, and family. Care of the perioperative patient is also included.

NUR 222 Health Assessment Throughout the Lifespan 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; NUR 102 (minimum grade "B" for APNURT or minimum grade "C" for APNURS students); NUR 106 with grade "P"; both courses may enroll concurrently

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, focused on the adult client, provides students the opportunity for skill acquisition in history taking, assessment skills and documentation of findings. Individuals holding an RN or LPN may request an override of the course prerequisites.

NUR 223 Medical-Surgical 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 three-part medical-surgical nursing sequence that uses the nursing process to understand the care of adults and their families during health and illness. Evidence-based 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 fundamental and core knowledge gained in prerequisite courses. The title of this course was previously Acute Care Nursing II.

NUR 224 Medical Surgical 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 prerequisite courses, with emphasis on progressive development of technical skills, time management and prioritization of patient care. Using the nursing process, while applying evidence-based principles, 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. The title of this course was previously Acute Care Nursing II - Clinical Practice.

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

In this course, students use the nursing process to focus on the care of children and their families during health and illness. Concepts learned in the prerequisite courses 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, 3 lab, 87 clinical, 0 other, 90 total contact hours

In this course, students build on knowledge gained in prerequisite courses and use 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

In this course, students build on knowledge gained in prerequisite courses and use 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. 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, 12 lab, 78 clinical, 0 other, 90 total contact hours

In this course, students build on knowledge gained in prerequisite courses and use 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 257 Introduction to the Research Approach in Nursing 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to APNURT program

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

Building on earlier content in critical thinking and the scientific process, this course will expand students' knowledge by providing an introduction to the research methodology essential to providing evidence-based nursing care. Students will acquire the basic competencies necessary to identify, critically evaluate, and synthesize research findings, and will explore ways to incorporate research findings into professional nursing practice. Students will be expected to continue to refine their competencies in later courses as they utilize research findings in specific clinical applications. Therefore, consistent with professional standards, students will become consumers of research who critically evaluate and base their nursing care on scientific evidence.

NUR 283 Medical-Surgical Nursing III 3 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”

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this third medical-surgical nursing course, the nursing process is used to understand the care of patients with moderately complex, multi-system needs and builds upon the principles of medical-surgical nursing. Additionally, this course will focus on prioritization and management of care, and evidence-based practice (EBP) across the health continuum. This course builds on knowledge gained in prerequisite courses. This course contains material previously taught in NUR 271 and NUR 281.

NUR 284 Medical-Surgical Nursing III - Clinical Practice 3 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”

0 lecture, 23 lab, 112 clinical, 0 other, 135 total contact hours

This capstone medical-surgical clinical experience builds on knowledge gained in prerequisite courses. It is intended to transition students into the role of a professional nurse, which includes the role of delegator and team leader. Using the nursing process, while integrating evidence-based principles, students manage care for three (3) patients with moderately complex medical-surgical needs in the lab/workshop and acute care settings. Experience is provided for each student to function collaboratively with members of the health care team. This course contains material previously taught in NUR 272 and NUR 282.

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 106 Introduction to Pharmacy Technology**1 credit****Level I Prerequisites:** Academic Reading and Writing Levels of 6**15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours**

The course examines the role of the pharmacy technician in various pharmacy settings. It provides an overview of the educational requirements, the state law regarding delivery of pharmacy technician services, the role of the pharmacy technician as a member of the health care team, and the career opportunities for pharmacy technicians.

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**15 lecture, 15 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**15 lecture, 30 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**

This 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 well 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 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 survey of the history of photography as a technology and art form. Areas of investigation include historic and contemporary photographic processes, artistic trends and the social uses of the medium since its inception.

- 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 110 Introduction to the Darkroom** **1 credit**
Level I Prerequisites: Academic Reading and Writing Levels of 6; PHO 111 minimum grade "C-", may enroll concurrently
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
 This course provides a hands-on introduction to darkroom-based photography. Students will shoot, process and print B & W film, develop an awareness of pre-digital working methods, and learn about areas of photography where darkroom work is still in practice. Cameras and all necessary supplies will be provided.
- 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, image processing, printing and final presentation techniques. Students must have their own manually adjustable digital camera and anticipate additional costs for materials for the course.
- 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; PHO 111 and PHO 127, minimum grade "C-"

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours

This course covers the fundamental principles of communicating newsworthy events, contemporary social issues and human interest stories through still photography. Students become acquainted with specialized shooting skills, industry standards and ethics associated with photojournalism.

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.****0 lecture, 0 lab, 0 clinical, 15 other, 15 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. This course may 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 physical therapist assistant students to the fundamental skills of patient care and management under the direction and supervision of a licensed physical therapist. Students will learn to safely and appropriately apply these skills in various patient conditions. The development of clinical decision-making skills and time management during patient care activities are emphasized. Content includes, but is not limited to, infection control procedures, vital signs, bed mobility skills, proper body mechanics, range of motion activities, wheelchair management, transfer techniques and basic gait training skills.

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 220 minimum grade "C"****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 the safe and appropriate use of soft tissue techniques. These include, but are not limited to, basic soft tissue massage and compression to be performed under the direction and supervision of a licensed physical therapist. Lecture, demonstration, lab practice and patient simulations will be used to develop problem-solving and technical skills needed for clinical application.

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 minimum grade “C”

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 minimum grade “C”

Corequisites: PTA 198 and PTA 240

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours

This course continues the study and application of theory, principles and procedures necessary for patient treatment using goal-directed exercise as a treatment modality, under the direction and supervision of a licensed physical therapist. General exercise as well as exercise for specific populations and diagnoses will be included. Students will practice instruction, progression and justification of exercise programs as well as monitoring and documentation of patient response and/or simulated patient interaction. Laboratory activities will correlate with lectures and will 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”, may enroll concurrently

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, 120 clinical, 0 other, 120 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 with grade “P”

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours

This course reviews and builds upon classroom and clinical education experiences to examine ethical considerations in patient care relationships, communication between Physical Therapists and Physical Therapist Assistants, preparation for employment, professional growth after graduation, departmental organization and critical review of published research.

Physics

PHY

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 previous physics experience, but desiring a working knowledge of physics, Physics 105 surveys the major topics of Newtonian mechanics, heat, vibration and waves, electromagnetism and light 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: mechanics (kinematics, forces and torque, work-energy, machines), static fluids and properties of matter 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; Academic Math Level 7; or Academic Math Level 5 (MTH 176) and MTH 178, 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**

Physics 122 is the second part of a two-course sequence in algebra-trigonometry based physics for pre-professional and liberal arts students. Physics 122 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 above topics.

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**

This is the first of a two-course sequence in calculus-based Newtonian physics for students intending to major in science or engineering. Physics 211 develops the concepts of mechanics (kinematics, forces, work-energy, impulse-momentum, translational and angular, fluids), vibration (and waves) and fundamental thermodynamics. Laboratory exercises are included to assist students in understanding the above topics and to develop skills in data analysis methods.

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**

Non-federal (state and local) governments will be examined in this course. Special emphasis on the governments of Michigan and Washtenaw County provides for an investigation of the challenges of decision-making and governance in addressing the immediate needs of its citizens.

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.

PLS 260 Introduction to Political Thought **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 presents an overview of political thought, or theory, from the early Greeks through the 19th century works of Marx, Mills and Thoreau. The focus will be on the evolution of political thought as well as the different objectives and values that have driven the quest for the "ideal" form of government.

Psychology**PSY****PSY 100 Introduction to 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 of psychology - the study of mental processes and behavior. This is a survey course including such topics as psychological development, learning, thinking, motivation, emotion, perception, intelligence, aptitudes and personality. Basic principles and their practical applications 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 117 Psychology of Parenting **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 focus of this course is to facilitate successful parenting. Using examples from prenatal through adolescence, the student will identify the characteristics of constructive and destructive parenting. Students will discuss psychological theory as the explanation for improved parent-child interaction and communication.

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 provides an overview of the psychology of human behavior from conception to adolescence. It includes the study of psychological processes involved in physical, cognitive and social personality development. Major theories of human development 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 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 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
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course covers developmental topics including cognitive, psychological and social development from birth through adolescence. Primary focus is on the role of parents and teachers in fostering learning and development. The topics of readiness to learn, windows of opportunity, brain-based teaching and learning techniques, learning theory, classroom management and planning and assessment of learning outcomes are addressed.

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.

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 diagnostic medical imaging modalities with emphasis on the role of the radiologic technologist in the healthcare delivery system. Topics include historical development of radiological sciences, professionalism, career development, organization of healthcare systems, introduction to radiographic equipment, procedures, radiation protection and medicolegal issues.

RAD 101 Methods in Patient Care 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program

15 lecture, 15 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.

<p>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.</p>	<p>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 is designed to teach the student how to obtain quality images of the gastrointestinal system, accessory organs, urinary system and other special procedures associated with radiography. Students will also learn practical applications of contrast media and the appropriate use of fluoroscopic equipment and imaging accessories.</p>
<p>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 presents the theories and practices that are utilized in the clinical setting to produce diagnostic radiographs of the chest, abdomen and upper extremity. Radiographic terminology, patient preparation, patient positioning, proper manipulation of radiographic equipment, radiation safety practices, image evaluation, professional standards and medical ethics will be discussed and practiced in the laboratory setting.</p>	<p>RAD 150 Clinical Education 3 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, 376 clinical, 0 other, 376 total contact hours This course provides structured clinical experience in the application of knowledge and skill in positioning the chest and thorax, abdomen, spinal column, upper and lower extremities and related anatomy while working in general, portable and fluoroscopic radiography. The course also provides students with an opportunity to learn and demonstrate professional ethics, courtesy and empathy in handling patients, radiation safety, film processing/imaging plate (IP) handling and image archiving and radiographic equipment manipulation.</p>
<p>RAD 120 Clinical Education 2 credits Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 110 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 spinal column, lower extremities and related anatomy. This course continues the discussion of professional ethics, courtesy and empathy in handling patients, radiation safety, film processing/imaging plate (IP) handling and image archiving and radiographic equipment.</p>	<p>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. This course was previously RAD 200.</p>
<p>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 presents the theories and practices that are utilized in the clinical setting to produce diagnostic radiographs of the lower extremity, vertebral column and bony thorax. Radiograph terminology, patient preparation, patient positioning, proper manipulation of radiographic equipment, radiation safety practices, image evaluation, professional standards and medical ethics will be discussed and practiced in the laboratory setting.</p>	<p>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.</p>
<p>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 is a continuation of material presented in RAD 111. The content of this course includes a comprehensive study of atomic theory, radiographic exposure technique, image production using analog and digital mediums, and the appropriate use of radiographic accessory devices. Students will learn theoretical principles for achieving optimal image quality and techniques for reducing patient radiation exposure. Laboratory sessions are included to provide a means of integrating theory with practical applications for use in the clinical setting. This course contains material previously taught in RAD 127.</p>	<p>RAD 217 Clinical Education 3 credits Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 150 minimum grade "C-" 0 lecture, 0 lab, 336 clinical, 0 other, 336 total contact hours This course provides structured clinical experience in the application of knowledge and skill in positioning the skull and related anatomy. This course continues the discussion of professional ethics, courtesy and empathy in handling patients, radiation safety, film processing/imaging plate (IP) handling and image archiving and radiographic equipment.</p>
	<p>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.</p>

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 will present an introduction to sectional anatomy. Students will learn the basic protocols for obtaining and analyzing sectional images. The sectional anatomy of the head, neck, chest, abdomen, pelvis, spine and joints will be studied.

RAD 225 Clinical Education 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; Admission to Radiography program; RAD 217 minimum grade “C”

0 lecture, 0 lab, 336 clinical, 0 other, 336 total contact hours

This course provides continued structured clinical experience in the application of knowledge and skills for positioning the upper and lower extremities, chest, abdomen, spinal column and skull during contrast studies, surgical procedures and portable radiography. Students will demonstrate their mastery 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. This course was previously RAD 135.

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, 224 clinical, 0 other, 224 total contact hours

This course provides structured clinical experience in the application of knowledge and skill in positioning the chest and thorax, abdomen, spinal column, skull, upper and lower extremities and related anatomy while working in general, portable and fluoroscopic radiography. The course also provides students with an opportunity to learn and demonstrate professional ethics, courtesy and empathy in handling patients, radiation safety, film processing/imaging plate (IP) handling and image archiving and radiographic equipment manipulation.

RAD 290 International Studies in Radiography 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; RAD 120 minimum grade “C-”

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, students will travel to Peru to do field work and research on mummies, human and animal bones, pottery and other artifacts. The students will have the opportunity to compare cultural differences between Peru and the United States. The students 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. Successful students may not repeat this course; unsuccessful students may repeat the course once. Satisfactory completion of REA 070 is required to advance to REA 071. 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. Successful completion of this course with a grade of “S” will raise your Academic Reading level to 4.

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 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.

Robotics

ROB

ROB 101 Robotics I - I**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 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 101 is generally offered in the first 7 1/2 week session.

ROB 110 Robotics I - II**2 credits****Level I Prerequisites: Academic Reading and Writing Levels of 6; ROB 101 minimum grade "C", may enroll concurrently****15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours**

This course continues the robotic series and includes additional information on the types of robots, application of flexible automation, open and closed loop control systems, tooling and various types of sensors and their operation. Integrating the use of inputs and outputs (I/O) and counters into structured robot programs is also covered. Field trips to local manufacturing firms that use robotic equipment will help the students understand and witness concepts presented in class. This course contains material previously taught in ROB 121. ROB 110 is generally offered in the second 7 1/2 week session.

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 minimum grade "C"****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 system.

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-ethnic 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 social problems which affect societies and the lives of the people who live in them. Emphasis is placed on a theoretical analysis of social problems as well as the historical and current events from which these social problems arise.

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 describe American families as social systems, how to describe the structure of a family and how to identify common patterns in family functioning. Common problems and special circumstances in family functioning will be addressed. Students will learn to identify effective ways to engage families. Basic social work interventions with families will be described.

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 101 Beginning Conversational Spanish 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 acquire practical early-elementary conversational skills. They develop the ability to understand and speak everyday conversational Spanish within the context of Spanish-speaking cultures and through introduction of vocabulary, basic grammatical structures and idioms. Listening activities and some reading/writing activities will be included. Students are expected to spend considerable time outside of class practicing with materials provided. This course contains material previously taught in SPN 109.

SPN 102 Beginning Conversational Spanish II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 101 or one semester of college Spanish

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

In this course students acquire higher-level elementary conversational skills and develop the ability to understand, speak, react, and reflect using everyday standard Spanish. Through the introduction of vocabulary, grammatical structures, idioms, and real-life dramatization, the students will practice these skills. Videos will be used to introduce and reinforce the grammatical and functional content of this course. This course contains material previously taught in SPN 110.

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" or score of 270-345 on the Spanish placement exam
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours

A continuation of SPN 111, this is a transferable course that 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" or score of 346-427 on Spanish placement exam
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course emphasizes intermediate level oral and written communication. Study includes conversation and writing tools, grammatical structures, and cultural investigation and analysis. Class is interactive and participatory. Considerable work outside of class is required.

SPN 202 Second Year Spanish II 4 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 201 minimum grade "C" or score of 428 or above on Spanish placement exam
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours

This course continues intermediate level oral and written communication. Study includes conversation and writing tools, grammatical structures, cultural investigation and analysis and the interpretation and discussion of written works. Class is interactive and participatory. Considerable work outside of class is required.

SPN 211 Intermediate Conversational Spanish 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 110, SPN 122, SPN 201 or SPN 224, minimum grade "C"
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 two or more semesters of college-level Spanish may contact the instructor for permission to waive the prerequisite.

SPN 224 Second Year Spanish II - Literature 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; SPN 201 and SPN 202, minimum grade "C" or score of 428 or higher on the Spanish placement exam
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours

This is a literature course which focuses on Latin American and Spanish short stories and poetry. Authors such as Adolfo Miller, Nicolas Guillen, Ana Maria Matute, Horacio Quiroga, Julio Cortazar, Jorge Manrique y Rosario Castellanos will be studied. The course requires in-class discussion and out-of-class writing in Spanish.

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.

Union Approved Supervision UAS

UAS 111 Construction Supervision I: Motivating Employees 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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 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: Academic Reading and Writing Levels of 6; Admission to Construction Supervision program and UAS 111 minimum grade "C", may enroll concurrently
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 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: Academic Reading and Writing Levels of 6; 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 courses for students enrolled in the Construction Supervision certificate and associate degree programs. This course introduces students to contract law, labor agreements and other legal relationships as they apply to the construction industry. Students will examine issues related to managing human resources such as recruiting, pay incentives, evaluations and training. Various aspects of career management will be highlighted.

COURSE DESCRIPTIONS

**UAS 222 Construction Supervision IV:
The Construction Project 3 credits**

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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: Academic Reading and Writing Levels of 6; 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 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 Sprinkler Fitters UAR

UAR 160 Introduction to Sprinkler Fitter Practices 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6

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 164R Reading Residential Blueprints for Sprinkler Systems 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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 residential sprinkler trade. Topics include the standard drawings used by residential sprinkler fitters and abbreviations and symbols found on those drawings. Limited to United Association students.

UAR 166 Installation of Sprinkler Systems 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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 166R Installation of Residential Fire Sprinkler Systems 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours

This course presents the detailed rules and regulations governing the design, installation and testing of automatic fire sprinkler systems. This course emphasizes the rules that sprinkler fitters must satisfy on the job and also explains the principles of older, existing systems. This course references the NFPA code manuals. Limited to United Association students.

UAR 168 Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6

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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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**

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 journeymen. The course includes: sewage disposal, sewers and drains, building drainage systems, the plumbing trap, and venting the drainage system. Limited to United Association students.

UAP 110 Customer Service Techniques 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 Technician Practices 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 and job safety and health. Related safety is covered in all topics. Limited to United Association students.

UAE 142 Soldering and Brazing 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 electro-mechanical equipment encountered in the HVACR field. Related safety is included in each topic. Limited to United Association students.

UAE 150 DC Electronics 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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.

UAE 210 Advanced Electronics and DDC Systems 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 present advanced control theory concepts and provide a thorough understanding of the operation of commercial controls for HVACR systems. Due to the complexity and proprietary nature of Direct Digital Control (DDC) systems, both generic and specific information on DDC systems will be introduced and studied. A basic introduction to DDC and the terms used in the industry will be followed with detailed information of DDC system architectures, hardware components and software requirements. Comprehensive specific information regarding input and output types and the processes of DDC systems will be covered. Limited to United Association students.

UAE 220 Environmental Technology in HVACR 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 today's environmentally conscious business climate, many industries are looking to ensure that their business is reducing their impact on the environment. The HVACR industry is poised to make considerable contributions to reducing these impacts. This course will discuss the utilization of sustainable and environmental "green" technologies in the HVACR field. There will be discussion on the general concepts and practical applications regarding the proper use of these technologies within the HVACR industry. In addition, discussion will occur on the increasing use of sustainable products and their use in the HVACR field. Limited to United Association students.

United Association Training

UAT

UAT 110 UA/MCA Foreman Certification 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 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 foremen 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 110C Canadian Foreman Certification 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 certify the participants as Canadian Foreman Certification Instructors. The program provides instructors with the information and ability to present material to enable student journeypersons to move into supervisory roles in the Union construction industry. This course will provide the tools for the instructors to prepare their students for the transition to leadership roles and initial supervisory skills needed to complete the requirements of the position. Limited to United Association program participants.

UAT 111 Introduction to Industrial Teacher Training 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 121 Industrial Teacher Training II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 131 Industrial Teacher Training III 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 141 Industrial Teacher Training IV 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 151 Industrial Teacher Training V 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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 skill and methods of teaching in a fifth technical skill area. Limited to United Association program participants.

UAT 161 Technical Seminar 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 171 Professional Seminar 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; 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. Limited to United Association program participants.

UAT 201 Advanced Instructor Training I 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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. Limited to United Association program participants.

UAT 202 Advanced Instructor Training II 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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. Limited to United Association program participants.

UAT 203 Advanced Instructor Training III 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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. Limited to United Association program participants.

UAT 204 Advanced Instructor Training IV 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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. Limited to United Association program participants.

UAT 205 Advanced Instructor Training V 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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. Limited to United Association program participants.

UAT 207 Using UA Resources 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6

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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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; 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
35 lecture, 0 lab, 0 clinical, 10 other, 45 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

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 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 226 PowerPoint for Instructors 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; UAT 222
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

Microsoft PowerPoint is a flexible tool for creating and delivering class presentations and handouts. This course will cover methods in developing instructional presentations and related student materials. Basic topics will include adding text, selecting appropriate fonts and colors, inserting graphics, using master slides and displaying a slide show. Advanced topics will include adding tables and charts, inserting hyperlinks, adding animations, customizing slide shows and using the drawing tools. This is a hands-on computer class. Limited to United Association program participants.

UAT 227 Geothermal Heat Pump Installation 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This training session will provide the necessary skills to train your local members as IGSHPA certified installers. This training emphasizes the importance of the effort in bringing energy independence and environmental security to our nation by installing this renewable space conditioning system. Upon completion of this training program and the passing of the required exam, a card and certificate will be issued to the student instructor certifying them as an UA/IGSHPA certified installer trainer. Limited to United Association program participants.

UAT 228 Online Teaching Techniques 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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. Students 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 233B Introduction to Building Information Modeling (BIM) 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course explores the critical aspects of Building Information Modeling (BIM) as applied to piping coordination, fabrication and installation within the piping model production environment. Utilizing AutoCAD software, NavisWorks Manage software and Quickpen Pipe Designer 3D software, issues relating to the processes and procedures relating to on the job application of the BIM piping model are explored within the three-dimensional environment. Topics include three-dimensional model production, simultaneous production tasking, coordination clash detection, pre-fabrication applications and electronic transfer of virtual layouts to real world installations (Total Station). Students should have a basic understanding of CAD. Limited to United Association program participants.

UAT 234 Online Recruiting and Promotion 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 0 lab, 0 clinical, 10.5 other, 22.5 total contact hours

This course will demonstrate how to create a local union Web site, promote the local union through radio, television and the Internet for the purpose of advertising and mass media recruiting. Upon completion of this course, the instructor will have created a working Web site for their local union, will have purchased their own domain name (dot-com address), and have their site published on the World Wide Web. The instructor will have gained sufficient knowledge to publish a complete dynamic Web site. Instructors will also be exposed to various strategies for promoting their local union, and learn about recruiting using the Internet and mass media. Limited to United Association program participants.

UAT 235 Power Piping 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 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 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 238 Methods of Teaching Downhill Welding 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed for the welding instructor who will be teaching apprentices and journey workers in the technique of Downhill Welding. The welding instruction will be given on large diameter pipe. Classroom instruction on how and what to teach will be presented. This class will include joint preparation, line up on coupons and hands-on welding. Limited to United Association program participants.

UAT 239 AWS-CWI Certified Welding Inspector 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 is an intensive seven day course designed to prepare a candidate to successfully complete the American Welding Society (AWS) Certified Welding Inspector (CWI) Examination. Limited to United Association program participants.

UAT 240 Applied Electrical Fundamentals 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 243 Operation of the Green Trailer 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours

Instructors taking this class will learn how to present classes covering the basics of Sustainable (Green) Technology as it applies to the mechanical and plumbing systems installed and serviced by UA members. Students will learn best practices for teaching with the Hampden Green Training equipment on the UA Green Training Trailer. Trailer and equipment safety, proper trailer setup, operation of the onboard generator, rear projection system, fuel, electrical and water hookup will be covered. Some of the training demonstrators onboard the trailer are: fuel cell trainer, wind power generation, green plumbing system trainer, solar heating system, solar photovoltaic system, geothermal system trainer and a high efficiency gas furnace. UA Green Training Trailer event scheduling and transportation policies will be covered. Limited to United Association program participants.

UAT 243B Operation of the UA Welding Trailer 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

The purpose of this course is to instruct the student in the methods and techniques utilized in the site selection, transport, installation of required utilities and equipment operation and maintenance for the UA Welding Training Trailer. Upon completion of the course, the student will be able to request the trailer, take receivership (setup and pack for shipping), give tours of the trailer and provide training at the local union facility. The training will also involve operation of welding equipment, tools and video training devices installed in the trailer. Limited to United Association program participants.

UAT 243C UA Pipe Trades Trailer Operations 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

The purpose of this course is to instruct the student in the methods and techniques utilized in the site selection, transport, installation of required utilities and equipment operation and maintenance of the UA pipe trades training trailers. The trade trailers are outfitted with the very latest equipment utilized in the plumbing, pipefitting, HVAC and sprinkler fitting industries for the purpose of training apprentices and journey persons of the United Association. Limited to United Association program participants.

**UAT 243D Residential Plumbing Demo
Training Trailer**

1.5 credits

**Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours**

The Plumbing Service Demonstration Training Trailer course will provide training on the use of the UA's newest training trailers. The plumbing Service Demonstration Training Trainer is designed to highlight the variety of plumbing services that UA Signatory Contractors provide and the training UA Plumbing Service Professionals receive to do that work. Also included is the use of the new Plumbing Service Trainer Trailer which provides several portable modules loaded in a 53' semi-trailer for use by local training centers for immediate Plumbing Service Training. This class is a prerequisite for the local's use of the trailers. Limited to United Association program participants.

UAT 244 Fund of Variable Frequency Drives

1.5 credits

**Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours**

This course will provide the local union instructor with the necessary presentation materials and teaching techniques to introduce a VFD class in their curriculum. Students taking this course should have a good knowledge base of electrical controls and AC induction motors, and be working in the HVAC service field. Each participant will receive ample literature in PDF format, multiple power point presentations and a detailed course outline. Installation, setup/programming and troubleshooting techniques will be covered along with associated hands-on. Limited to United Association program participants.

UAT 245 Teaching with Exam View

1.5 credits

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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 246 Concepts of Controlled Bolting

1.5 credits

**Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours**

This course trains instructors in teaching concepts of achieving integrity in a bolted joint. The bolted flange assembly continues to be the most overlooked piece of equipment in a piping system. Although much preparation goes into commissioning a piping system, little thought goes into tightening the joints in a controlled fashion. This course presents the theory of how a bolted connection works dynamically as a piece of equipment, the calculations required to tighten a flange to insure maximize joint life and integrity and the practical means to achieve preload including the use of hydraulic torque wrenches and hydraulic bolt tensioners. Limited to United Association program participants.

UAT 247 ASME B31.1 Code

1.5 credits

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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

**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 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

**Level I Prerequisites: Academic Reading and Writing Levels of 6
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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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 relation 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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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**Level I Prerequisites: Academic Reading and Writing Levels of 6****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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

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 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 269C Canadian Medical Gas Instructor Training 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed to certify medical gas instructors in the delivery of the content required by the Canadian Standards Association (CSA) Code Z-7396.1.09. This code is required for all medical gas installations in Canada to be undertaken by licensed Plumbers or Steamfitters who must show documented proof of training in the CSA code. Limited to United Association program participants.

UAT 270 Properties of Metals 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 troubleshooting 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
35 lecture, 10 lab, 0 clinical, 0 other, 45 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. Limited to United Association program participants.

UAT 278 GTAW Wire Feed Welding 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
35 lecture, 10 lab, 0 clinical, 10.5 other, 55.5 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 278B Teaching Wire Feed Welding 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course focuses on training the trainer and will provide the student with an understanding of how to teach the orbital wire feed welding process at the local level. Topics cover the operation, technology, equipment set-up and safety issues associated with these types of advanced welding systems. Additionally, the course includes process variables, system programmer control functions, weld parameter selection and gives the theoretical basis for weld program development. The course is structured to provide students a hands-on training approach using the AMI 227 and Liburdi Gold Track orbital wire feed welding systems. Limited to United Association program participants.

UAT 279 UA Certified Machine Cutting, Severing, and Beveling 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed to teach the Journey person 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 journey person is required to pass a practical and written exam. Limited to United Association program participants.

UAT 280 Aluminum Pipe Welding (GTAW) 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
10 lecture, 12.5 lab, 0 clinical, 0 other, 22.5 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 troubleshooting 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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 294B Advanced Plumbing Service II 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course on residential and commercial service plumbing will review and cover the U.A. Plumbing Service Curriculum. Throughout this advanced training, students will identify new opportunities with up-to-date, high tech, plumbing fixtures, products, tools, equipment, safety and green technology in the plumbing industry. This course will address the importance of customer communications, social styles, salesmanship, marketing and the cost of doing business. Limited to United Association program participants.

UAT 295 UA STAR Plumbing Review 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 305C Canadian Green Building 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course includes four main topics: Leadership in Energy and Environmental Design, understanding high efficiency buildings and sustainable design, development of a training program for delivery of up-to-date local membership skills for the green building revolution, methods and strategies for identification and targeting of work in the green building sector for the future. Limited to United Association Instructor Training program graduates.

UAT 307 Interactive Teaching 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This class will build on the professional classes offered during the first five years of the UA Instructor Training Program specific to fire sprinkler fitter instructors. The class will help our instructors combine presentation skills with technical knowledge. Topics include new and more effective techniques on how to: effectively engage their audience, create individual and group discussion, structure classroom set-up to be more conducive to individual participation, disengage problematic or disruptive participants, manipulate the lesson plan to fit a set time frame and create participant interaction. Limited to United Association Instructor Training program graduates.

UAT 308 Industrial Refrigeration Market 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This class will cover the set-up, planning, organization and instruction related to the industrial/commercial refrigeration industry. Topics covered will include system design and utilization, case-cooler-end product refrigerating principles, system troubleshooting and start-test and balance. Of important inclusion will be the EPA's new "GreenChill" (supermarket refrigeration) program and its move into the industry, and how field technicians can assist the customers in qualifying and re-certifying buildings for the program. Limited to United Association Instructor Training program graduates.

UAT 309 Combustion Analysis 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This sustainable energy course is designed to educate UA instructors on the essential information required to train apprentices and journeymen on achieving higher fuel efficiencies, better system performance and reduced greenhouse gas emissions by performing and understanding combustion analysis. It is necessary to perform a combustion analysis on all combustion systems to ensure safe operation at peak efficiency. Upon successful completion and assessment, participants will receive a certification that attests to their knowledge of combustion analysis and carbon monoxide safety. Limited to United Association Instructor Training program graduates.

UAT 310 Setting Up HVACR Programs 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
12 lecture, 10.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course trains instructors in procedures for starting up new HVACR programs at the local school. Topics include the scope of the industry, the market requirements of the geographical areas and the physical equipment, tools, supplies and manpower requirements for a HVACR program to be successful. Limited to United Association Instructor Training program graduates.

UAT 311 Confined Space 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 five-day training is a combination of OSHA's (#2260) 3-day classroom-based confined space course on OSHA's General Industry Standard with CPWR's 2-day hands-on simulated entry training. The OSHA 2260 course is designed to direct students to first determine if a space is a confined space, then to properly classify each confined space as either permit-required or a non-permit space. Topics include legal issues, permit programs, ventilation and rescue. Course features workshops on confined space hazards and classification of spaces. CPWR's Hands-on training includes air monitoring, ventilation, supplied-air respirator (SARs), self-contained breathing apparatus (SCBAs), entry procedures, retrieval and other aspects of permit-required confined space entry. Participants who complete the course will receive: an OSHA 2260 Certificate; a CPWR 16-hr Confined Space Certificate; and a CPWR Train the Trainer Certificate. Limited to United Association Instructor Training program graduates.

UAT 312 Energy Auditing and Retrofit 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course will cover how the sustainable energy movement is using the energy retrofit process to meet the goal of making buildings efficient. All steps in the energy retrofit process will be covered with emphasis on the audit and Energy Conservation Measures (ECM) portion of the process. Also, the instruments used in the audit process as well as the engineering concepts of developing ECM will be covered. Limited to United Association Instructor Training program graduates.

UAT 320 History of the Labor Movement 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 322 Labor History in the UA 1800 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

Labor History and the UA is a class covering the struggles of the labor movement from 1800 to present. It is built on the narratives of working people and their leaders creating enduring institutions. It is the story of crises, courage and innovations that spans 350 years from colonial craftsmen into the twenty-first century. There is special attention paid to more recent history from the 1920's to the present day. This class will cover events and people through time that have played an important role in labor history. Limited to United Association Instructor Training program graduates.

UAT 325 Industrial Rigging 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
37 lecture, 0 lab, 0 clinical, 8 other, 45 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 331 Energy Auditor Certification 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course teaches procedures for accumulating and evaluating practical data related to energy usage in residential and commercial buildings. The purpose of this course is to prepare a certified audit containing energy analysis results and recommendations for energy cost savings. Upon successful completion of this course, participants will receive certification that attests to their knowledge of energy efficient technologies based on manufacturers' performance data, legislation related to energy mandates, blower-door testing, thermography and identification of energy saving measures. The certification, including a written exam and performance evaluation, allows the instructor to train and certify members in their home local. Limited to United Association Instructor Training program graduates.

UAT 343C Canadian Green Construction 3 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours

The UA Canada Green Construction course teaches instructors to prepare trades persons/workers to participate fully in Green/Sustainable Construction projects in Canada. Topics include the Integrated Green Project Team concept, the Green Building Standards rating system, identifying critical practices on sustainable project sites and project management for Green Construction for foremen and supervisory personnel. The course will serve as a prerequisite to qualify to write LEED Green Associate Professional for GaGBC credentials. Limited to United Association Instructor Training program graduates.

UAT 344C Canadian Steamfitter Red Seal 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course will teach participants to deliver instruction on the requirements for the Canadian Steamfitter Interprovincial Red Seal course. The students will take an in-depth look at the Red Seal Program, National Occupational Analysis and various provincial statutes that regulate worker certification, as well as instructional materials required to deliver this program. Instructors that take this course should have experience in the Steamfitter trade in order to meet the requirements for delivery of this course and successfully challenging the examination. Limited to United Association Instructor Training program graduates.

UAT 351 Plumbing Codes 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 352 Residential Fire Protection Systems Certification for Installers 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 course prepares the student to successfully pass the ASSE Series 7000 Installers Certification for plumbing based on fire protection systems used for one- and two-family dwellings. The course includes general residential plumbing, basic fire science, approved residential fire sprinklers and other approved plumbing products for fire protection. The course also provides a working knowledge of location, sizing and installing residential fire protection systems. Limited to United Association Instructor Training program graduates.

UAT 353 ASME Section IX Welding Code 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
22.5 lecture, 0 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed to provide individuals with an understanding of welding procedures specifications and welder qualifications in accordance with Section IX of the ASME Code. Participants will be able to apply the rules of Section IX as they pertain to the development of welding procedure specifications and the qualification of welders. A logical approach to compliance with Section IX is discussed and implemented in an open workshop environment. Limited to United Association Instructor Training program graduates.

UAT 355 Quality Control Inspection 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course will cover the duties and responsibilities of a Quality Control Inspector. The course will provide the information and knowledge needed to train individuals as Quality Control Inspectors for work in the construction/fabrication industry both in the shop and on the job site. The course instructors are UA members with many years of experience working as Quality Control Managers in the piping industry. The United Association believes that having a UA trained quality control inspector on staff brings both quality and financial savings to the employing contractor and customer alike. Limited to United Association Instructor Training program graduates.

UAT 356 Corrosive Resistant Alloys 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
7.5 lecture, 15 lab, 0 clinical, 0 other, 22.5 total contact hours

This course is designed for UA Welding Instructors who teach the challenges of welding high nickel alloys. The course focuses on the procedures and techniques utilized in welding corrosion resistant alloys. As the piping industry is turning to the use of these materials more and more, this course will provide Local Unions a means of helping their members develop the skills necessary to address industry's welding needs. Our interactive format offers the opportunity for individuals to share and learn from their peers. Students must provide their own personal safety equipment. Limited to United Association Instructor Training program graduates.

UAT 358 Cross Connection 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

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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 Instructor Training program graduates.

UAT 367 Advanced Air and Water Analysis 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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 371 Crane Signalperson Training and Certification 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
15 lecture, 7.5 lab, 0 clinical, 0 other, 22.5 total contact hours

This course uses the OSHA Signalperson Training Program, which is a state of the art interactive signalperson training aid. The course covers all pertinent requirements of the current OSHA 1926.550, ASME B30.5, B30.23, and even the proposed OSHA Cranes and Derrick Standard 1926.1400. The course covers theoretical and practical components of signaling and crane characteristics and limitations. This course uses instructor materials which include practice scenarios so that signaling becomes second nature to students. Certification and Examiner (proctor) credentials are awarded upon successful completion of the course. Limited to United Association Instructor Training program graduates.

UAT 390 Operation of a UA Training Program 1.5 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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

Level I Prerequisites: Academic Reading and Writing Levels of 6
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, minimum grade "C-"**Corequisites:** VID 112**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

This course is intended to provide students with both hands-on technical skills as well as production aesthetics. The technical phase will provide students with advanced skills to shoot with a camera; set up lights and manage audio-recording equipment. The production - aesthetics phase covers the areas of writing, producing and directing. From pre-production through the production phase, students will use storyboarding and writing techniques to create original video projects. During the production phase, they produce and direct their projects in a studio or field setting.

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, minimum grade "C-"**Corequisites:** VID 102**60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours**

This course is intended to provide students with both hands-on technical skills as well as production aesthetics. The technical phase will provide students with advanced skills to shoot with a camera; set up lights and manage audio-recording equipment. The production - aesthetics phase covers the areas of writing, producing and directing. From pre-production through the production phase, students will use storyboarding and writing techniques to create original video projects. During the production phase, they produce and direct their projects in a studio or field setting.

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 will create and customize a basic Web page to showcase their projects, demo reel, and peripheral projects that relate to multimedia. Students also produce three short commercial video projects to showcase on their completed Web page.

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 introduces students to in-studio projects utilizing green screen (or chromo key) effects. Students create virtual backgrounds, landscapes or atmospheres to stage against actors, activities or props in the foreground. This process includes: lighting, filming and editing.

VID 270 Documentary Video Production**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 provides students with skills to write, produce, direct and edit non-fictional videos. Students will be instructed on methods and hands-on-skills to construct a non-fictional story. This includes formulating a story with an angle, structure, content and style. Interviewing and researching methods are demonstrated through hands-on exercises. Students view/critique various contemporary documentaries as they relate them to their own projects. The title of this course was previously Documentary and Reality Videos.

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 codes 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, 0 other, 45 total contact hours**

In this course, students will develop skills to create interactive DVDs using digital video, graphic files, photographs and other multimedia formats. By combining DVD menus, buttons, subtitles, alternate languages and soundtracks, students create a portfolio of customized DVDs for client-based requests.

VID 295 Professional Portfolio**3 credits****Level I Prerequisites:** Academic Reading and Writing Levels of 6; VID 102 and VID 112; and one of the following: VID 200, VID 255, VID 270 or VID 277, may enroll concurrently**45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours**

In this course, students will develop skills to create a resume, compile a DVD demo reel and complete a final video thesis project. The demo reel is compiled based on previously completed student works. The demo reel will provide students with a professional portfolio to solicit work in the video production field. Each student will write, produce and direct a thesis project.

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 Yoga I 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course introduces and applies fundamental disciplines and postures in yoga. The title of this course was previously Introduction to Hatha Yoga.

YOG 102 Yoga II 2 credits

Level I Prerequisites: Academic Reading and Writing Levels of 6; YOG 101 minimum grade "C"

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours

This course is a continuation of the introduction and application of fundamental disciplines and postures in yoga. The title of this course was previously Philosophy and Practice of Yoga.



Course Changes: Code, Title, and Credit Changes

WAS			IS NOW		
Course	Title	Credit	Course	Title	Credit
ACS 111	First Year Experience Seminar	3	ACS 111	College Success Seminar	3
BMG 109	Entrepreneurship I - The Essentials	3	BMG 109	Starting Your Business	3
BOS 183	Spreadsheet Software Applications	3	BOS 184	Spreadsheet Software Applications I	3
BOS 183	Spreadsheet Software Applications	3	BOS 284	Spreadsheet Software Applications II	3
CCP 200	Working with Parents	3	CCP 200	Working with Families in a Diverse Society	3
CCP 220	Care and Development of Infants and Toddlers	3	CCP 220	Development and Care of Infants and Toddlers	3
CIS 099	Computer Literacy	1	CIS 099	Computer Skills for Beginners	1
CIS 278	Java Server Programming	4	CPS 278	Java Server Programming	4
CPS 261	Programming Data Structures in Java	4	CPS 261	Advanced Java Concepts	4
CSS 270	Computer Security VII	4	CST 270	Data Recovery and Analysis	4
CUL 100	Introduction to Hospitality Management	3	CUL 100	Introduction to Culinary Arts Industry	3
HSC 115	Medical Office and Laboratory Procedures	3	HSC 115	Clinical and Lab Procedures for Office Assistants	3
INP 271	Web Coding III	3	INP 271	Client-Side Web Programming	3
INP 276	Web Animation II	3	INP 276	Rich Internet Application Programming	3
INP 281	Web Coding IV	3	INP 281	Server-Side Web Programming	3
MTH 125	Everyday College Math	3	MTH 125	Everyday College Math	4
NUR 100	Introduction to Nursing - Care of Healthy Older Adults	2	NUR 102	Fundamentals of Nursing	2
NUR 100	Introduction to Nursing - Care of Healthy Older Adults	2	NUR 106	Fundamentals of Nursing - Lab and Clinical Practice	4
NUR 103	Fundamentals of Nursing - Lab and Clinical Practice	3	NUR 106	Fundamentals of Nursing - Lab and Clinical Practice	4
NUR 123	Acute Care Nursing I	3	NUR 123	Medical-Surgical Nursing I	3
NUR 124	Acute Care Nursing I - Clinical Practice	2	NUR 124	Medical-Surgical Nursing I - Clinical Practice	2
NUR 223	Acute Care Nursing II	3	NUR 223	Medical-Surgical Nursing II	3
NUR 224	Acute Care Nursing II - Clinical Practice	2	NUR 224	Medical Surgical Nursing II - Clinical Practice	2
NUR 271	Advanced Topics in Medical-Surgical Nursing	1	NUR 283	Medical-Surgical Nursing III	3
NUR 281	Transition to the Registered Nurse Role	1	NUR 283	Medical-Surgical Nursing III	3
NUR 272	Advanced Topics in Medical-Surgical Nursing - Lab Practice	.5	NUR 284	Medical-Surgical Nursing III - Clinical Practice	3
NUR 282	Transition to the Registered Nurse Role - Clinical Practice	2.5	NUR 284	Medical-Surgical Nursing III - Clinical Practice	3
SPN 110	Beginning Conversational Spanish II	2	SPN 102	Beginning Conversational Spanish II	3
UAS 122	Construction Supervision II	3	UAS 122	Construction Supervision II: Supervisory Skills	3
VID 270	Documentary and Reality Videos	3	VID 270	Documentary Video Production	3

CURRICULUM CHANGES

New Courses

Course	Title	Credit	Course	Title	Credit
BIO 199	Anatomical Studies	1-3	MTH 034	Foundations of Numeracy	4
BMG 206	Retail Principles and Practices	3	MUS 112	Washtenaw Community Concert Band	2
BMG 211	Merchandising and Inventory Management	3	MUS 185	Western Music History Survey	3
BMG 275	Business and Supply Chain Analytics	3	NUR 257	Introduction to the Research Approach in Nursing	3
BMG 295	Capstone: Retail Management	1	SPN 202	Second Year Spanish II	4
CCP 204	The Developing Professional in Early Childhood Education	2	UAS 230	Construction Supervision V: Scheduling and Project Management	3
CCP 205	Practicum for the Developing ECE Professional	1	UAT 110C	Canadian Foreman Certification	3
CCP 211	Administration of Child Care Programs	3	UAT 233B	Introduction to Building Information Modeling (BIM)	1.5
CNT 217	CCNA Security Certification	4	UAT 243D	Residential Plumbing Demo Training Trailer	1.5
CNT 237	Health Information Networking	4	UAT 278B	Teaching Wire Feed Welding	1.5
COM 210	Nonverbal Communication	3	UAT 294B	Advanced Plumbing Service II	1.5
CON 180	Introduction to Green Building	3	UAT 331	Energy Auditor Certification	1.5
CPS 251	Android Programming Using Java	4	UAT 343C	Canadian Green Construction	3
CPS 280	Advanced Web/Database Programming	4	UAT 344C	Canadian Steamfitter Red Seal	1.5
ELE 106	Renewable Energy Technology	3	UAT 352	Residential Fire Protection Systems Certification for Installers	3
HUM 120	Introduction to Film	3	UAT 355	Quality Control Inspection	1.5
INP 261	Introduction to Web Programming	3	UAT 356	Corrosive Resistant Alloys	1.5
INP 281	Server-Side Web Programming	3	UAT 371	Crane Signalperson Training and Certification	1.5
INP 291	Emerging Web Technologies	3			

Discontinued Courses

Course	Title	Credit	Course	Title	Credit
ABR 231	Project Management and Implementation	4	GLG 125	Historical Geology	4
ACC 101	Fundamentals of Accounting II	3	GLG 219	Field Studies in Geology	1-4
AMS 104	Rapid Prototyping and Methods	3	GLG 289	Dinosaurs for Educators	3
AMS 105	Lean Manufacturing Methods	3	HSW 150	Helping Approaches for Groups	3
AMS 204	Innovations Application	4	MTH 166	Math for Radiography	3
AMS 205	Build Concept Prototype	4	PSY 207	Adolescent Psychology	3
BMG 100	Investments	1	PSY 209	Psychology of Adjustment	3
BMG 106	Legal Basics in Business	3	PSY 232	Psychology of Women	3
BMG 110	Credit Management	3	PSY 273	Psychology of Parenthood	3
BMG 122	Business Law II	3	RES 120	Real Estate Finance	3
BMG 210	Money, Banking and Financial Institutions	3	RES 140	Real Estate Law	3
BMG 272	Problem Solving	2	RES 150	Real Estate Investment	3
BOS 130	Office Financial Applications	3	RES 160	Real Estate Property Management	3
GDT 127	QuarkXPress for Print Publishing	4	ROB 171	Introduction to FIRST Robotics	1
GLG 109	Common Rocks	3	ROB 172	FIRST Robotics Competition	3

Reactivated Courses

Previous Code	Title	Credit
ABR 230	Advanced Auto Body V: Advanced Auto Refinish Applications	4
CCP 220	Development and Care of Infants and Toddlers	3
GDT 215	Typography II	3

New Programs

Program Title	Program Code	Degree/Certificate
3D Animation	CTANI	Certificate
Early Childhood Education	AAECED	Associate in Arts Degree
Retail Management	APRM	Associate in Applied Science Degree
Retail and Business Operations	CTRBO	Certificate
Web Database Programmer	CVWDP	Advanced Certificate

Discontinued Programs

Program Title	Program Code	Degree/Certificate
Specialty Option Only - Automation Technology	APATEC	Associate in Applied Science Degree
Advanced Manufacturing	CTAMFG	Automotive Services Technician
Automation Technology	CTAMTC	Automotive Services Technician
Data Recovery and Analysis	CVDRAA	Advanced Certificate
Data Recovery and Analysis	APDRAD	Associate in Applied Science Degree
Foundations of Data Recovery and Analysis	CTDRAC	Certificate
Music Performance	CTMPER	Certificate
Nursing Transfer (UM School of Nursing)	APNURT	Associate in Applied Science Degree
Technical Writing	ASTWRT	Associate in Science Degree

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
CFAM	Automotive Mechanics	CTASVT	Certificate
CVAST	Automotive Services Technician	CTASVT	Certificate
CFVID	Digital Video Film Production	CTDVPC	Digital Video Production
AATW	Technical Writing	AATCD	Technical Communications
CTTWR	Technical Writing	CTTC	Technical Communications
CVWBAP	Web Application Developer	CVWBDDV	Web Application Development





Personnel

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Personnel

This is a partial list. For a comprehensive list of personnel, refer to the WCC Staff Directory.

Executive Officers

Whitworth, Larry L. <i>President</i> B.A. - Adrian College M.B.A. - Duquesne University Ed.D. - University of Pittsburgh	1998
Blacklaw, Stuart T. <i>Vice President for Instruction</i> B. A. – Olivet College M.A. – University of Michigan Ph.D. – Capella University	2010
Hardy, Steven <i>Vice President of Administration and Finance</i> B.B.A. - Eastern Michigan University M.B.A. - Eastern Michigan University	2001
Blakey, Linda S. <i>Associate Vice President of Student Services</i> B.S. - University of Michigan M.S. - University of Nevada at Las Vegas M.A. - University of Michigan	1988
Flowers, Damon <i>Associate Vice President of Facilities Development and Operations</i> B.S. - Lawrence Technological University M.S. - Central Michigan University	1994
Kruzel, Douglas P. <i>Associate Vice President of Human Resources</i> B.S. - University of Toledo M.B.A. - University of Toledo	2001
Lawson, Wendy <i>Associate Vice President of Development, Grants and Governmental Relations</i> B.A. - University of Michigan M.B.A. - Eastern Michigan University	2003
Ladha, Aminmohamed J. <i>Chief Information Officer</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1995

Deans

Abernethy, Bill <i>Dean of Humanities, Social and Behavioral Sciences</i> B.A. - University of Oregon M.A. - University of Oregon Ph.D. - University of Wisconsin	1993
Chisholm, Arnett Dean of Admissions and Student Life B.S. - University of Michigan M.A. - Eastern Michigan University	1988
Donham, Marilyn <i>Dean of Continuing Education and Community Services</i> B.S. - Eastern Michigan University M.S. - Eastern Michigan University	2006
Egan, James <i>Dean of Distance Learning</i> B.A. - Case Western Reserve University B.S. - Case Western Reserve University M.S. - University of Michigan M.S. - University of Michigan	1989
Gordon, Ross <i>Interim Dean of Vocational Technologies</i> B.B.A. - Eastern Michigan University	2010
Liu, Victor <i>Dean of Learning Resources</i> B.A. - University of South Carolina M.A. - Michigan State University M.I.L.S. - University of Michigan	1991
Showalter, Martha <i>Dean of Math, Science, and Health</i> B.S. - Ohio State University B.A. - Ohio State University M.Ed. - University of Houston	1980
Taylor, Patricia A. <i>Dean of Support Services and Student Advocacy</i> B.A. - Central Michigan University M.A. - Central Michigan University Ed.D. - Eastern Michigan University	2002
Wilson, Rosemary <i>Dean of Business and Computer Technologies</i> B.S. - Milligan College M.B.A. - University of Notre Dame	1986

Department Chairs

Please go to www.wccnet.edu/departments to find a current list of Department Chairs.

Faculty/Professional Staff

Abbotts, Tammy	2008	Avinger, Charles	1992
<i>Building Services Supervisor</i>		<i>Faculty: English / Writing</i>	
A.D. - Oakland Community College		B.S. - University of Alabama	
B.B.A. - Baker College		M.A. - University of Alabama	
Abella, Mohammed	1999	Babcock, H. Lind	1994
<i>Faculty: Mathematics</i>		<i>Faculty: Digital Media Arts</i>	
B.S. - University of Bradford, England		B.F.A. - Michigan State University	
M.S. - University of Miami		M.A. - Central Michigan University	
Ph.D. - University of Miami		M.F.A. - Kent State University	
Abrams, Terry	1990	Bai, Jing	2005
<i>Faculty: Digital Media Arts</i>		<i>Systems Analyst II</i>	
B.F.A. - Maryland Institute College of Art and Design		B.S. - Beijing Shifan University	
E.D.M. - Boston University		M.S. - University of Detroit Mercy	
Certificate - Agfa-Gevaert		Bailey, Rosanne	2003
Adler, Sally (Sara Jane)	1993	<i>Corporate Relations and Special Events Manager</i>	
<i>Faculty: Public Service Careers</i>		B.A. - Purdue University	
B.S. - Pennsylvania State University		C.F.R.E. - Certified Fund Raising Executive	
M.S. - Pennsylvania State University		Baker, Jennifer L.	1995
Certificate - PA Dept of Education		<i>Faculty: Digital Media Arts</i>	
Aeilts, Larry	1999	A.D. - Washtenaw Community College	
<i>Ombudsman</i>		B.A. - University of Michigan	
B.B.A. - Cleary College		M.F.A. - Rhode Island School of Design	
M.S. - Walsh College		Baker, Mark E.	1994
Albach, Suzanne	2007	<i>Firearms Range Master</i>	
<i>Faculty: Physical Sciences</i>		A.D. - Henry Ford Community College	
B.A. - Bowling Green State University		Ballard, Bayyinah	2007
B.S. - Eastern Michigan University		<i>Assistant Director of Financial Aid</i>	
M.S. - Mississippi State University		A.D. - Davenport University	
Aldrich, Michael	2004	B.B.A. - Davenport University	
<i>Director of Systems Administration</i>		Barrie, Maryam	2002
B.S. - University of Illinois- Champaign-Urbana		<i>Faculty: English / Writing</i>	
M.S. - University of Florida		A.A. - Washtenaw Community College	
Anders, Derek F.	1999	B.A. - University of Michigan	
<i>Helpdesk Specialist</i>		M.A. - Eastern Michigan University	
A.A. - Lansing Community College		Barsch, Rachel	2006
A.A. - Washtenaw Community College		<i>Events Coordinator</i>	
Certificate - Washtenaw Community College		B.S. - Eastern Michigan University	
Anderson, Laurice A.	1998	Bartha, Paula	2001
<i>Faculty: Performing Arts</i>		<i>Career Education Coordinator</i>	
B.A. - Butler University		B.S. - Wayne State University	
M.F.A. - University of Michigan		Batell, Mark F.	1984
Arnett, Bonnie	2006	<i>Faculty: Mathematics</i>	
<i>Faculty: Academic Skills</i>		B.A. - Knox College	
B.S. - Eastern Michigan University		M.A. - University of Michigan	
M.A. - Eastern Michigan University		Benin, Michelle	1998
Atkinson, John H.	1997	<i>Labor and Employment Relations Specialist</i>	
<i>Faculty: Public Service Training</i>		C.L.R.P. - Certified Labor Relations Professional - Michigan State	
B.A. - University of Michigan		Bennett, Victoria	2006
M.P.A. - Eastern Michigan University		<i>Academic Administrative Associate Business & Computer Technology</i>	
J.D. - Detroit College of Law		B.S. - Grand Valley State University	

P E R S O N N E L

Personnel

Bhattacharyya, Babli <i>Systems Analyst I</i> B. S. - University of Michigan	2011	Burgen, Clarence <i>Mechanical Systems / Electrical Services Manager</i>	1997
Bhattacharyya, Nilotpal <i>UNIX Administrator</i> B.M.S. - University of Gaubati	1999	Burke, Starr <i>Faculty: Behavioral Sciences</i> B.A. - Wayne State University M.A. - Eastern Michigan University Ph.D - California Coast University	2000
Billick, Christopher <i>Director of Web Services</i> B.F.A. - University of Michigan	2008	Burns-Coral, Mary <i>Faculty: Nursing</i> M.S.N. - Phoenix University	2010
Billings, Kim <i>Union Trades Training Coordinator</i> B.A. - Grand Valley State University M.S. - Boston University	2010	Butcher, Kathleen <i>Faculty: Physical Sciences</i> B.S. - St. Mary's College M.S. - Wayne State University	1989
Bishop, Todd <i>Construction Project Manager</i> Management Certificate - State of Michigan	2001	Byrd, Soyini <i>Payroll Manager</i> B.S. - Madonna University M.S.M. - Walsh College	2005
Blair, Dena <i>Faculty: Humanities / Communication</i> B.A. - Adrian College M.A. - Eastern Michigan University Certificate - Specs Howard School of Broadcast Arts	2006	Byrne, Cheryl <i>Faculty: Business</i> B.S. - Ohio State University M.B.A. - Pepperdine University Ph.D. - Claremont Graduate University	2002
Bogue, Robert A. <i>Instructional Lab Assistant: Automotive Services</i> A.D. - Washtenaw Community College B.S.Ed. - University of Michigan Certificate - State of Michigan Certificate - ASE Master Automobile Technician	1984	Carter, Justin <i>Faculty: Automotive Services</i> B.A. - Wayne State University	2009
Bolton, Jason <i>Graphic Designer</i> B.A. - College for Creative Studies	2008	Chatas, Kristin <i>Faculty: Mathematics</i> B.A.Ed. - University of Michigan M.A. - University of Notre Dame	2001
Boluyt, Marvin <i>Faculty: Life Sciences</i> B.S. - Grand Valley State University M.S. - University of Michigan Ph.D. - University of Michigan	2009	Chiappetta, Lorraine <i>Faculty: Nursing</i> B.S.N. - College of New Jersey M.S.N. - State University of New York - Buffalo R. N. - State of Michigan	2003
Bracco, Patrick <i>Director of Systems Development</i> B.S.E. - University of Michigan M.S.E. - University of Michigan	2000	Clapper, Scott <i>Administrator for United Association Programs and Services</i>	2011
Brandenburg, Elaine M. <i>Program Manager</i> B.S. - Michigan State University	1997	Clark, Diana <i>Counselor: Humanities and Social Sciences</i> A.D. - Washtenaw Community College B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1989
Brown, Cynthia <i>Faculty: Nursing</i> M.S.N. - Eastern Michigan University	2010	Clarke, Nagash <i>Faculty: Chemistry</i>	2007
Brundage, Eleanor <i>Student Resources / Women's Center Case Manager</i> A.D. - Washtenaw Community College B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2009	Claydon, Andrew <i>IT MacIntosh Support Specialist</i>	2001
Burge, Joshua <i>Director of Sprinkler Fitter Apprentice Education</i> A.D. - Macomb Community College B.A. - University of Michigan	2008	Cocco, Richard <i>Classroom Technology Coordinator</i> A.D. - Washtenaw Community College	2000
		Concannon, Breege <i>Faculty: Physical Sciences</i> B.S. - University of Ulster - Northern Ireland Ph.D. - University of South Carolina	2003

Cook, Kathleen <i>Faculty: Clinical Instructional Physical Therapy</i> B.S. - Simmons College Doctorate - Simmons College Certificate - Physical Therapy	2006	Desrosiers, Jacques <i>Director of Campus Safety & Security</i> A.A. - Henry Ford Community College B.S. - Wayne State University	2010
Courvoisier, Lori <i>Conference Services Coordinator</i> B.S. - Michigan State University	1999	Diamond, Nicole <i>Professional Service Faculty Advisor: International Student Center</i> A.A. - Santiago Canyon College B.A. - Chapman University M.S. - California State University Certificate – TESOL	2011
Crawford, Laura A. <i>Public Relations and Marketing Services Editor/Writer</i> B.A. - University of Michigan M.A. - Eastern Michigan University	2000	Dickert, Tyson <i>IT Support Specialist</i> A.A.S. - Washtenaw Community College A.A.S. - Washtenaw Community College Certificate - Microsoft Professional	2006
Crudup, Denise <i>Faculty: Academic Skills</i> B.S. - Eastern Michigan University M.A. - College of St. Catherine M.A. - Eastern Michigan University	2006	Do, Khiet <i>Instructional Lab Assistant: Industrial Technology</i> B.S. - Eastern Michigan University	2005
Culverhouse, David <i>Security Patrol Officer</i>	2010	Dodd, Jimmy <i>Faculty: Auto Body</i> A.D. - Ferris State University	2009
Currie, Kathy <i>Director of Student Records</i> A.D. - Washtenaw Community College	1989	Donahay, Jeffrey <i>Faculty: Industrial Technology</i> B.S. - University of Michigan	1984
Daily, Mark <i>Faculty: Motorcycle</i> Certificate - Harley Davidson University	2009	Downey, Patrick <i>Conference Services Manager</i>	1994
Daniels, Cheryl <i>Recruitment & Employment Specialist</i> A.A. - Schoolcraft College B.A. - Concordia College	1990	Dubiel, Theresa <i>Faculty: Nursing Childbearing Family</i> B.S.N. - Michigan State University M.S.N. - Michigan State University	2006
Davis, Jason <i>Faculty: Mathematics</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2007	Duff, Michael <i>Faculty: Automotive Services</i> A.D. - Washtenaw Community College B.S. - Eastern Michigan University M.A. - Mary Grove College	2009
Day, Allen <i>Faculty: Automotive Services</i> A.D. - Washtenaw Community College B.A. - Northern Michigan University	2009	Eastman, Debra <i>Clinical Instructor: Simulation Innovation Resource Center</i> B.A. – Mercy College of Detroit	2010
Dedhia, Hiralal <i>Faculty: Health Science</i> A.D. - Washtenaw Community College B.S. - University of Poona M.S. - Madonna University	1987	Eccleston, Gloria <i>Director of FlexEd & Special E-Learning Projects</i> A.A.S - Washtenaw Community College B.B.A. - Cleary University	2004
Deinzer, Carol <i>Faculty: Culinary Arts and Hospitality Management</i> A.C. - Monroe County Community College B.A. - Concordia University CEPC - American Culinary Federation	1999	Elliott, Joanna <i>E-Learning Projects Coordinator</i> A.A. - Washtenaw Community College B.S. - Eastern Michigan University	2006
Dentel, Susan <i>Faculty: Biology</i> B.S. - Ferris State University M.S. - Eastern Michigan University	2009	Evans, Laura <i>Northern Area Coordinator</i> B.B.A. - University of Michigan M.S. - Oakland University	2009
Deron, Shawn <i>Faculty: Motorcycle</i> Certificate - Harley Davidson University	2009	Everin, William J. <i>Research Associate & Survey Manager</i> B.S. - Northwestern University M.S. - Purdue University	1997

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Fauri, Greta <i>Student Services Advisor: Children's Center</i> B.A. - Adrian College	1977	Gannon-Boss, Alice <i>Faculty: Culinary Arts and Hospitality Management</i> M.A. - Eastern Michigan University	2010
Fayaz, Amir <i>Faculty: Physics</i> B.S. - Eastern Michigan University M.S. - Eastern Michigan University	2000	Garcia, Anne <i>Faculty: Behavioral Sciences</i> 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	2002
Ferguson, Russell <i>Faculty: Automotive Services</i> B.S. - Central Michigan University M.L.S. - Eastern Michigan University A.S.E. - Certified Master Automobile Technician	2000	Garrett, Joy L <i>Director of Curriculum and Assessment</i> B.S. - Ohio University M.S. Ed - The University of Toledo	2007
Ferrario, Nancy <i>Faculty: Foreign Languages</i> B.A. - St. Louis University M.A. - St. Louis University	2007	Garey, Michelle <i>Faculty: Foreign Languages</i> B.A. - University of Michigan - Flint M.A. - Ohio State University	2001
Fillinger, Barbara <i>Director of Budget, Purchasing, and Auxiliary Services</i> B.S. - Oakland University M.S. - Walsh College	2001	Gave, Keith <i>Student Voice Newspaper Coordinator</i> B.A. - Kansas State University	2008
Finley, Cheryl R. <i>Student Resource and Women's Center Case Manager</i> B.A. - Michigan State University M.A. - Wayne State University	2007	George-Sturges, Cassandra <i>Faculty: Behavioral Sciences</i> M.A. - Eastern Michigan University M.A. - Wayne State University Psy. D. - California Coast University	2003
Fitzpatrick, David J. <i>Faculty: Social Sciences</i> B.S. - United States Military Academy A.M. - University of Michigan Ph.D. - University of Michigan	1996	Gerlitz, Frank <i>Faculty: Mathematics and Physics</i> B.S. - University of Wisconsin M.S. - University of Wisconsin Ph.D. - University of Wisconsin	1991
Flack Jr., Joseph L. <i>Faculty: Business/Accounting</i> B.A. - Eastern Michigan University M.B.A. - University of Detroit J.D. - Detroit College of Law	1990	Geyer, Philip <i>Faculty: Computer Information Systems</i> B.S. - University of Michigan M.S. - University of Michigan	1998
Foster, Brenda <i>Faculty: Mathematics</i> A.A. - Seattle Central Community College B.A. - University of Washington M.A. - University of California	1997	Ghris, William <i>Facilities Systems Analyst</i> A.A.S. - Washtenaw Community College Builders License - State of Michigan	1994
Foster, Connie S. <i>Faculty: Allied Health/Radiography</i> A.D. - Washtenaw Community College B.S. - Central Michigan University M.A. - Eastern Michigan University	1990	Gibson, Maxine <i>Faculty: English/Writing</i> B.S. - Eastern Michigan University M.A. - University of Michigan	1990
Fournier, Allison <i>Faculty: Humanities/Communication</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2010	Gill, Kanwarjit <i>Systems Analyst II</i> B.S. - Eastern Michigan University	2010
		Gilmore, Rhonda <i>Counselor: Counseling, Career Planning and Placement</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2009

Glowski, Susan K. <i>Faculty: English / Writing</i> B.A. - Beloit College M.A. - San Francisco State University	1988	Haeck, Cindy <i>Counselor: Counseling, Career Planning and Placement</i> B.S. - Central Michigan University M.Ed. - North Carolina State University L.P.C. - State of Michigan	2010
Glushyn, Diana R. <i>Clerical Services Supervisor</i>	1979	Hageman, Rebecca <i>IT Support Specialist</i> A.A.S. - Washtenaw Community College B. B. A. - Cleary College	2000
Gmeiner, Mary <i>Director of Labor and Employee Relations</i> 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 – NPFLRA	2002	Hagen, Trudi <i>Director of Children's Center</i> B.S. - Eastern Michigan University M.S. - Eastern Michigan University	2003
Goodman, Gregory <i>Campus Safety and Security Supervisor</i> A.A.S. - Washtenaw Community College Certificate - Washtenaw Community College	2005	Hagood, Robert M. <i>Faculty: Physical Sciences</i> B.S. - Eastern Michigan University M.S. - Eastern Michigan University	1997
Gottschang, Kelley <i>Faculty: Internet Professional</i> B.S. - Eastern Michigan University M.A. - Wayne State University	2004	Hale, Jessica <i>Faculty: Academic Skills</i> B.A. - University of Michigan M.A. - University of Michigan Ph.D. - Eastern Michigan University	2007
Gray, Fiona <i>Student Payment Plans and Collections Supervisor</i> Diploma - University of Strathclyde	2004	Halliday, Geoffrey B. <i>Network Administrator</i> A.D. - Washtenaw Community College	1997
Greaves, Valerie <i>Faculty: Nursing</i> B.S.N. - Eastern Michigan University M.S.N. - Madonna University Certificate - State of Michigan	2007	Hasselbach, Clarence <i>Faculty: Computer Information Systems</i> B.S. - Michigan State University M.S. - University of Southern California M.A. - University of California Berkeley	2000
Green, Margaret <i>Faculty: English / Writing</i> B.A. - University of Michigan M.Ed. - American Intercontinental University	2001	Hatcher, Robert <i>Faculty: Mathematics</i> B.A. - University of Michigan M.S. - University of Michigan	2000
Griffith, Michael <i>UA / Target Marketing Coordinator</i> B.A. - University of Toledo	2000	Hawkins, Janet L. <i>Associate Director of Public Affairs</i> A.D. - Washtenaw Community College B.B.A. - Eastern Michigan University M.A. - Eastern Michigan University A.P.R. - Public Relations Society of America	1977
Groce, Kimberly <i>Counselor: Student Resources / Women's Center</i> B.S.W. - University of Detroit M.A. - Eastern Michigan University L.P.C. - State of Michigan	1999	Heidebrink, Gregg S. <i>Faculty: Social Sciences</i> B.A. - Iowa State University M.A. - Southern Methodist University	1995
Gudsen, Neil <i>CIS / BOS Program Manager</i> B.A. - University of Michigan J.D. - University of Detroit	2000	Heise, Anne E. <i>Faculty: Life Sciences</i> B.A. - Swarthmore College M.S. - University of Vermont	1993
Guerrero, Debra <i>Director of Learning Support Services</i> B.A. - Wayne State University M.A. - California State University, San Bernardino L.P.C. - State of Michigan Certification - Rehabilitation Counselor	2002	Hemsteger, Thomas <i>Faculty: Automotive Services</i> A.A.S. - Ferris State University B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1991
Hackmann, Bruce <i>Faculty: Humanities</i> B.A. - Eastern Michigan University M.A. - Eastern Michigan University	1999		

Personnel

Herrera, Terri <i>Faculty: Culinary Arts and Hospitality Management</i> B.A. - Siena Height College M.S. - Eastern Michigan University	2002	James, Monique <i>Director of Lifelong Learning</i> B.A. - Grand Valley State University M.S.W. - University of Michigan	2009
Hesterly, Veda <i>Security Patrol Officer</i>	2009	Jenkins, Joyce <i>Faculty: Business Office Systems</i> B.S. - Michigan State University M.L.S. - Eastern Michigan University Certificate - California State Hayward	1998
Hill, Colleen <i>Web Designer I</i> B.F.A. - College for Creative Studies	2010		
Hill, Patricia <i>Faculty: Physical Therapist Assistant Program</i> B.S. - University of Michigan M.A. - University of Michigan	2005	Jett, Sukanya J. <i>Assistant Director of Enrollment Services</i> A.A. - Cottey Junior College B.A. - Radford University M.S.A. - Central Michigan University	1992
Hong, Ji-Hee <i>Research Associate</i>	2006	Ji, Shiping <i>Database Administrator</i> B.S. - Eastern Michigan University Certified Database Administrator- Oracle7.3 Certified Database Administrator- Oracle8	1999
Hosier, Deborah <i>Student Accounting Manager</i> B.B.A. - Cleary College	2000		
Hoth, Bradley <i>Professional Services Personnel: Vocational Technology</i> A.A. - Henry Ford Community College B.A. - Michigan State University M.A. - Eastern Michigan University	1987	Johnson, Charles <i>Faculty: Humanities</i> B.A. - Oakland University M.A. - Michigan State University Ph.D. - Michigan State University	1998
Howard, Nancy <i>Continuing Education Program Manager</i> A.A. - Niagara County Community College B.S. - Buffalo State College M.S. - Buffalo State College Ed. Sp. - University of Missouri-Columbia	2001	Johnson, Darrin <i>Recruitment & Employment Specialist</i> M.A. - Eastern Michigan University	2009
Hughes, Patrick <i>Director of Network and Communications</i> A.S. - Henry Ford Community College B.S. - Madonna College	1998	Johnson, Kenneth <i>Record Drawings Coordinator</i> A.D. - Washtenaw Community College A.D. - Western Michigan University	2006
Hunt, Nicholas <i>Helpdesk Specialist</i>	2010	Johnston, Mark <i>Faculty: Business/Accounting</i> B.B.A. - Eastern Michigan University M.S. - Walsh College	1990
Hunter, Shana <i>Financial Aid Specialist</i>	2010	Jordan, Cole L. <i>Counselor: Counseling, Career Planning and Placement</i> A.D. - Washtenaw Community College B.A. - Wayne State University M.A. - Eastern Michigan University	1978
Hurns, Kimberly <i>Faculty: Business</i> B.B.A. - Eastern Michigan University M.B.A. - Loyola University	2003		
Jackson, Jennifer <i>Faculty: Communications</i> B.A. - Concordia University M.S. - Eastern Michigan University	2002	Jorgensen, Melanie <i>Safety Compliance Manager</i> B.A. - University of Michigan OSHA Specialist Certification - Occupational Health and Safety	2005
Jackson, Lawrence <i>Director of Public Service Training</i> B.S. - Wayne State University M.S. - Michigan State University Certificate - State of Michigan	1998	Kapp, George <i>Faculty: Physical Sciences</i> A.D. - Washtenaw Community College B.S.E. - University of Michigan	1970
Jacobs, Sherrie <i>Campus Safety and Security Dispatcher Supervisor</i> Certificate – Continuum Configuration for Security Controls	2005	Kay II, Glenn <i>Faculty: Welding</i> A.D. - Washtenaw Community College B.B.M. - Cleary College	2009

Keck, Melissa <i>Faculty: Nursing</i> B.S.N - Madonna University M.S.N. - Madonna University M.S.B.A. - Madonna University	2006	Krantz, Carrie <i>Faculty: English / Writing</i> B.S. - Edinboro University of Pennsylvania M.A. - Bowling Green State University	1992
Keller, Laurel <i>UA Distance Learning Administrator</i> B.A. - Michigan State University	2002	LaHote, Randy <i>Faculty: Social Sciences</i> B.A. - University of Toledo M.A. - University of Toledo	1992
Kennedy, Bethany <i>Director of Access Services</i> B.S. - Eastern Michigan University M.L.I.S. - Wayne State University	2007	LaPointe, Cheryl <i>Compensation Specialist</i> A.A. - Monroe County Community College B.A. - Spring Arbor University PHR Certificate - Society for Human Resource Management	2003
Kerr, John <i>Faculty: Social Sciences</i> B.S.Ed. - Central Michigan University M.A. - Western Michigan University M.A. - Western Michigan University	1993	Lauchu, Ricardo <i>Instructional Designer II</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2008
Kier, G. Daniel <i>Faculty: Digital Media Arts</i> B.A. - Michigan State University M.A. - Eastern Michigan University	2001	Lawrence, John <i>Faculty: Performing Arts</i>	2003
Kilgore, Robert <i>Instructional Lab Assistant: Electricity/Electronics</i> A.S - Washtenaw Community College	2002	Lee, Michael N. <i>Business Division Computer Labs Coordinator</i> A.A. - Washtenaw Community College	1998
King, Linda <i>Director of Workforce Development & Community Services</i> B.A. - University of Michigan M.A. - University of Michigan	1998	Levitt-Phillips, Hava <i>Faculty: English / Writing</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2010
King, Michael <i>Faculty: Mathematics</i> B.A. - Western Michigan University M.Ed. - Wayne State University	2002	Lewis, James <i>Faculty: Electricity/Electronics</i> B.S. - Southern Illinois University M.A. - Eastern Michigan University CISSP, CISA, CCNA, CCAI, CEH, CCE Computer Systems Technology - Keesler School of Applied Aerospace Science Graduate Certificate - Oregon State University - Computer Forensics	2000
Kish, Glenn <i>Systems Analyst III</i> B.B.A. - University of Toledo	2003	Lindemann, Cristy <i>Faculty: Construction Technology Programs</i> B.S. - Eastern Michigan University	2006
Kissel, Julie <i>Faculty: English / Writing</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	2004	Lippens, Joan <i>Faculty: Academic Skills</i> B.A. - Queen's University, Kingston B.Ed - Queen's University, Kingston M.A. - Eastern Michigan University	1993
Knox, Thomas <i>Infrastructure Technician</i> A.A.S - Washtenaw Community College	2003	Lowing, Robert <i>Faculty: Auto Body</i> Certificate - State of Michigan	2009
Komarmy Jaffe, Tracy L. <i>Faculty: Performing Arts</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1993	Lu, Yin <i>Faculty: Mathematics</i> B.S. - National Taiwan University M.S. - National Taiwan Normal University Ph.D. - State University of New York, Buffalo	1994
Kontry, Michael <i>Faculty: HVACR</i>	2010	Lutz, Geoffrey A. <i>Systems Analyst III</i> B.S. - University of Michigan	1986
Kostner, Karen <i>Continuing Education Program Manager: Community Education</i> B.A. - Queens College M.L.S. - Queens College	2010		

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Mack, Dale <i>Instructional Lab Assistant: HVACR</i>	2009	McPherson, Paul D. <i>Faculty: Culinary Arts and Hospitality Management</i> B.A. - Madonna College M.S.A. - Central Michigan University Certificate - American Culinary Federation	1990
Malnar, Scott <i>Faculty: Auto Body</i> A.A.S. - Ferris State University A.A.S. - Washtenaw Community College	2009	Metz, Brad <i>Faculty: Biology</i> B.S. - Eastern Michigan University	2009
Manoukian, Lisa <i>Faculty: Mathematics</i> B.S. - University of Michigan - Dearborn M.A. - Oakland University	2006	Mihaly, Christine <i>Director of Compensation and Benefits</i> B.S. - Indiana University of Pennsylvania PHR Certificate - Society for Human Resource Management	2003
Mansour, Khaled <i>Faculty: Computer Information Systems</i> B.S. - Yarmouk University M.S. - Western Michigan University	2000	Miller, Jean <i>Faculty: English / Writing</i> B.A. - Marygrove College M.A. - University of Tulsa	1989
Marbury, Nichole <i>Information Systems Training and Support Specialist</i> B.A. - Davenport University	2010	Mikkelson, Shawn <i>Purchasing & Budget Analyst</i> Certificate - Washtenaw Community College	2004
Marinkovski, Elizabeth <i>Human Resource Management Specialist</i> A.D. - Washtenaw Community College A.D. - Washtenaw Community College B.A. - Eastern Michigan University C.H.R.S. - Certified Human Resource Specialist Certificates - Washtenaw Community College	1999	Mohrlock, Kenneth <i>Treasury Manager</i> B.A. - Ferris State University	2010
Martin, Lynn <i>Controller</i> B.B.A. - University of Notre Dame C.P.A. - State of Michigan	2008	Moore, Harriette <i>Faculty: Behavioral Sciences</i> B.A. - Tuskegee University M.A. - Loyola University - Chicago	2002
McCarthy, Sandra <i>Librarian: Learning Resource Center</i> B.A. - Wayne State University M.L.S. - Wayne State University M.A. - University of Detroit Mercy	1999	Morningstar, Justin <i>Instructional Lab Assistant: Auto Services</i>	2008
McClure, Carrie <i>Financial Aid Coordinator</i> B.A. - Michigan State University B.S. - Eastern Michigan University	2008	Morris, Aveia <i>Tech Prep Articulation Coordinator</i> B.A. - Metropolitan State University M.P.A. - University of Michigan, Dearborn M.A. - University of Michigan, Dearborn	2002
McCracken, Alexandra <i>MPOD Coordinator</i> A.D. - Washtenaw Community College B.B.A. - University of Michigan, Flint	1999	Mosquera, Jason <i>Instructional Lab Assistant: Auto Body</i>	2009
McGee, Eugene <i>Security Patrol Officer</i>	2007	Mourad, Roger <i>Director of Institutional Research</i> B.A. - University of Michigan M.S. - University of Michigan J.D. - University of Michigan Ph.D. - University of Michigan	1996
McGuire, Belinda G. <i>Faculty: Drafting</i> A.S. - Monroe County Community College B.F.A. - Eastern Michigan University M.Ed. - University of Toledo	2000	Mullalond, Mary <i>Faculty: English / Writing</i> B.A. - University of Portland M.A. - Simmons College	2010
	2006		
	1988	Naylor, Michael L. <i>Faculty: Performing Arts</i> B.M. - University of Miami M.M. - University of Miami M.A. - University of Michigan Ph.D. - University of Michigan	1994

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Nelson, Lisa <i>Curriculum Analyst</i> B.A. - Marygrove College	2002	Parker, Karen J. <i>Accounting Manager</i> A.D. - Washtenaw Community College B.B.A. - Eastern Michigan University	1989
Nelson, Warren <i>Campus Events and Media Production Coordinator</i> B.S. - University of Michigan	2008	Peck, Joshua P. <i>IT Support Specialist</i> A.D. - Washtenaw Community College	1996
Nelson, William H. <i>Faculty: Radiography</i> A.D. - Washtenaw Community College B.S. - Western Michigan University M.A. - University of Michigan	1992	Penird, Thomas <i>Faculty: Industrial Technology</i> A.T.S. - Washtenaw Community College B.S. - Eastern Michigan University	2000
Neuman, Jodi <i>Clinical Instructor: Dental</i> A.A.S. - Washtenaw Community College Certificate - Washtenaw Community College CDA - Dental Assisting National Board RDA - Michigan Board of Dentistry	2009	Penner, Charles A. <i>Regional Director of MI Small Business Development Center</i> B.A. - Hampshire College M.P.P.M. - Yale University	2002
Norris, Kristy <i>Faculty: Behavioral Sciences</i> B.A. - Western Kentucky University M. A. - Western Kentucky University	2007	Perez, Laura <i>Faculty: Mathematics</i> B.S. - Bowling Green State University M.A. - Bowling Green State University	1993
Norwood, Mimi Y. <i>Faculty: Behavioral Sciences</i> A.D. - Washtenaw Community College B.S. - Wayne State University M.S.W. - University of Michigan M.A. - Morehead State University O'Neil, Michele 2010 <i>FlexEd Program Manager</i> B.B.Ed. - Eastern Michigan University M.S. - Eastern Michigan University Certified Internet App. Developer, Oracle Developer Release 6/61 - Oracle Corp.	1993	Perkins, Thornton <i>Faculty: Social Sciences</i> B.A. - Wayne State University M.A. - California State University - Los Angeles	2002
Orbits, Elizabeth <i>Student Resources/Women's Center Manager</i> 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	2001	Petty, Dale <i>Faculty: Electricity/Electronics</i> B.S.E.E. - State University of New York at Buffalo M.S.C.E. - Case Western Reserve	1994
Ortega, Maria <i>Faculty: Behavioral Sciences</i> B.S. - Central Michigan University M.A. - Michigan State University	1992	Phillips, Robert <i>Interim Electronic Records Manager</i> A.D. - Washtenaw Community College	1998
Ortiz, Joe <i>Instructional Lab Assistant: Auto Body/Collision Repair</i>	2006	Phillips, Taghreed <i>Information Technology Support Specialist</i> B.A. - Al-Mustansiriya University	2002
Painter, Corinne <i>Faculty: Humanities/Philosophy</i> A.D. - Bellevue Community College B.A. - Seattle University M.A. - Ohio University Ph.D. - Loyola University	2006	Pickel, Larry <i>Continuing Education Program Manager: Business</i> B.A. - University of Michigan M.A. - University of Michigan	2005
		Pinnamaneni, Jagadeesh <i>Systems Analyst II</i> B.A. - Nagarjuna University, India B.S. - University of Michigan	1999
		Pirooz, Azadeh <i>Accountant</i> B.B.A. - Eastern Michigan University	2010
		Pobursky, Joel <i>Campus Safety and Security Supervisor</i> A.D. - Washtenaw Community College B.R.E. - Midwestern Baptist College EMT Certificate - State of Michigan	1991

Personnel

Politi, Sharyl <i>Faculty: Culinary Arts and Hospitality</i> A.D. - Oakland Community College	2010	Roberts, Melina <i>Faculty: Nursing</i> B.S.N. - University of Michigan M.S.N. - Eastern Michigan University R.N. - State of Michigan	2010
Popovich, James <i>Faculty: Industrial Technology</i> B.S. - LeTourneau College M.S. - Ferris State University	1999	Rombes, Lisa <i>Faculty: Mathematics</i> B.S.Ed. - Bowling Green State University M.Ed. - Penn State University	2002
Poslaiko, Karen <i>Instructional Lab Assistant: Life Sciences</i>	2004	Roof, Rex <i>Unix Administrator</i> A.D. - Washtenaw Community College	2000
Pullins, Les <i>Faculty: HVAC</i> 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	2003	Roque, Francisco <i>Unix Administrator</i>	1999
Quail, Michael E. <i>Faculty: Mathematics</i> B.A. - Wayne State University M.A. - Eastern Michigan University M.S.W. - University of Michigan	1994	Rumsey, Krissa <i>Corporate Giving/Grant Writer Administrator</i> B.A. - Concordia University M.S. - University of Michigan	2003
Rader, Rosemary <i>Faculty: Physical Sciences</i> B.S. - University of Wisconsin-Oshkosh Ph.D. - Purdue University	1994	Rush, Joseph <i>Faculty: Social Sciences</i> B.A. - Pennsylvania State University M.A. - University of St. Andrews - Scotland Ph.D. - University of Oregon	2002
Redondo, Juan C. <i>Faculty: Foreign Languages</i> M.A. - University Complutense - Madrid M.A. - University of California at Berkeley M.A. - University of Wisconsin	1994	Salminen, April <i>Security Patrol Officer</i>	2010
Reichert, William <i>Faculty: Electricity/Electronics</i> B.S. - Purdue University	2002	Salter, Vickie <i>Faculty: Nursing</i> 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	1999
Remaley, Dana <i>Systems Analyst III</i> B.S. - University of Michigan	2003	Scheffler, Amanda <i>Faculty: Welding</i> A.D. - Washtenaw Community College	2010
Remsen, I.B. <i>Faculty: Humanities</i> B.A. - Antioch College	2010	Schultz, Gary L. <i>Faculty: Industrial Technology</i> A.D. - Washtenaw Community College B.S. - Eastern Michigan University M.S. - Eastern Michigan University	1984
Rinke, John <i>Director of Support Services</i> B.S.Ed. - Central Michigan University M.A. - Michigan State University Ed.S. - Central Michigan University Ed.D. - Western Michigan University	1992	Schuster, Alicia <i>Coordinator Scholarship and Alumni</i> B.S. - Eastern Michigan University	2007
Rivers, Lynn <i>Faculty: Social Sciences</i> B.A. - University of Michigan J.D. - Wayne State University	2004	Schwab, Tracy <i>Faculty: Physical Sciences</i> B.S. - Walsh University Ph.D. - Wayne State University	2007
Robinson, Todd <i>Building Maintenance Manager</i> A.A.S. - Washtenaw Community College B.S. - Eastern Michigan University	1996	Scott, Kathleen <i>Librarian: Learning Resources</i> B.A. - University of Iowa M.A. - University of Iowa	1971

Sepac, Diana <i>Director of Evening and Extension Services</i> A.A. - Oakland Community College B.S. - Michigan State University M.S. - Eastern Michigan University	2008	Springstubbe, Patrick <i>Web Programmer II</i> B.S. - Lawrence Technological University	2007
Shelton, Eleanor <i>Community Relations Manager</i> B.A. - Michigan State University M.A. - Eastern Michigan University	2005	Stadtfeld, Kathleen A. <i>Director of Educational Services</i> B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1982
Shepherd, Kimberly <i>Faculty: English</i> B.A. - Michigan State University M.A.T. - Oakland University Ph.D. - Oakland University	2002	Stafford, Kathryn <i>Student Services Information Officer</i> A.A. - Kellogg Community College B.A. - University of Michigan M.B.A. - Michigan State University	2001
Shier, David <i>Faculty: Life Sciences</i> B.S. - Cornell University Ph.D. - University of Michigan	1990	Stokley, Catherine <i>Security Patrol Officer</i> A.A. - Washtenaw Community College B.A. - University of Michigan	2008
Shoemaker, Jeffrey <i>Campus Safety and Security Supervisor</i> A.A.S. - Ferris State University C.E.R.T. – Community Emergency Response Team	2005	Stornello, Dina <i>Faculty/Program Director of Pharmacy Technology</i> B.S. - Ferris State University Ph.D. - Ferris State University	2003
Shuldin, Julia <i>Network Administrator</i> B.S. - Dnepropetrovsk St. University, Ukraine M.S. - Lawrence Tech University	2001	Strayer, Ross <i>Faculty: Life Sciences</i> B.S. - Eastern Michigan University M.S. - Eastern Michigan University	1989
Shute, Michael <i>Faculty: Motorcycle Service</i> Certificate - Harley Davidson University	2007	Stuck, Marla E. <i>Employment Manager</i> A.D. - Stautzenberger College A.D. - Stautzenberger College B.A. - Cleary College Graduate Certificates - Eastern Michigan University M.S. - Eastern Michigan University S.P.H.R. - Senior Professional Human Resources	2006
Skufis, James <i>Clinical Instructor: Radiography</i> A.D. - Washtenaw Community College B.A. - Eastern Michigan University	2006	Talley, Dana L. <i>Benefit Specialist</i>	1993
Smillie, Catherine <i>Executive Director of Public Relations and Marketing</i> B.A. - University of Michigan M.A. - University of Michigan	2001	Tanguay, Julie <i>Senior Graphic Designer</i> B.A. - College for Creative Studies	1994
Sobbry, William (Gary) <i>Faculty: Automotive Body Repair</i> Mastery Certificate: Auto Repair Washtenaw Community College	2003	Taylor, Daniel R. <i>Public Computing Coordinator</i> A.A. - Washtenaw Community College B.S. - Eastern Michigan University M.L.S. - Eastern Michigan University Graduate Certificates - Eastern Michigan University Microsoft Certified Desktop Support Technician Apple Certified Technical Coordinator 10.4, 10.6	2000
Sparklin, Claire <i>Faculty: Humanities</i> M.A. - Wayne State University	2010	Tew, Bonnie E. <i>Faculty: Humanities</i> A.A. - Kellogg Community College B.S. - Eastern Michigan University M.A. - Eastern Michigan University	1994
Stark, Rene <i>Faculty: Nursing</i> B.S.N. - Spring Arbor University M.S.N. - Indiana Wesleyan University	2010	Thoburn, Elisabeth <i>Faculty: Humanities</i> B.A. - University of Michigan M.A. - University of Michigan	1995
Sprague, Kristina <i>Faculty: Dental</i> B.S. - Central Michigan University C.D.A. - Dental Assisting National Board R.D.A. - Michigan Board of Dentistry	2003		

Personnel

Thomas, Martin <i>Campus Services Manager</i>	1975	VanderVeen, Sister Judith <i>Faculty: Nursing</i>	1976
Thompson, Emily <i>Faculty: Life Sciences</i> B.A. - Swarthmore College M.S. - Yale University M.Phil. - Yale University Ph.D. - Yale University	2009	S.A. - Wayne State University S.A. - University of Michigan Diploma - Mercy Central School of Nursing R.N. - State of Michigan B.S.N. - Mercy College of Detroit M.A. - University of Michigan	
Tom, Kimberly <i>Director of User Support Services</i> A.D. - Washtenaw Community College B.A. - University of Michigan	1988	VanMarter, Kristy <i>Lead Program Specialist Learning Support Services</i> B.B.A. - Cleary University	1994
Townsend, Henry <i>Faculty: Public Service Careers</i> B.A. - University of Michigan, Flint M.A. - Eastern Michigan University	1991	VanWagnen, Randy <i>Faculty: Visual Arts 3D Animation</i> A.S. - Full Sail Real World Education B.A. - Michigan State University	2007
Trame, John <i>Faculty: Electricity / Electronics</i> B.S. - University of Houston M.S. - University of Houston Sp.A. - Eastern Michigan University	1989	Veasey, Lisa K. <i>Faculty: English / Writing</i> B.A. - Eastern Michigan University M.L.S. - Eastern Michigan University	1999
Tran, Michael D. <i>IT Support Specialist</i> B.B.A. - Eastern Michigan University	1998	Velarde, Gloria A. <i>Faculty: Nursing</i> B.S.N. - Eastern Michigan University M.S.N. - Wayne State University	1990
Trapp, Lori J. <i>Director of Financial Aid</i> B.A. - Michigan State University M.A. - Eastern Michigan University Graduate Certificate - Eastern Michigan University	1996	Wahab, Hanan A. <i>Faculty: Mathematics</i> M.S. - Michigan State University M.S. - Michigan State University	2000
Travis, Susan <i>Counselor: Health Programs</i> B.A. - Concordia College M.A. - Eastern Michigan University L.P.C. - State of Michigan	2000	Walsh, Ruth Anne <i>Faculty: Public Service Careers</i> B.A. - University of Toledo J.D. - University of Toledo	1987
Troiano, Christopher <i>Instructional Lab Assistant: Culinary Arts</i> A.A.S. - Washtenaw Community College A.A. - Washtenaw Community College Certificate - Washtenaw Community College	2009	Warsinske, Thomas G. <i>Lead Database Administrator</i> B.S. - University of Michigan B.S. - Eastern Michigan University	1998
Truhn, Bonnie <i>Adult Transitions Manager</i> B.A. - Hillsdale College M.A. - Eastern Michigan University	2010	Waskin, David <i>Faculty: English / Writing</i> B.A. - University of Michigan M.A. - University of Miami	2003
Tuccinardi, Sandro <i>Professional Service Personnel: Counseling, Career Planning and Placement</i>	2007	Wasserman, Donna <i>Faculty: Social Sciences</i> B.A. - Hamilton College M.A. - Georgetown University Ph.D. - University of Michigan	2002
Turelli, Diane <i>Faculty: Mathematics</i> B.S. - Purdue University M.A. - Purdue University	2001	Webel, Ashley <i>Instructional Lab Assistant: Welding</i> A.D. - Washtenaw Community College	2010
Vaduva, Cristina <i>New Student Orientation Manager</i> B.A. - University of Michigan M.A. - Bowling Green State University	2010	Weber, Kathleen <i>Faculty / Program Director of Dental Assisting</i> B.A.S. - Siena Heights University C.D.A. - Dental Assisting National Board R.D.A. - Michigan Board of Dentistry	2002

Werthmann, Donald <i>Faculty: Digital Media Arts</i> B.F.A. - Wayne State University M.A. - Wayne State University	2000	Wooten, David <i>Faculty: Biology</i> A.D. - Macomb Community College B.S. - Central Michigan University M.S. - Central Michigan University	2006
Westcott, Richard <i>Grounds Maintenance Manager</i>	1984	Worrell, Sandra M. <i>Student Services Advisor: Employment Services</i> B.S. - New York State University M.Ed. - Northeastern University	1998
Wiederhold, Holly <i>Landscape Planner and Master Gardner</i> B.S. - Ball State University	2004	Wurster, Allen J. <i>Testing Center Technician</i> A.D. - Washtenaw Community College	1995
Wildfong, Dave <i>Professional Services Personnel: Employment Services</i> B.S. - Eastern Michigan University M.P.A. - Eastern Michigan University	2006	Young, Colette <i>Faculty: Business</i> B.A. - Michigan State University M.A. - Michigan State University S.P.H.R. Certificate - Senior Professional Human Resources	1987
Wilkins, Barry L. <i>Building Services Manager</i> A.D. - Washtenaw Community College	1982	Young, Joseph <i>Instructional Lab Assistant: Welding</i> A.D. - Washtenaw Community College	2010
Wilkinson, Michael <i>Web Multimedia Developer II</i> Certificate - Washtenaw Community College Certificate - Specs Howard School of Broadcasting	2007	Zacharias, Matthew <i>Faculty: Digital Video</i> B.A. - University of Michigan	2006
Williams, Aaron <i>IT Support Specialist</i>	2006	Zielinski, Michael <i>Facilities Project Coordinator II</i>	2007
Williams, James <i>Instructional Lab Assistant: Motorcycle</i> Certificate - American Motorcycle Instruction Certificate - State of Michigan	2009	Zimmerman, Thomas <i>Faculty: English / Writing</i> B.A. - University of Iowa M.A. - University of Iowa	2002
Williams, Linda <i>Financial Systems and Accounts Payable Manager</i> A.D. - Washtenaw Community College B.B.A. - Eastern Michigan University M.S. - Eastern Michigan University	1987		
Williams, Traci <i>Web Designer II</i> B.F.A. - Eastern Michigan University	2006		
Williamson, Anthony <i>Continuing Education Program Manager: Harriet Street</i> A.A. - Washtenaw Community College B.S. - Eastern Michigan University M.S.W. - Eastern Michigan University	2002		
Willmann, Kristine <i>Faculty: Digital Media Arts</i> B.A. - Michigan State University	1999		
Wilson, Elaine <i>Faculty: Humanities</i> B.A. - Washington University M.A. - Yale University	2003		
Withrow, Jason <i>Faculty: Internet Professional</i> B.A. - Capital University M.A. - University of Akron M.S.I. - University of Michigan	2001		

Program Advisory Committees

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 2011 - 2012

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Liz Galimore, Saline High School
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Physical Therapist Assistant Advisory Committee

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Police Academy Advisory Committee

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Barnett Jones, Ann Arbor Police Department
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Brian Mackie, Washtenaw County Prosecuting Attorney
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Ed Toth, Chelsea Police Department
Henry Townsend, Washtenaw Community College
Amy Walker, Ypsilanti Police Department

Radiography Advisory Committee

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Nancy Blanton, Chelsea Community Hospital
Gypsy Boone, Saline Community Hospital
Kee Chang, Veterans Administration Hospital
Cindy Corredine, St. Mary Mercy Hospital
Jody Dennison, Wyandotte General Hospital
Karen Hartman, St. Joseph Mercy Hospital
Sheila Law, St. Joseph Mercy Hospital
Kelly McFall, Saline Community Hospital
Bernadette Nareski, Wyandotte General Hospital
William Nelson, Washtenaw Community Hospital
Dianna Redman, Monroe Mercy Memorial Hospital
James Skufis, Washtenaw Community College
Lisa Springsteen, St. Joseph Mercy Livingston Hospital
Dorene Stegink, University of Michigan Health Service
Jamie Stichler, Oakwood Annapolis Hospital
Athalous Tinsley, St. Joseph Mercy Hospital
Stacy VanRiper, Chelsea Community Hospital

Technical Writing Advisory Committee

Nancy Allen, Eastern Michigan University
Steve Benninghoff, Eastern Michigan University
Ann Blakeslee, Eastern Michigan University
Maryann Bowen, Independent Contractor
Jenn Burchill, Arbor Networks
Andrea Frazier, Thomson Reuters
Erin Moulton, Independent Contractor
Sally Paul, Thomson Reuters
Deborah Stacy, Thomson Reuters
Lisa Veasey, Washtenaw Community College



Glossary



Glossary

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 Forgiveness

May be available for students whose past performance has prevented them from graduating or being accepted into another school or program, but only if their grade point average has improved to 2.0 or above in recent years.

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 audit ("AU") grade is issued and posted to the transcript.

College Work-Study

An award of employment (an opportunity to work for paid wages on the campus) given to a student based on financial need.

Continuing Education Units (CEUs)

A nationally recognized recording device for substantive non-credit learning experiences and are based on hours of participation in an organized continuing education experience under 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

WCC has three semesters per year: Fall, Winter, and Spring/Summer. A student's course load is the total number of credit hours a student is officially registered for in a given semester, regardless of the length of the session within the 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 65 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 usually need to be repaid.

Identity Confirmation

Federal legislation requires applicants and students to provide a current, government-issued photo ID as proof of identity.

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 email 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 or vice versa.

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 numbered 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 Website.

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 his/her 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.



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Campus Telephone/Office Directory*

General Information (phone menu)	973-3300
Academic Skills Center GM 307	973-3301
Admissions SC 2nd floor	973-3542
Adult Transitions Counseling, SC 2nd floor	677-5006
Alumni Association SC 306	973-3705
Blackboard Support GM 225	477-8724
Bookstore SC 1st floor	973-3594
Brighton Center 7878 Brighton Road, Brighton	810-299-4195
Campus Safety/Security PO 124	973-3411/3502
Cashier SC 2nd floor	973-3485
Center for Instructional Design and Technology GM 234	973-3390
Children's Center FE	973-3538
College On Demand Help Desk GM 225/227	477-8724
Computer Commons GM 2nd Floor	973-3420
Continuing Education Services ML 104	677-5060
Counseling and Career Planning SC 2nd floor	677-5102
Curriculum and Assessment SC 247	973-3706
Dean of Admissions and Student Life SC 203	973-3540
Dean of Business and Computer Technologies BE 100	973-3724
Dean of Continuing Ed. and Community Service ML 104	973-3630
Dean of Distance Learning LA 234	973-3390
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	973-3443
Dental Clinic OE 110	973-3332
Distance Learning Information GM 230	477-8903
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	810-626-2152
Health & Fitness Center HFC Building	975-9950
International Admissions SC 2nd floor	973-3542
International Student Center SC 206A	677-5158
Learning Support Services, Tutoring, Disability Services LA 104	973-3342
Library GM 1st floor	973-3429
Lost and Found PO 124	973-3411
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	677-5105
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
Writing Center LA 355	973-3647

*All telephone numbers are in the 734 area code, unless noted otherwise.

