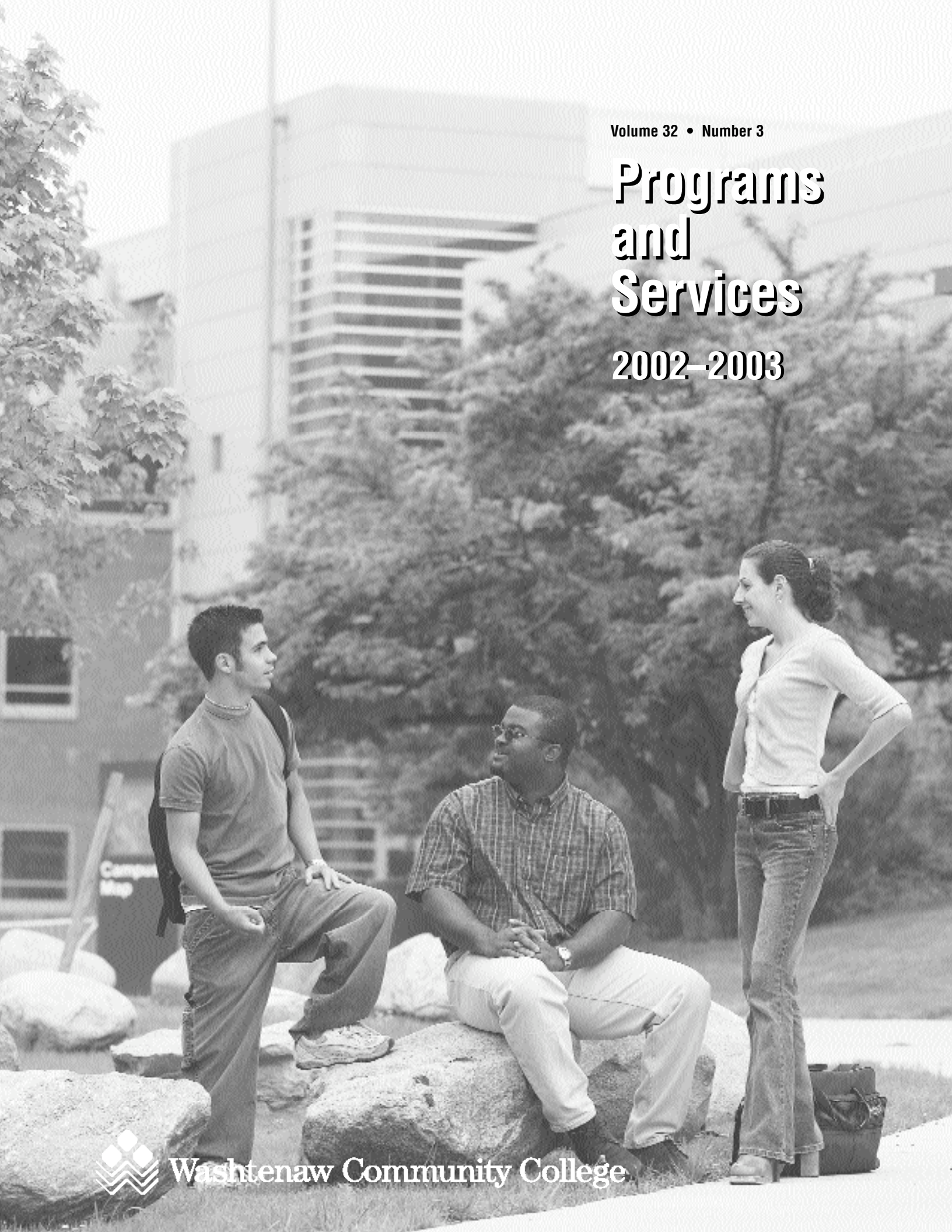
Volume 32 • Number 3

Programs and Services

2002–2003



Washtenaw Community College

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This document is for informational purposes only and is not to be construed as a binding offer or contract between WCC and the student. This document was prepared on June 10, 2002 and is subject to change without notice.

The Washtenaw Community College Bulletin is issued four times a year in February, June, August, and October by:

WASHTENAW COMMUNITY COLLEGE, 4800 E. HURON RIVER DRIVE , P.O. BOX D-1, ANN ARBOR MI 48106-1610.

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World Wide Web Site Address

See this location for the College Bulletin and the Academic Class Schedule information:

http://www.wccnet.org

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2002-2003 Academic Calendar

Fall Semester 2001

September 4 .....Classes Begin

November 22-23 .....Thanksgiving Recess (no classes)

December 21 .....Fall Classes End

Winter Semester 2002

January 14 .....Classes Begin

January 21 .....Martin Luther King Holiday (no classes)

April 29 .....Winter Classes End

Spring/Summer Semester 2002

May 6 .....Classes Begin

May 27, 28 .....Memorial Day (no classes)

June 28 .....$7^{1/2}$ Week Spring Classes End

July 3-4 .....Independence Day Holiday (no classes)

July 18 .....10 Week Spring Classes End

August 22 .....Spring/Summer Classes End

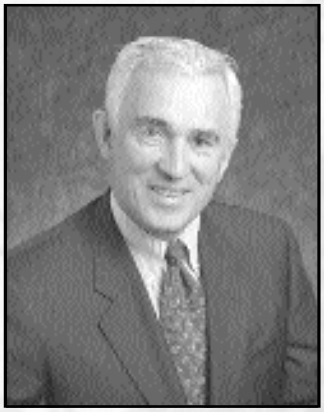
Summer Session 2002

June 28 .....$7^{1/2}$ Week Summer Classes Begin

July 3-4 .....Independence Day Holiday (no classes)

August 22 .....$7^{1/2}$ Week Summer Classes End

Greetings From President Larry L. Whitworth



On behalf of Washtenaw Community faculty and staff, welcome to the College. Now in its 36th year, the College offers its students an educational experience of the highest quality. If you are a current student, congratulations on your decision to invest in your future by accessing the appropriate education to advance your career opportunities. If you are not currently enrolled let me encourage you to consider WCC and its excellent associate degree and certificate programs.

Washtenaw Community College offers each student an educational experience designed to meet his/her future plans. Its comprehensive mission includes broad-based occupational programs, non-credit courses and classes that prepare students for academic transfer. Nearly 100 programs of study are available at WCC. I encourage you to take the time to review this catalog; in these listings, you will discover the courses and programs that will give you the means for expanding your future opportunities.

In addition to providing academic preparation, the College offers its students an array of services such as financial aid, personal and professional counseling, academic skills improvement and tutorial services. Whatever your specific needs are, I encourage you to seek out and use the comprehensive services available to all WCC students.

All our current thinking suggests that the future is wide open for "knowledge" workers. Continuous education is the key to becoming and remaining a "knowledge" worker. But it is not only your economic viability that is enhanced by continuing your education. The quality of other important aspects of your life also will be enriched by your experience as a WCC student. Classes in the arts and humanities can expand your understanding of the beauty of our world; exposure to the social sciences can help build the intellectual foundations required to develop an appreciation of the richness of human diversity; and courses in the natural sciences will enhance your analytic and problem-solving skills.

Your future and the future of those depending on you will be greatly affected by your decision to continue your education. Let me encourage you to decide today to become a dedicated life-long learner.

Sincerely,

Larry Whitworth

President

Statement of Mission and Values

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.

Board of Trustees

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Vice Chair

Mary Schroer
Secretary

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Treasurer

Richard W. Bailey
Ph.D., Trustee

Diana McKnight-Morton
Trustee

Richard J. Landau
Ph.D., Trustee

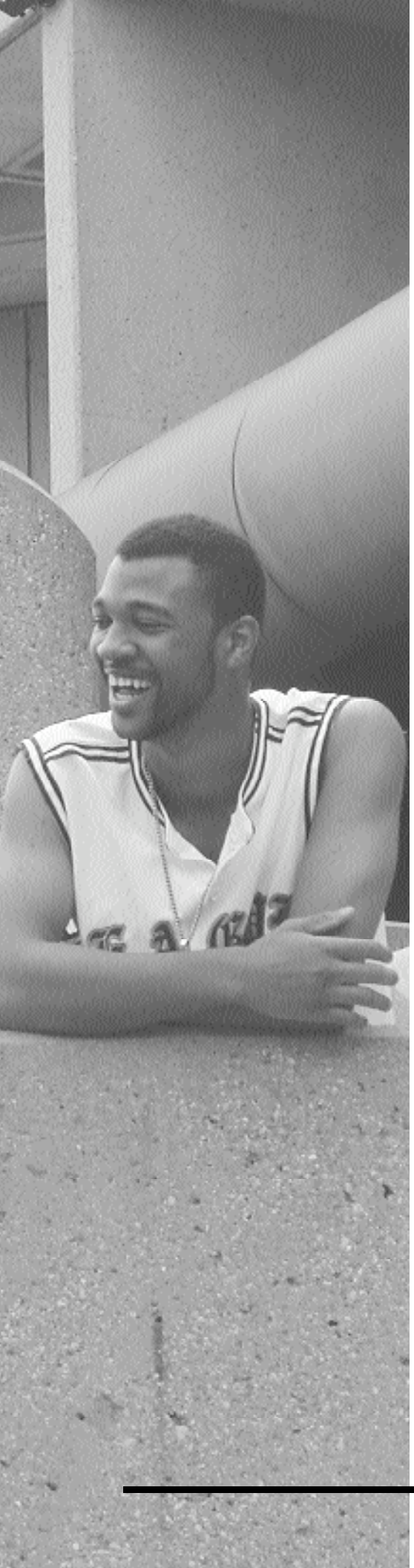
Campus Telephone/ Office Directory

all area codes are 734 unless otherwise noted

Academic Skills Center	LA 109	973-3301
Admissions	SC 221	973-3543
Adult Transitions	GM 300	677-5006
Alumni Association	SC 207	973-3492
Apprenticeship and Trade Related Programs	OE 170	973-3533
Bookstore	SC 142	973-3593
Business and Industry Services	ML 104	677-5008
Campus Safety/Security	PO 124	973-3411/3502
Cashier	SC 2nd floor	973-3568
Children's Center	FE	973-3538
College Placement	SC 201	677-5155/973-3421
Computer Commons	GM 2nd Floor	973-3420
Continuing Education Services	ML 104	677-5027
Counseling, Career Planning Counseling & Placement	SC 201	677-5124/5102
Curriculum/Articulation Services	SC 234	973-3706
Customized Training	ML 104	677-5008
Dean of Academic Placement, counseling and Support Services	SC 201	677-5003
Dean of Business & Computer Technology	BE 100	973-3724
Dean of Continuing Ed. and Com. Serv.	ML 104	973-3630
Dean of Enrollment Services	SC 221	973-3540
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 and Behavioral Sciences	LA 148	973-3722
Dental Clinic	OE 110	973-3337
Distance Learning Information	SC 353	477-8556
Evening /Weekend/Extension Services	LA 176	677-5030
Executive Vice President for Instruction	SC 235	973-3488
Financial Aid	SC 223	973-3523
Learning Resource Center (library)	GM 1st floor	973-3429
Lost and Found	PO	973-3502
Math Center	LA 255	973-3392
Northern Center 7878 Brighton Road, Brighton		(810) 229-1419 Ext.241
Public Service Training Program	ML 106	677-5024
Registration	SC 221	973-3543
Student Connection	SC 2nd floor	973-3543
Student Activities	SC 112	973-3500
Student Resources and Women's Center	SC 227	973-5105
Student Records	SC 221	973-3548
Switchboard (General Information)	SC 225 A	973-3300
Testing Center	LA 101	973-3634
Veteran's Benefits	SC 221	973-3545
Western Center, 7920 Jackson Rd. Ann Arbor		(734) 424-0182/0183
Writing Center	LA 355	973-3647

Building Abbreviations

BE — Business Education Building
FE — Family Education Building
GM — Gunder Myran Building
LA — Liberal Arts/Sciences Building
ML — Morris Lawrence Building
OE — Occupational Education Building
PO — Plant Operations
SC — Student Center Building
TI — Technical and Industrial Building



Accreditations/Approvals

Institutional Accreditation:

Washtenaw Community College is Accredited by

The Higher Learning Commission of
the North Central Association
30 North LaSalle Street, Suite 2400
Chicago, Illinois 60602-2504
(312) 263-0456; (800) 621-7440
www.ncacihe.org

Program Accreditations and Approvals:

Business Programs Accredited by

The Association of Collegiate Business Schools and Programs
7007 College Blvd., suite 420
Overland Park, Kansas 66211
(913) 339-9356

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

The Accrediting Commission of
The American Culinary Federation
10 San Bartola Drive
St. Augustine, FL 32086
(800) 624-9458
www.acf.chefs.org

Dental Assisting Certificate Certified by

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

Internet Professional Certificate and AAS Degree Accredited by

The AIP Certification and Accreditation Council of The Association of Internet Professionals
2629 Main Street, #136
Santa Monica, California 90405
(866) 247-9700
www. acac-accreditation.org

Law Enforcement Basic Preservice Program Approved by

The Michigan Commission on Law Enforcement Standards
7426 North Canal Road
Lansing, Michigan 48913
(517) 322-6525
www.coles-online.org

Registered Nursing AAS Degree Accredited by

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

Approved by

State of Michigan Department of Consumer & Industry Services
Bureau of Health Services
Board of Nursing
P.O. 30670
Lansing, MI 48909-8170
(517) 335-0918

Pharmacy Technology Certificate Accredited by

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

Radiography AAS Degree Accredited by

Joint Review Committee on Education in Radiologic Technology
20 North Wacker Drive, Suite 900
Chicago, Illinois 60606-2901
(312) 704-5300

General Information

General Information

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, more than 17,800 students are enrolled annually in credit courses and an additional 8,600 are enrolled in non-credit offerings each year.

Profile of Washtenaw Community College

WCC schedules courses on a semester calendar, and enrolled 11,254 credit students for the Fall 2001 semester. The college employs approximately 185 full-time faculty and more than 450 part-time faculty throughout the academic year. The College offers about 100 credit programs of study in business, health, public services, humanities and social sciences, math and natural sciences, and technology. More than 60 percent of the students enrolled at WCC pursue a degree, while others take courses for personal interest or to obtain or upgrade job skills. Each year, college certificates and associate degrees are awarded to more than 1,000 students.

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 Executive Vice President for Instruction; the Vice President for Finance and Administration; the Associate Vice President for Facilities, Development and Operations; the Associate Vice President for Student Services; Associate Vice President of Human Resource Managemnt; and Associate Vice President of Development.

Decisions are developed with input from a variety of constituents. The college maintains several standing committees, and as needed, the administration creates ad hoc committees to explore solutions to specific questions. The College functions within a mission that seeks to promote student, community and staff success.

Current Facilities

Today, the WCC main campus includes four buildings exclusively dedicated to instructional activities: the Liberal Arts and Sciences Building, the Occupational Education Building, the Technical and Industrial Building, and the Business Education Building. The Gunder Myran Building houses the Library, the computer commons, classrooms, and instructional space for Visual Arts programs. The Student Center Building houses student support services, a student cafeteria and dining room, college bookstore, and administrative offices. The college also has a child care facility for children of WCC students and staff, which is called the Family Education Building.

The Morris Lawrence Building includes classrooms; an auditorium; exhibition space; conference and special event space, instructional space for art, drama, music, the police academy and public service training, business industry and contract training.

Part-time Faculty Commons

The Part-time Faculty Commons is a one-stop resource center designed to promote student-to-instructor interaction and provide instructional support for part-time faculty. It is conveniently located on the first floor of the Liberal Arts and Sciences Building (LA 178-180). Within the Commons, part-time instructors consult with students, prepare for class at computerized workstations, and access copying and word processing services. It also serves as a communications hub with message services and campus mailboxes. The Commons provides an inviting atmosphere and gathering place for part-time faculty to consult with colleagues on instructional matters, as well as access to resources on effective teaching and learning practices. It offers extended day, evening, and weekend hours. For more information, contact: Teaching and Learning Support Services or visit our website at http://www.wccnet.org/dept/eels/fac/ptfac.htm.

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. The Technical Education Department offers coursework to fulfill apprenticeship requirements. In addition, the Department of Evening, Weekend, and Extension Services offers off-campus credit courses, and on-line instruction.

Programs of Study

Career Degree and Certificate Programs

Automotive Technologies

Auto Restoration and Hot Rod Fabrication Certificate (CFAR)
Automotive Mechanics Certificate (CFAM)
Collision Repair Certificate (CFCR)
Power Equipment Technology (CTPEQ)

Business

Accounting Certificate (CTACC)
Accounting AAS Degree (APACCT)
Business Sales and Marketing Certificate (CTBSLM)
E-Commerce Certificate (CTECOM)
Human Resource Management Certificate (CTHRSC)
Management Supervision Advanced Certificate (CVMGTA)
Management Supervision AAS Degree (APMGTM)
Small Business and Entrepreneurship Certificate (CTSBEA)

Business Office

Administrative Assistant Technology Certificate (CFAATC)
Administrative Assistant Technology AAS Degree (APAATD)
Options
Administrative Assistant (ADMA)
Medical Administrative Assistant (MEDA)
Computer Software Applications Certificate (CTCSSC)
Medical Administrative Assistant Technology Certificate (CFMATC)
Medical Transcription Certificate (CTMTR)

Computer Studies

Internet
Internet Professional Certificate (CFINPC)
Internet Professional AAS Degree (APINPD)
Options
Design (DES)
Technical (TEC)
Programming
Business Computer Programming AAS Degree (APBCP)
Object Oriented Programming Certificate (CTOOPC)
Oracle Database Administration - Post Associate Certificate (CPODA)
Oracle Developer Post Associate Certificate (CPORAC)
Web Database Developer Post Associate Certificate (CPWDD)
Web Programming Tools Certificate (CTWPTC)
Windows C++/Java Developer Post Associate Certificate (CPWNCJ)
Windows Visual Basic Developer Advanced Certificate (CVWNVB)
Systems
Computer Networking Academy I Advanced Certificate (CVCNT)
Computer Networking Academy II Advanced Certificate (CVCNTA)
Computer Networking Operating Systems I Adv. Certificate (CVCNO)
Computer Networking Operating Systems II Adv. Certificate (CVCNOP)
Computer Networking AAS Degree (APCNTM)
Computer Systems Technology Certificate (CTCSTC)
Microcomputer System Support AAS Degree (APMSS)
Unix/Linux Systems Certificate (CTUNLN)

Construction and Building Trades

Architectural Technology Certificate (CTARCT)
Architectural Drafting AAS Degree (APAD)
Construction Management AA Degree (AACMG)
Construction Supervision AAS Degree (APCNSP)
Facility Management Administration Certificate (CTFMA)
Heating Ventilation and Air Conditioning Certificate (CTHVAC)
Industrial Training AAS Degree (APITRN)
Journeyperson Industrial Certificate (CFJPIC)
Journeyperson Industrial AAS Degree (APJPIM)
Residential Construction Technology Certificate (CTRCT)

Culinary Arts

Baking and Pastry Certificate (CFBAK)
Culinary Arts Certificate (CFCULC)
Culinary and Hospitality Management AAS Degree (APCULD)

Health

Dental Assisting Certificate (CFDAC)
Nursing Assistant Skills Certificate of Completion (CCNAST)
Nursing, Registered AAS Degree (APNURS)
Nursing Transfer AAS Degree (APNURT)
Pharmacy Technology Certificate (CTPHAR)
Radiography AAS Degree (APRAD)

Human Services

Child Development Certificate (CTCDA)
Child Care AAS Degree (APCC)
Criminal Justice (AACJ)
Criminal Justice-Law Enforcement AAS Degree (APCJLE)

Industrial and Engineering Technology

Computer Aided Drafting Certificate (CTCADC)
Computer Aided Drafting Advanced Certificate (CVCADA)
Computer Aided Drafting and Design AAS Degree (APCADD)
Fluid Power Advanced Certificate (CVFLPA)
Industrial Electronics Technology Certificate (CFIET)
Machine Tool Technology Advanced Certificate (CVMTTA)
Machine Tool Technology AAS Degree (APMTTM)
Manufacturing and Industrial Computing Certificate (CTMIC)
Mechanical Design Post Associate Certificate (CPMDES)
Mechanical/Manufacturing Engineering Technology AAS Degree (APMETT)

Numerical Control Programming Advanced Certificate (CVNCP)
Numerical Control Programming AAS Degree (APNCPM)
Robotic Technology AAS Degree (APROB)
Scientific and Technical Communication AAS Degree (APSTC)

Occupational Studies

Occupational Studies AAS Degree (APOST)

Visual Arts

Graphic Design Certificate (CFGDTC)
Graphic Design Technology-Design Option AAS Degree (APGDTD)
Graphic Design Technology-Illustration Option AAS Degree (APGDTI)
Basic Photographic Imaging Certificate (CTBPHO)
Photographic Technology AAS Degree (APPHOT)
Digital Video/Film Production (CFVID)

Welding

Welding Certificate (CTWLDC)
Welding Mechanics Advanced Certificate (CVWLDA)
Welding AAS Degree (APWLDT)

University Parallel Programs

Business (AABAS)
Computer Information Systems Transfer (AACIST)
Education, Elementary (AAELEM)
Education, Secondary (AASECO)
Electrical and Computer Engineering (ASECE)
General Studies in Liberal Arts (AAGSLA)
General Studies in Math and Natural Sciences (ASGSMS)

Human Services (AAHUST)

Humanities and Social Science (AAHSAA)

Concentrations

Behavioral Science Concentration (BEHS)
Communication Concentration (COMM)
Contemporary Jazz Concentration (CJAZ)
Dance Concentration (DANC)
Drama/Theatre Concentration (DRAM)
Fine Arts Concentration (FINA)
Foreign Language Concentration (FRLG)
Humanities Concentration (HUMA)
Musical Theatre Concentration (MUST)
Performing Arts Concentration (PERA)
Social Science Concentration (SOCS)
Writing and Literature Concentration (WRLT)

International Studies (AAINS)
Liberal Arts Honors Transfer -UM (AALAHT)
Math and Science (ASMSAS)

Concentrations

Biology/Pre-medicine Concentration (BMED)
Chemistry/Pre-medicine Concentration (CMED
Computer Science Concentration (COMS)
Mathematics Concentration (MATH)
Physics Concentration (PHYS)

Pre-Engineering Science Transfer (ASPET)

Options

Chemical and Materials Engineering (CME)
General Engineering (GEN)

Other Types of Programs

Adult Transitions

Adult Transitions is a community outreach program that assists students who need new skills for today's workforce. It includes counseling, skill building, and job education services. The program uses a step-by-step approach to help students move from their neighborhoods to WCC and on to the career paths of their choice. Scholarships and other forms of support, based on financial need, are available for students to enroll in WCC's short-term Certificate programs such as Accounting, Computer Software Applications, Residential Construction Technology, Business Sales and Marketing, Manufacturing and Industrial Computing, Nursing Assistant Skills, Medical Transcription and Child Development. These programs are described in more detail in the Curriculum Section of the Bulletin.

Adult Transitions also offers the Skill Building Program, which prepares students for the General Education Development (GED) test and/or the COMPASS test. The program uses an open-entry/open-exit model, with instruction tailored to the needs of individual students. Students may prepare to pass the GED test (high school equivalency test) and obtain a certificate of General Education Development or enter short credit certificate programs that will give them job skills for entering the workforce. The Skill Building program and GED testing are free of charge. Orientation for enrollment is available each week.

Construction Institute

The Construction Institute was established to meet the wide and varying needs of Southeastern Michigan employers in the broad areas of Construction. The Institute's mission is to provide broad-based construction education, training, and skill development programming objectives in the areas of:

- Credit programs for degree seeking students interested in entry-level career programming.
- Basic skills development programs for students pursuing non-traditional careers in construction industries, those seeking to improve their skills to compete more effectively for apprenticeships and others seeking to change careers.

- Credit programs for practicing professionals who have acquired technical training through labor and professional organizations and are seeking certificates or associate degrees to qualify for supervisory positions.
- Non-credit and continuing education programs designed to upgrade skills for practicing professionals involved in the broad area of construction.
- Credit programs for students who want to complete associate degrees and then transfer to four-year institutions to earn bachelor's degrees in construction.

Public Service Training and Police Academy

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

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

Trade Related Instruction/Apprenticeships

WCC representatives are available to assist in the development of apprenticeship and other employee training programs. Trade-related instruction can be provided for most apprenticeable trades with a college representative working directly with apprentices and sponsoring firms to meet the requirements. Apprenticeship training combines on-the-job training with related classroom instruction to ensure that apprentices master skills with confidence and precision. More than 300 occupational areas use apprenticeships to train workers. Individuals entering an apprenticeship program are hired in jobs for which vacancies exist. The Trade-Related Instruction program is approved by both the Bureau of Apprenticeship and Training and the Michigan State Department of Education.

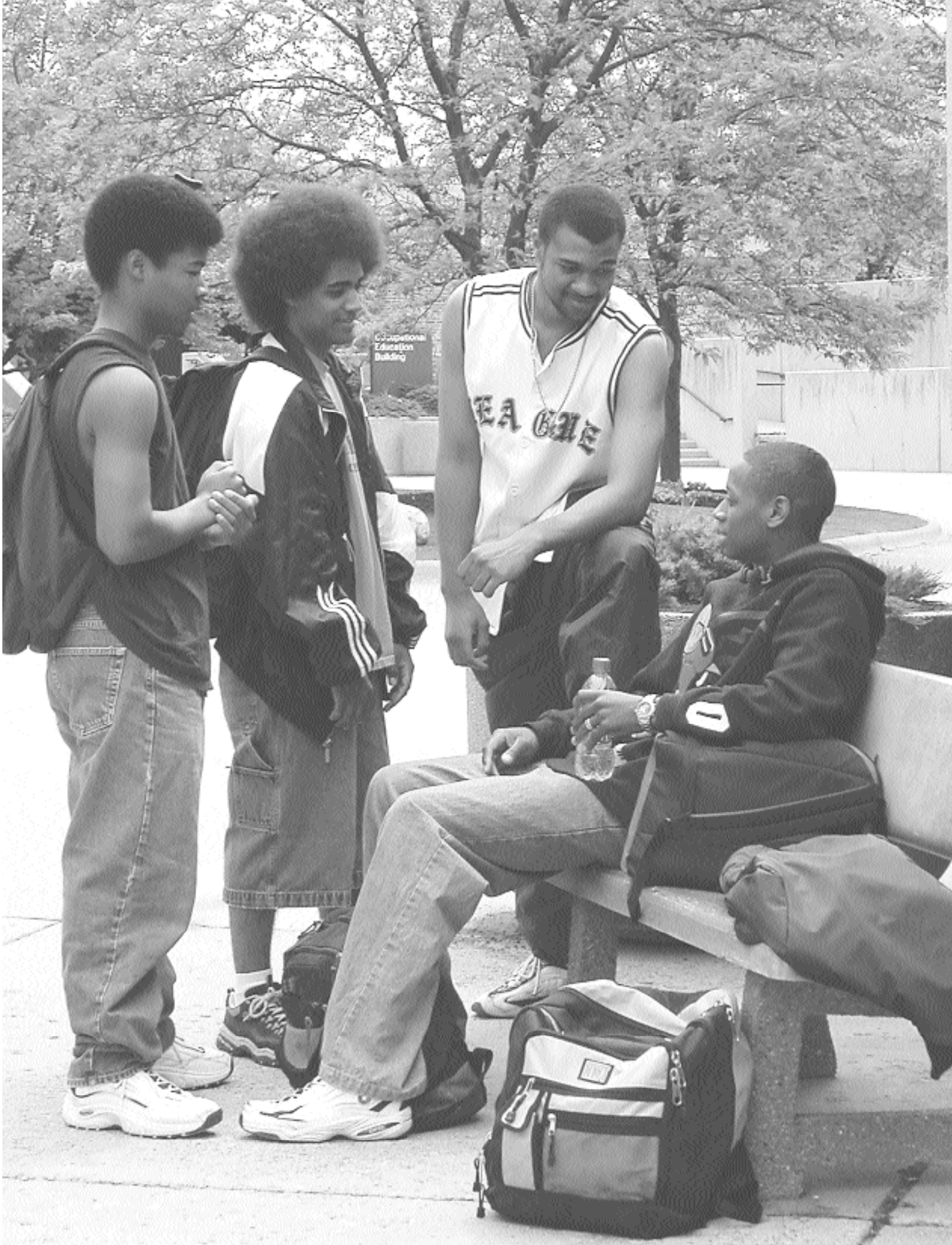
An individual pre-apprenticeship curriculum can be arranged to help individuals prepare for most apprenticeship entrance examinations. Placement in an apprenticeship program is at the mutual discretion of employers, employees, and organizations representing the involved skill trades and cannot be guaranteed.

Apprenticeship training may be offered in the following areas:

Automotive Mechanic
Carpenter/Cabinet Maker
Die Sinker
Diecast/Diemaker/Moldmaker
General Maintenance Mechanic
HVAC Services
Industrial Electrician
Industrial Hydraulic Mechanic
Industrial Truck Mechanic
Instrumentation and Pyrometry
Machine Repair
Machinist
Millwright
Model Maker
Plumber/Pipefitter
Tinsmith/Sheetmetal
Tool and Die
Toolmaker
Welder

Washtenaw Technical Middle College

WTMC is a technical high school chartered by Washtenaw Community College that operates on the WCC campus. Using the concepts of mastery learning, skill based evaluation, and a heavy emphasis on learning life management skills that support academic activity, WTMC challenges students to take control of their education and become learners. Students initially are placed in high school courses with academic content that prepares them for entry-level college courses. Students who receive academic certification as well as life management certification are jointly enrolled in core, entry-level college courses to complete their high school requirements. Within the first year, students select a WCC technical program in which to major, and they prepare an educational plan for their course of study. Graduates of WTMC have many options including going to work in their technical field, returning to WCC to complete an advanced certificate or degree, or transferring to a four-year college to earn a bachelor's degree.


Occupational
Education
Building

Admissions

Admissions

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, passed the GED examination, 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 curriculum. Under certain conditions, students may qualify for an exemption from the assessment. These exemptions are described under "Orientation and Entry Assessment" below. This policy has been developed in accordance with Federal Ability-to-Benefit Regulations, which require that the college demonstrate that each student it admits has the ability to benefit from their chosen educational program. Students under 18 years of age who are not high school graduates, may be admitted with the written recommendation of their high school principal or counselor and the approval of a parent or guardian unless they possess emancipated legal status, giving them full adult legal rights and responsibilities.

Admission to the college does not guarantee admission to programs, which have specific program entry requirements.

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

Admission to High-Demand Programs

When a program is identified by the administration as a high-demand program (more applicants than openings for an entering class), a staff committee will be formed by the executive vice president for instruction to select members of the class based on published criteria, including completion of prerequisites and readiness for program success. 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 leading to certification or licensure, as well as other WCC certificate and degree programs. In cases where enrollment in a particular program is in high demand, the following additional priorities will apply to those meeting individual program entry requirements:

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

Priority 2: Legal residents of counties adjacent to the college district.

Priority 3: Legal residents of all other counties in 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.

Admission Procedures

New Students

All new students taking credit classes are required to complete an admission application. New students, regardless of experience or educational background, are urged to meet with a counselor or advisor to learn about opportunities the college offers. Individual assessment in English, Math and Reading is required for appropriate program planning and course selection.

Orientation and Entry Assessment

Orientation sessions, scheduled prior to each semester, are required for new students. During these sessions, students will be provided an overview to the College including information on entry assessment, which measures their writing, math, and reading skills. Counselors and faculty advisors then assist students in selecting and scheduling courses. Orientation sessions are scheduled at a variety of times to accommodate the busy schedules of prospective students. Basic skills assessment can be taken after completing orientation.

Exemptions from Orientation and Entry Assessment are granted under one of the following circumstances only:

Exemptions from both orientation and basic skill assessment are granted if the student meets one of the following:

1. Student 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. Student provides official documentation of completion of a bachelor or graduate degree from an approved international English-speaking college or university.
3. Student is a Ford, General Motors, Chrysler, Visteon or other approved apprentice.
4. Student submits a valid guest student application from their home institution indicating that they are in good standing.

Exemption from basic skill assessment only is granted if you meet the following:

Student provides ACT, SAT, COMPASS or ASSET scores that meet WCC standards for competency in writing, reading and math. Submit scores directly from ACT, SAT, provide your original score report, or have the scores submitted on your official high school transcript.

Note: Some occupational programs have an additional screening process.

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

Re-admission of Former Students

Former students who have not registered for classes at the college for two years must reactivate their files at the Student Connection by completing an updated application form. Students reactivating their files are encouraged to see a counselor or advisor prior to registering for classes, or submit it online at www.wccnet.org. Individual assessment also may be recommended.

Dual Enrollment of High School Students

High school students, who are at least 15 years old and in tenth grade or higher, may enroll in classes for college credit that may be counted toward their high school diploma. Application for admission must be supported by the signature of the high school principal or counselor as well as the signature of a parent or legal guardian. Students under 18 years of age who have emancipated legal status do not need the signature of a parent.

Guest Students From Other Colleges

Students enrolled at other colleges and universities may attend WCC as guest students. This status is secured through completion of a Michigan Uniform Undergraduate Guest Application. This application can be obtained from the home institution and should be sent to the WCC Office of Admissions or dropped off in person at the Student Connection. A new guest application must be submitted each semester.

Transfer Students

Students transferring from other colleges follow the same procedure as new students. Those wishing to transfer credit from an accredited college or university may do so by requesting that an official transcript be sent to the Office of Student Records for evaluation. The coursework may be evaluated, at the student's request, after the student has successfully completed at least one credit at WCC. At the time coursework is evaluated, the student is notified of the transfer credit that will be accepted toward program requirements at WCC.

International Students (F-1 visa only)

International F-1 visa students may be admitted to Washtenaw Community College. Admission will be based on meeting the following requirements:

1. A completed WCC application for admission.
2. An original bank statement reflecting the student's ability to meet all tuition, fees, and living expenses while attending WCC. To find out the required amount in U.S. dollars, contact the International Student Admissions office either by phone (734-973-3315) or check the WCC website.
3. A notarized letter from the financial supporter must also be sent with the original bank statement, stating the money in the bank will be used for the student's tuition, books, living expenses, medical expenses, and all other expenses incurred by the student while studying at Washtenaw Community College. This letter must state the name of the person providing the support for the student, the relationship of the sponsor to the student, and the student's full legal name as it appears on the student's passport.
4. Original certified transcripts, in English, of all previous secondary and post-secondary schools attended by the student.
5. Proof of English language proficiency for admission to the regular curriculum requires a minimum score of:
   - 500 on the paper Test of English as a Foreign Language (TOEFL), or
   - 173 on the computer Test of English as a Foreign Language (TOEFL), or
   - 75% or better on the Michigan English Language Assessment Battery (MELAB)
   - Original test scores must be sent to WCC by the testing agency. (NOTE: WCC's TOEFL Indentification Number is 1935).

6. After arrival and before registering for classes, the student must purchase medical insurance with a repatriation clause. Failure to do so, or cancellation of the policy, will result in the student not being able to register for future semesters at WCC.
7. Upon arrival, the student must schedule an interview with International Student Admissions.
8. Upon arrival, the student must verify visa status, provide a copy of the I-94 card from the student's passport, and provide a copy of the applicant information from the inside of the passport.
9. A WCC orientation and assessment will be scheduled after arrival and prior to class registration.

For answers to specific questions about enrollment, contact International Student Admissions either by phone at (734) 973-3315 or by e-mail (f1@wccnet.org).

Students on an F-1 visa must enroll full-time and successfully complete at least 12 credit hours per semester toward graduation at WCC with a grade of C or better.

International Students (all visa classifications except F-1)

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

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

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

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

> Submit a completed application for admission with a copy of your passport (if applicable), appropriate documentation showing your status, and a driver's license or state identification to show where you currently reside.

Admission requirements for visa holders are as follows:

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

There are two orientation programs offered for new international students:

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

Emeritus Students

Individuals who are 65 years of age or older prior to the semester of enrollment and who reside within Washtenaw County may participate in the college's educational and cultural programs without tuition costs. However, these students must follow the general admission criteria of the college and pay the registration fee and mandatory course fees, if applicable, each semester. Emeritus students not paying tuition are registered for classes on a space available basis.

Health Occupation Students - Special Admission Requirements

Applicants to the health occupations (e.g. Nursing, Dental Assisting, Pharmacy Technology, and Radiography must meet specific admission requirements. Generally these are:

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

Residency

Aspects of Residency

1. The residency of minors (under 18) shall follow that of their parents or legal guardian. Exception: Students under 18 may qualify as in-district residents regardless of their parents' residence if they can provide sufficient evidence that they are independently supporting themselves and reside in the Washtenaw Community College district.
2. 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.
3. Students who are not residents of the district and are currently employed full-time in the district by an in-district company may pay in-district tuition rates at the time of registration by providing appropriate documentation of their employment from their company at the beginning of each semester before the eighth day of the semester. Such documentation should substantiate that the student is currently employed full-time and has been employed full-time for at least 30 days prior to the semester of enrollment. Spouse and dependents do not qualify for in-district rates. If such students attend the college without documentation from their company or industry, tuition rates are determined by their legal residency status.
4. Those students who are transferred to the county by the military must present appropriate documentation to qualify for immediate in-district residency.
5. Veterans whose induction address was within the college district who return to the college within six months after discharge will be classified as in-district students.
6. The student may petition the Office of Student Records to officially change residency status by supplying proof of residency within the college district for 30 days for out-district/country students (or six months for out-state students). Any residency change after the eighth day of the semester will be effective the next semester in attendance.

Residency Classifications

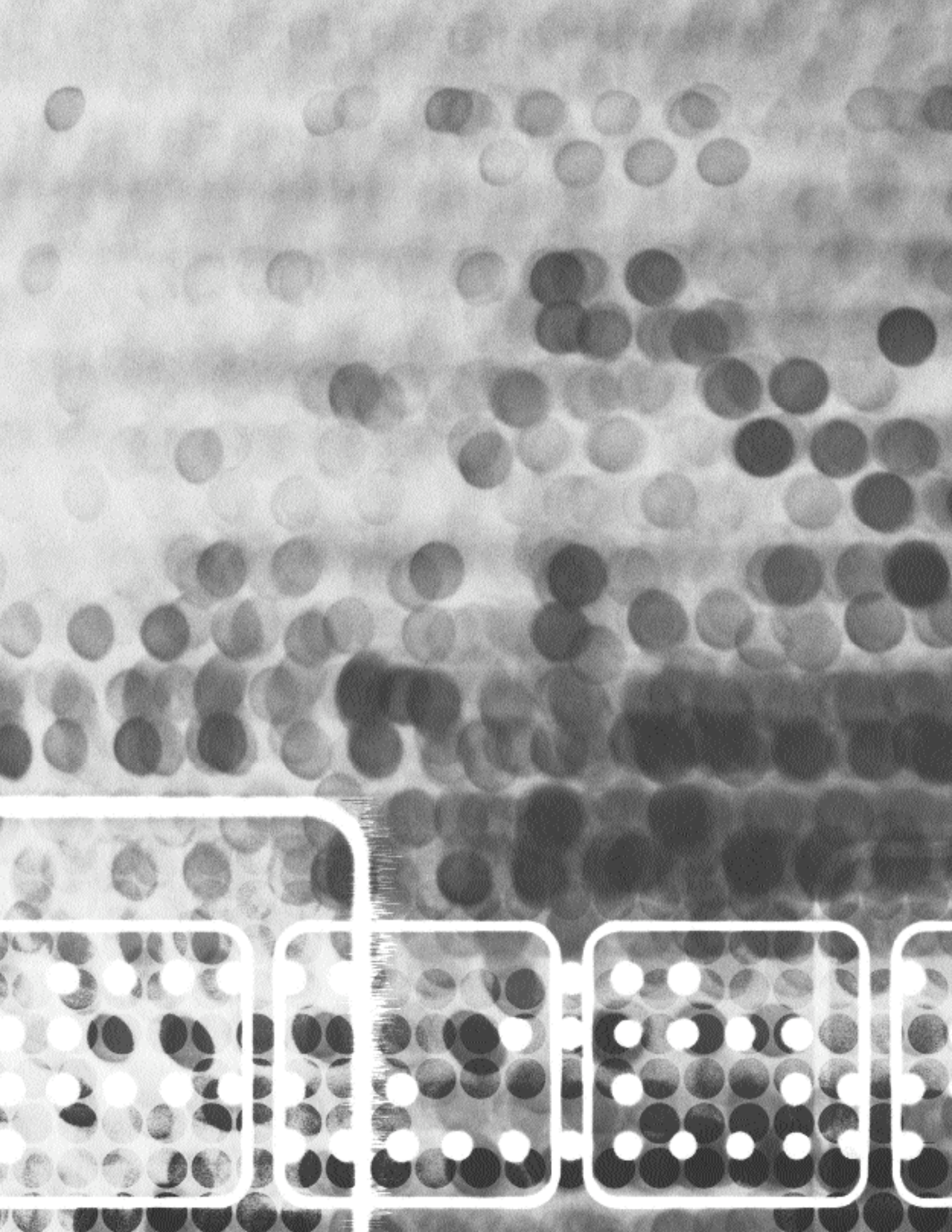
In-District Students:

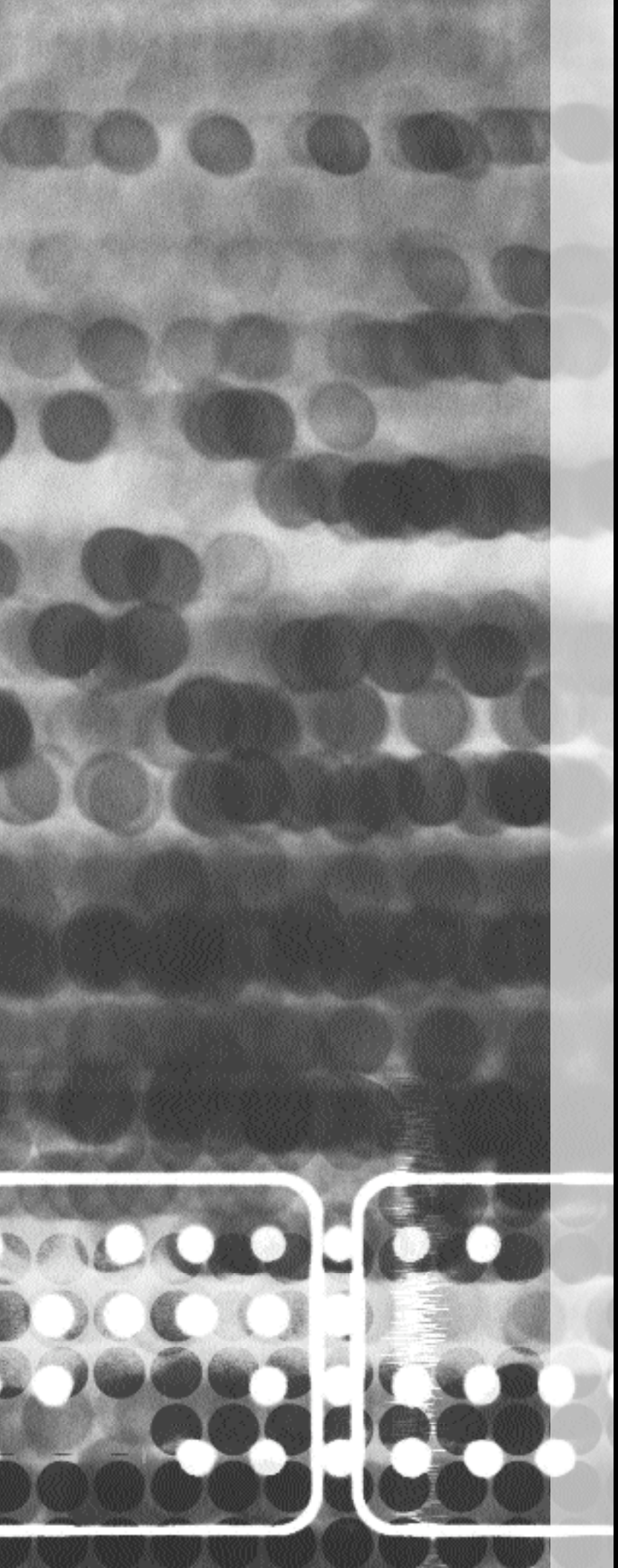
- Independent applicants who have resided in the WCC district for 30 days immediately prior to the semester of enrollment if previous residency was within Michigan.
- Applicants who live with a spouse who has resided in the WCC district for 30 days immediately prior to the semester of enrollment if previous residency was within Michigan.
- Applicants who live with and are a dependent of the parent or legal guardian who has resided in the WCC district for a minimum of 30 days, immediately prior to the semester of enrollment if previous residency was within Michigan.
- Applicants who have resided in the WCC district for six months immediately prior to the semester of enrollment if previous residency was outside of Michigan.

Out-District Students are applicants who do not meet the requirements of an in-district student, but who have been legal residents of the State of Michigan for at least six months.

Out-State Students are applicants who do not meet the requirements for an in-district or an out-district student and are U.S. citizens or have permanent resident status through the Immigration and Naturalization Service (INS).

Out-of-Country Students are applicants who are on a visa or whose permanent address is out of the country. Students on visas pay out-state/country tuition except those who may qualify for in-district tuition through their employers. In this case, the student must have full-time employment in the WCC district (see #3 under Aspects of Residency above).





Student Records

Student Records

Registration

Each semester the college publishes a class schedule, which 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. Students having difficulty meeting their financial obligations should contact the Office of Financial Aid.

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 signature of a counselor. Students on a (GPA) hold (Grade Point Average below 2.0), or foreign student (ESL) hold must have their schedule approved by a counselor or advisor before registering for courses.

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

Adding and Dropping Courses

A student may add or drop a class or change a section without an instructor's approval on a space-available basis prior to the start of the semester. After the start of the semester, students must have an instructor's signature for adding classes or changing sections. Students may not add a course after the add deadline specified in the semester class schedule. Students are encouraged to discuss changes, drops, and adds with their instructors or counselors. Students should retain copies of any transactions until final grades or refunds are received. Students are responsible for paying all appropriate tuition and fees for added courses.

Students are responsible for officially dropping courses they are no longer attending. If the drop occurs after the refund deadline for the course, the student is responsible for paying full tuition for the course. Courses dropped after the refund deadline will be listed on the student's transcript with a grade of "W". Students may withdraw from courses without instructor approval during the first forty percent of the course - approximately six weeks for a fifteen-week course. After this deadline, students must consult with their instructor, indicated by the instructor's signature on the drop/withdraw card, before submitting the card to the Student Connection located on the second floor of the Student Center Building.

Drop cards for a semester must be submitted to the Student Connection before the 100% drop deadline published in the schedule of courses for that semester. Students will receive a refund of 100 % of their tuition and instructional technology fees. Other fees are non-refundable. After the 100% deadline, students may withdraw (a "W" will appear on their transcript and no refund is given) up to the date published without an instructor's signature. After the deadline to withdraw with instructor's signature, students must petition for instructor approval to withdraw from the course.

Changing Sections

Students changing from one section to another of the same course must complete the process at the Student Connection. Students are added on a space available basis, and instructor approval is required after the start of the semester.

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.

Auditing a Course

Students who wish to audit a course must register and pay for that course following the established registration procedures. Students do not receive credit for the course; however, the course is included on the transcript with an "AU." Students may change from credit to audit status or vice versa through the first quarter of a course (four weeks for a 15-week course).

Transcripts/Final Grades

A permanent record of all courses, credits and grades earned by each student is kept in the Office of Student Records. Copies of transcripts are available to students upon request. 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. Final grade reports are mailed to a student's mailing address unless the student has a financial obligation to the college. Students may also review their grades and transcript via the Web for Student program on the College's website.

Veteran Students

Veteran Certification

All veterans receiving educational benefits must see the Veteran Services Technician before registering. Any drops or changes made by veteran students are to be reported to the Veteran Services Technician in the Office of Student Records immediately. Failure to do so may result in the delay of educational benefits.

New Students

Veterans and other eligible dependents receiving educational benefits under Chapters 30, 32, 34, 35 and 106, Title 38 U.S.C. who have never used their V.A. educational benefits and would like to make application for benefits should report to the Veteran Services Technician in the Office of Student Records prior to registering for classes. Students should bring certified copies of their DD-214, marriage license, and birth certificates of dependent children, if applicable. Students who have prior educational training must provide official transcripts with their application for benefits.

Transfer Students

Students who have previously received V.A. educational benefits at another school must complete V.A. Form 1995 (Change of Place of Training) and submit it to the Veteran Services Technician in the Student Records Office. The DD-214 and transcripts from colleges or universities where the student has completed previous training must accompany the application.

Previously Enrolled Veterans

All previously enrolled veterans should report to the Veteran Services Technician prior to registering to ensure proper credit. Students must turn in a completed certification form after registering for classes every semester to ensure the continuance of their benefits.

Credit for Formal Service School Experience

Credit is granted for formal service school training as recommended by the American Council on Education, through its Commission on Accreditation of Service School Experiences. For complete information contact the Veteran Services Technician in the Office of Student Records.

Standards for Receiving Educational Benefits

In compliance with the Department of Veteran Benefits, Circular 22-80-38, the college has developed standards of progress. Each veteran student must conform to these standards to be eligible for V.A. Educational Benefit Certification. Each veteran student must read, sign, and return the original copy of these standards to the Veteran Services Technician at each enrollment.

Financial Information

Financial Information

Tuition*

Residents of the College District ....$54.00 per credit hour
Non-Resident/In-State .....$81.00 per credit hour
Non-Resident/Out-State .....$104.00 per credit hour
Non-Resident/Out-Country .....$104.00 per credit hour

Fees*

Registration Fee (each semester) $23.00
Late Registration Fee $22.00
Student Photo ID (replacement only) $10.00
Instructional Technology Fee (per credit hour) $4.00
Credit by Exam Fee (per credit hour).....$10.00
Books and Supplies ..... **
Payment Plan (processing fee).....$25.00

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

** *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 $125 per semester for full-time students, but may be as high as $300 or more depending on course selections.*

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 parts-of-term of two or more weeks will be one calendar day for each week the course is scheduled to meet, e.g., fifteen days for fifteen week courses, ten days for ten week courses, etc.
2. 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.
3. 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.
4. The refund deadline does not apply to course section changes or to instructor approved course level changes processed within a part-of-term.
5. 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.
6. A full refund of tuition may be administratively granted upon official withdrawal of the student for the following extenuating circumstances during the first two thirds part-of-term/semester:
   a. Induction of the student into the U.S. or foreign Armed Services
   b. Death of a spouse, child, parent, or legal guardian of the student
   c. Death of the student
   d. Verifiable error on the part of the college
   e. Verifiable incapacity, illness, or injury which prevents the student from returning to school for at least four (4) weeks of the semester
7. All fees except the instructional technology fee are non-refundable.

No refund is made if withdrawal occurs after two-thirds of the part-of-term has transpired, regardless of circumstances.

FACTS Student Payment Plan

The WCC payment plan for students registered in credit classes is through FACTS Management Company. FACTS will electronically withdraw payments from the student's checking account, statement savings account, or MasterCard or Visa account. FACTS charges a $25 non-refundable enrollment fee each semester to participate. There is no credit search and students are not charged interest or finance fees on the unpaid balance. Students who have previously defaulted on the FACTS payment plan are not eligible to participate again. Applications and information may be found on the WCC web site or contact the Cashier Office on the second floor of the Student Activities building.

Financial Aid

WCC provides financial assistance to students in the form of scholarships, work-study employment, grants and loans. Several programs also have been developed to provide financial support to honors students and are awarded on the basis of student achievement or merit. For additional information about specific program requirements, contact the Office of Financial Aid 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 & Women's Center on the second floor of the Student Center Building or call (734) 677-5105.

Types of Aid

There are four major types of aid available:

- Scholarships awarded on the basis of achievement and do not need to be repaid.
- Grants awarded on the basis of need and do not need to be repaid.
- Employment requires work for paid wages. Includes the need based College Work-study Program. Student employment opportunities exist in many offices and areas on campus.
- Loans awarded on the basis of need and must be repaid once students leave college or do not continue in college on at least a half-time basis.

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

By federal regulation (ability to benefit), new and re-admit 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.

Assessment of Need

Once students' financial aid files are complete, the Financial Aid Office reviews the information in light of individual circumstances. After determining the expected family contribution, the staff then subtracts that amount from the cost to attend Washtenaw Community College. The difference is the student's financial aid need.

Application

Because the financial aid process can take several weeks to complete, the earlier you begin, the more likely it is that your application will be approved in time for registration. Obtain the following forms from the Office of Financial Aid as early as possible:

1. The Free Application for Federal Student Aid (FAFSA) must be completed and mailed in the envelope provided. When you receive your Student Aid Report from the processing center, bring it to the Office of Financial Aid for evaluation of your financial aid eligibility.
2. If you have attended other colleges and are transferring to WCC at mid-year, a financial aid transcript may be required. Contact the Office of Financial Aid, (734) 973-3523, for details.
3. Additional documentation of student and/or family resources may be required for evaluation of your application. Such documentation may include federal income tax returns.

After the federal processing center evaluates your financial status and sends the information electronically to the college, the Office of Financial Aid will review the information and notify you in writing of your eligibility for aid. Awards are made in June and July prior to the beginning of the fall semester. Students who wish maximum consideration for financial aid should have all applications in the Office of Financial Aid by the following dates:

Fall Semester .....June 1
Winter Semester .....November 1
Spring-Summer Semester .....February 1

Applications received after the above deadline dates are processed only as funding allows.

Academic Progress Criteria for Financial Aid

The academic progress policy of the Office of Financial Aid requires that all students receiving aid maintain a cumulative and semester grade point average of 2.0 or greater and complete 75 percent of their semester credits. Students failing to meet these minimum requirements are placed on probation and are allowed one additional semester to meet these requirements. While on probation, students who do not complete 75 percent of their courses with a cumulative grade point average of 2.0 or higher will be terminated from financial aid. Students who have financial aid terminated may still continue to attend classes using their own funds for payment. Students who meet the satisfactory academic policy regulations will have their financial aid restored.

Students who have attended Washtenaw Community College in the past and have not completed 75 percent or more of their course work and do not have a semester and cumulative grade point average of 2.0 or higher will be awarded financial aid on a probationary status. If they do not maintain the above-mentioned satisfactory academic regulations they will be terminated from aid.

Students who have attended Washtenaw Community College and have attempted 90 or more credit hours cannot receive Title IV funds.

Students who have transfer credits from another college will have these credits applied to their record and will be subject to the above 90 credit hour regulations.

Students who have been terminated from Financial Aid for any of the above listed reasons, and feel that they have mitigating circumstances should write a letter of appeal to the Financial Aid Committee. The Committee will decide if students should be granted an additional semester. If students are granted an additional semester they must complete 75 percent or more of their course work with a semester and cumulative grade point average of 2.0 or higher or they will be terminated from financial aid.

Financial Aid Refund Policy

Students who receive any Title IV funding owe a pro-rata refund if they withdraw prior to completing 60 percent of the semester. By federal regulations, pro-rata refunds must be returned in the following order:

1. Federal SLS Loan
2. Unsubsidized Federal Stafford Loan
3. Subsidized Federal Stafford Loan
4. Federal Plus Loan
5. Federal Direct Stafford Loan
6. Federal Direct Loan
7. Federal Perkins Loan
8. Federal Pell Grant
9. Federal SEOG
10. Other Title IV funds
11. Other federal sources
12. State, private, or College aid
13. Student

Distribution

Most students who have been awarded and approved for financial aid prior to the start of a semester have their tuition paid at the time they register. Students will be allowed to purchase books through the College bookstore. They will receive the balance of their financial aid by about the 3rd week of the semester.

Student Employment on Campus

In addition to the various student financial aid programs previously mentioned, there are a variety of campus employment opportunities for students who would like to gain meaningful work experience while receiving a competitive wage rate. These opportunities can be realized through the College Work-Study Program and other employment available to students on campus. Contact the College Placement Office for further details.

WCC Foundation

Thanks to contributions from individuals and corporations, the WCC Foundation provides a "safety net" of scholarship funding for students. Annually, over 500 scholarships are awarded.

To apply for a scholarship, log on to www.wccnet.org, continue to click onto the financial aid link. This leads you to the scholarship link and the WCC Foundation

application. Fill out only one application and submit it to the Financial Aid office. A Scholarship Committee reviews all applications and assigns specific and appropriate scholarships to those who become recipients.

WCC Foundation scholarship criteria include:

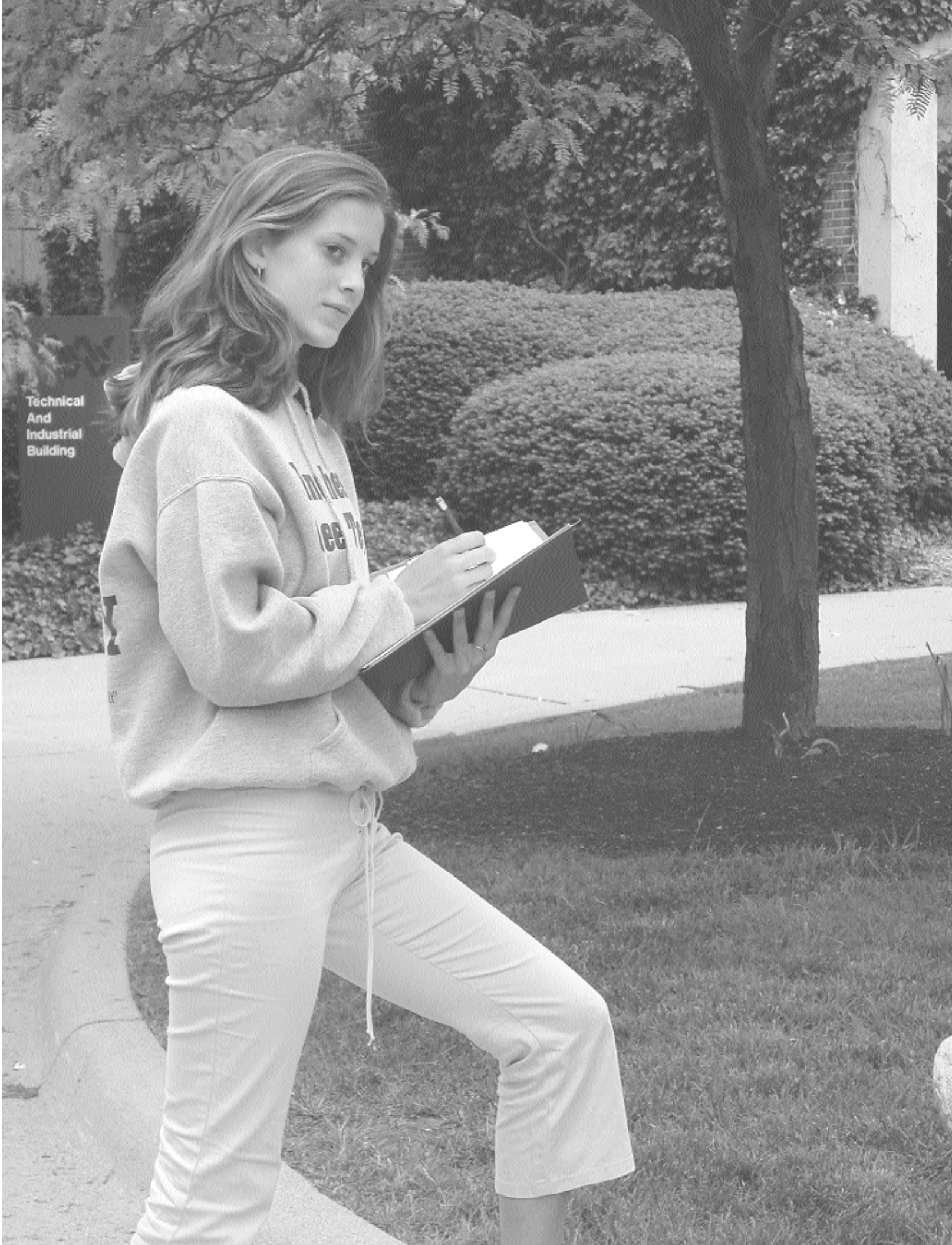
- a minimum 2.0 grade point average
- a statement of U.S. citizenship or of eligible non-citizenship
- a record of having attended WCC for at least one semester

Application forms are also available in the WCC Foundation Office (SC207), the Financial Aid Office (SC 223), or at the Student Resource and Women's Center (SC 227), all located on the second floor of the Student Center Building or call (734) 973-3665 for more information.

Application deadlines:

- April 15th -priority deadline for Fall/Winter Semesters
- June 25th-final deadline for Fall/Winter Semesters
- October 15th-deadline for Winter Semesters

* Spring-Summer scholarships may or may not be awarded.


Technical
And
Industrial
Building

Student Support Services

Student Support Services

Alumni Association

The college stays in contact with former students through the Alumni Association. All former students are eligible to join. The office is located in SC 207; the phone number is (734) 973-3492.

Bookstore

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

Fall and Winter semesters:

Monday-Thursday 8:30 a.m. to 6:30 p.m.,

Friday 8:30 a.m. to 3:00 p.m., and

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

Spring/Summer semester:

Monday-Thursday 8:30 a.m. to 5:00 p.m.,

Friday 8:30 a.m. to 1:00 p.m.

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

Book Buyback

Students can sell back books any time during the semester provided there is a need at that time for the book.

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, postage stamps, and AATA bus tokens. Special orders are welcome. The WCC Bookstore accepts Visa, MasterCard, Discover, American Express, and personal checks with proper identification.

Look for software at reduced educational prices on the web at findmybookstore.com

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

Children's Center/Day Care Facility

WCC provides a licensed child care facility in the Family Education Building for children of WCC students, staff, and faculty. The Center is accredited by the National Association for the Education of Young Children and offers a comprehensive child development program, which emphasizes the child's identity and feelings of self-worth. Children are supported in strengthening learning in key areas through active learning, discovery, and problem solving.

The staff is fully trained in early childhood education and development. Additional care is also offered by work-study students and foster grandparents. Practicum students in the child care professional program provide additional new experiences for children. Check with the Children's Center for details on age limitations, enrollment, attendance requirements, fees, hours of operation, meals, and other information. Visitors are always welcome; no appointment is needed.

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.-7 p.m. Monday through Thursday, 8 a.m. to 5 p.m. Friday, and 9 a.m. to noon on Saturday.

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 your 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 the Counseling Office 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 College). 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 Appendix A.

Career Counseling

Counselors are available to help students make career changes and career decisions. Counselors may suggest career testing and/or use of information in the Counseling and Career Planning Center located on the 2nd floor of the Student Center Building Room 201.

Personal Counseling

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

Learning Support Services

The college provides tutoring for all students in credit classes. Students with disabilities can take their entry assessment test—COMPASS in the LSS office. Academic advising, and arranging accommodations is provided for students with documented disabilities. Other services include individualized sessions with tutors, interpreters for the deaf, readers for the blind, specialized technology and other assistance to help students successfully complete their programs. Services are also available for students who are economically disadvantaged or who have limited English-speaking proficiency. In order to provide timely services, requests should be made in advance. For additional information please contact Learning Support Services, located on the 1st floor of the Liberal Arts Building, Room 104. Hours of service are 9 a.m. - 9 p.m. Monday - Thursday and 9 a.m. - 4 p.m. on Friday. For more information call (734) 973-3342, TDD (734) 973-3635.

Learning Disability Assessment is provided by a Learning Disability Specialist who provides diagnostic testing for WCC students who suspect they may have a learning disability (LD) and who have not been tested previously, or whose testing is outdated. In addition to providing cognitive and achievement testing to diagnose and document a learning disability, the LD specialist also provides consultation for students with other learning difficulties and makes recommendations for learning/study strategies, recommends educational accommodations appropriate to specific learning disabilities, and provides information recommendations, or appropriate referrals for other conditions, for example, ADHD/ADD (attention deficit/hyperactivity disorder), that may interfere with learning. These services are offered free of charge to currently registered WCC students. The goals of LD assessment and services are to identify learning problems and educational needs, assist in arranging appropriate remediation programs and accommodations, and help all students develop the confidence and means to reach their potential. Testing is arranged by appointment. For more information, please call Learning Support Services at (734) 973-3342.

Job Placement/Career Planning/College Transfer Services

The college offers comprehensive services to assist students in career advising, career preparation, job placement and transfer. Counseling/Career Planning is located on the second floor of the Student Center Building in Rooms 227 and 201. College Placement is located in the Student Center Building, Room 201.

The Counseling, Career Planning, and Placement Department has a career resources library with numerous publications on career related topics, videotapes and handouts. Other resources available for individual student use are the interactive computerized career guidance programs, Discover and MOIS.

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

Current transfer agreements with other area colleges and universities are maintained in the transfer area, 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 colleges' websites.

The Michigan Transfer Initiative for Emerging Scholars (M-TIES) program is located in the Counseling, Career and Placement Department (SC 201). This program was developed jointly by WCC and the University of Michigan with the goal of helping underrepresented minority students to attain their educational goals of transferring to U of M. Please contact the M-TIES office at (477-8519) for additional information.

Office of Student Development and Activities

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

Club Sports

Club Sports are open to both men and women who wish to participate on recreational teams. Club sports currently include baseball, basketball, cross country, hockey, golf, soccer, softball and volleyball. Some activity is starting almost every month. The College's practice field (North Athletic Field) with softball diamond, soccer field, and sand volleyball court is located across Huron River Drive from the main campus. Contact the Club Sports office located in the Student Center Building, Room 117, or call (734) 973-3720 for information and sign-up.

Student Clubs and Organizations

Student clubs and organizations are established by students to offer a venue 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 may contact the Director of Student Activities for information about how to begin a new club. For a list of current clubs and organizations go to www.wccnet/students/clubs.

Huron River Review

Students may contribute poetry, prose, photographs, and art to this annual campus literary journal. Aspiring contributors can call 973-3647 or stop by the Writing Center (LA 355) for more information.

The Student Voice Newspaper

The Student Voice is a bi-monthly newspaper published by and for the students of WCC. The newspaper's content is the sole responsibility of the staff and the newspaper's editorial board. The Voice provides opportunities for students to write, take photographs, design, and sell and manage advertising. The Student Voice is located in the Student Center Building in Room 117. For more information call (734) 677-5125.

Orchard Radio

Orchard Radio is WCC's student-run Internet radio station. Students are invited to create and host their own radio show or provide off-air assistance doing marketing, special projects, and general administration. Students dedicate themselves to learning the fundamentals of running a radio station, how to conduct interviews and do research, and the importance of being a responsible person in media. All students are welcome to join at any time. Contact Orchard Radio at (734) 477-8532, or e-mail radio@wccnet.org.

GalleryOne

GalleryOne is located on the first floor of the Student Center Building, Room 108. The gallery shows work by student, faculty, local and international artists from the first day of classes in September through July. Periodically, the gallery will schedule lectures, gallery talks, demonstrations, and workshops that are relevant to current exhibitions. The gallery is open during the day and some evenings. See postings for hours.

Student Resource and Women's Center

The Center provides advising, counseling, mentoring and financial assistance to students. It also offers workshops, inspirational speakers, networking opportunities, and mentoring programs specifically for women. 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 the adult student who most likely has the responsibility of a home, family and full time employment to factor into their educational objectives.

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

The Student Resource and Women's Center offers the following support services:

- Academic, career and professional advising
- Assessment of individual learning styles
- Development of an educational plan
- Financial assistance with educational expenses to students in occupational programs who qualify as single parents, displaced homemakers, men and women

entering nontraditional careers, and economically and/or academically disadvantaged

- Emergency financial assistance through grants by the Washtenaw Community College Foundation
- Inspirational speakers, mentoring programs, library resources and workshops that relate specifically to women

The Center is located on the second floor of the Student Center Building.

Student Rights and Responsibilities

The College maintains a policy on student rights and responsibilities. It addresses student rights and responsibilities as well as student complaint and disciplinary procedures. Copies of the policy may be found on the WCC website under Board Policy 4095 or secured from the Associate Vice President for Student Services office.

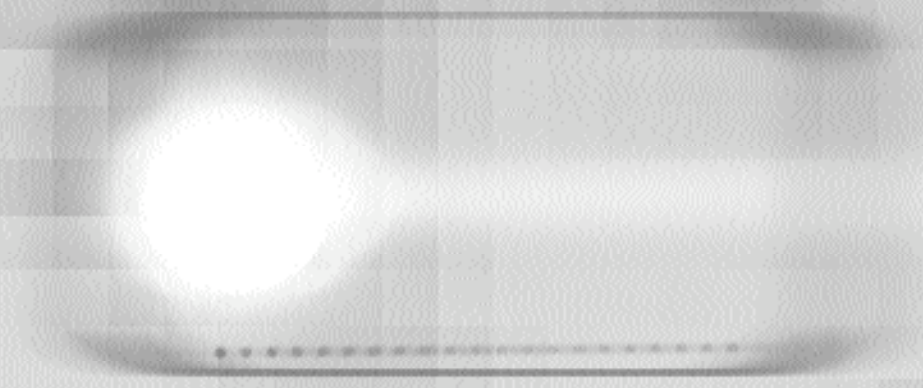
Substance Abuse

Alcohol and Drug Policy

The College has adopted the following position, consistent with requirements of the new 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 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. 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.

Tutoring Program

The college offers an extensive free tutoring program. Students in need of a tutor may complete the required form in the Learning Support Services Office (LA 104). Tutoring hours are 9 a.m. to 9 p.m. Monday-Thursday and 9 a.m. to 4 p.m. on Friday.



Learning Resources

Learning Resources

Library

The college library is an integral part of the total WCC learning environment and offers library, media and computing services to students and staff. The Library is an active participant in the instructional and research programs of the College. Library staff seek to instruct students in the effective and efficient use of print, media and electronic resources. The staff encourages students to develop the habit of self-education so that books and other knowledge sources will contribute to their intellectual development in future years.

The Library provides the use of more than 55,000 books and 550 hard copy periodicals. Several thousand electronic periodicals, both magazines and newspapers, and electronic books are available online both at the Library site and off-site through the Library's webpage. Micropublications and career materials also are available. A collection of media software such as audio and videotapes, digital videodiscs, and music CDs can be borrowed for use on equipment in the facility or in College classrooms.

Librarians and faculty members work in partnership to select the best of retrospective and current materials to respond to students' curricular needs and to provide accurate, up-to-date information and varying viewpoints on subjects and issues. To help students use the extensive library resources, the librarians provide research instruction for classes and assist in independent study activities. Students may request to join a research instruction class if their instructor has not scheduled a session.

Librarians provide faculty a full range of reference services, including electronic delivery of information from many off-site informational databases. The Library actively participates in inter-library loan programs 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.

The Library is located on the first and second floors in the Gunder Myran Building. The facility includes several group study rooms that can be reserved for two-hour periods. Network access and whiteboards in these rooms facilitate research and group projects. Traditional study tables and informal lounge seating offer students choices in study environments.

Photo ID/Library cards are available to all currently enrolled students. ID cards are required for borrowing materials and are needed for off-site access to the Library's online resources. An automated circulation system and online catalog provide efficient, accurate information on all library materials. Limited photocopy services are available.

The Library is open during weekday, evening and weekend hours as posted each semester. Consult the library website for more information and electronic access to many resources and services. (http://www.wccnet.edu/dept/lrc/)

Media Services

The Media Service Department (MSD) is broadly responsible for two aspects of campus operations: 1) maintaining instructional equipment and associated software at locations on campus and at regional centers, and 2) supporting campus events and conference operations.

As part of its instructional mission, the MSD offers a wide range of audio/visual services, including classroom presentation assistance, online video conferencing, visual media preparation, audio and video production and editing, and tape duplication services. In addition, MSD is responsible for maintaining campus satellite operations, and the campus video bulletin board system. MSD prepares non-broadcast educational videotapes that support classroom instruction and also provides off-air taping and teleconferencing services to faculty and staff. The department also operates a loan program that provides digital cameras as well as PC and Mac laptops to faculty.

MSD also provides complete technical support for campus events and conferences across the campus, in the College Theater and in Towsley Auditorium. These services range from assistance with presentation and display setups to complete sound reinforcement and stage lighting for assemblies and theatrical events.

Web Services

The Web Services Department is responsible for development and maintenance of the college's website. The Web Services Department also assists faculty and others who are engaged in online, web-based instruction.

Distance Learning

The College offers college credit courses to students at a distance using either the Internet or interactive television (ITV) as the mode of delivery. Students considering online classes should have experience using word processing software, e-mail and the World Wide Web. The college provides free student e-mail accounts. Online students will need to own or have access to specific hardware and software that meet technical requirements in order to participate in class instruction and discussion. Procedures and requirements are described on the distance learning website. (http://www.wccnet.edu/distance)

Faculty and students in distance classes use a course

management software program for Web-based course support. Staff in the Distance Learning Office (DLO) provide training in use of this software to instructors at scheduled times during the semester. The DLO staff provides telephone (734 477-8556) and email (vls@wccnet.edu) support for distance students.

Computer Commons

Two computer commons housing many microcomputers for use by students and staff are located in the Library on the second floor of the Gunder Myran Building and in TI 108. Staff provide assistance to users in the operation of hardware and software in both computer commons. The two commons are open for operation during daytime and evening hours all year and on weekends during fall and winter semesters. Check postings for exact hours. Productivity software such as word processing, spreadsheets and databases, as well as access to the Internet and the college network are offered in both locations. Specialized software supporting specific instructional programs is also available in the Library commons.

English as a Second Language (ESL)

The College offers courses (from beginning through advanced) for students who want to learn English as a second language (ESL). These courses prepare students to enter College academic and vocational programs and to participate in the broader English speaking community. For specific information, contact the English Department at (734) 677-5138.

Math Center

The Math Center provides services to improve students' mathematical skills. Many of the self-paced mathematics classes meet in this location (MTH 039, 062, 090, 097A, 097B, 107, 151, 152, 163, 165, 169A, and 169B). Placement tests designed to guide students into the proper level course for their needs and abilities are administered and evaluated. Information regarding courses, procedures, schedules, and program requirements is readily available. For specific information call (734) 973-3392.

Academic Skills Center

The Academic Skills Center provides help for students who desire to improve their reading and study skills and realize academic success. Diagnostic tests designed to guide students into the proper level courses for their needs are administered and evaluated. Students enrolled in Academic and Study Skills (ACS) classes are encouraged to use the facility regularly during the semester. Questions related to reading skills may be directed to the Academic Skills Center.

Testing Center

The Testing Center (LA 101) is a facility for the convenience of students, to provide flexibility and reduce the stress of test-taking. Tests for on-line courses, make-up tests, tests for self-paced instruction and other specialized types of tests are given in the Testing Center at the request of faculty and Student Services. The Testing Center is open Monday through Saturday throughout the academic year.

Writing Center

Writing Center staff help students enrolled in English 040, 050, 051, 091, 100, and 111 with assigned written exercises. Writing Center personnel also assist students in completing writing assignments for any course at the college. A student can work with staff on selected problems of any aspect of a writing project, from narrowing a topic, developing a thesis, and organizational patterns to reviewing a rough draft or proofreading a final copy. Usually, work with an individual student is limited to 20 minutes. Macintosh computers are available so students may word process their papers. Check a copy of Writing Center News, available in the Center, for more information.

Writing Center Hours (These times may change. Check the schedule outside LA 355.)

Fall/Winter

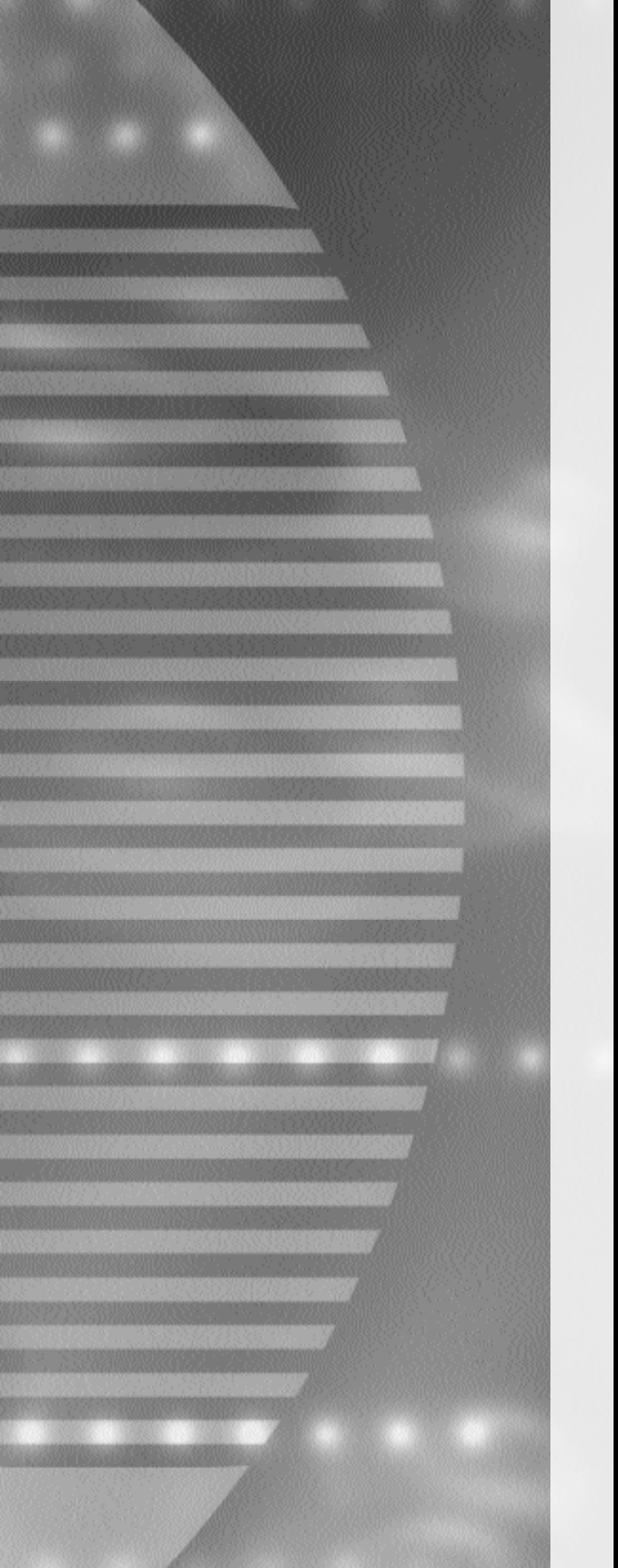
Monday .....9 a.m.-9 p.m.
Tuesday .....9 a.m.-9 p.m.
Wednesday .....9 a.m.-9 p.m.
Thursday.....9 a.m.-3 p.m. (Closed 3-6 p.m.)
.....6 p.m.-9 p.m.
Friday .....9 a.m.-5 p.m.
Saturday .....8 a.m.-12 p.m.
Sunday .....Closed

Spring

Monday .....8 a.m.-7 p.m.
Tuesday .....9 a.m.-8 p.m.
Wednesday .....8 a.m.-7 p.m.
Thursday ..... 9 a.m.-8 p.m.
Friday .....9 a.m.-1 p.m.
Saturday.....Closed
Sunday .....Closed

Summer

Monday .....9 a.m.-8 p.m.
Tuesday .....9 a.m.-8 p.m.
Wednesday .....9 a.m.-8 p.m.
Thursday.....9 a.m.-8 p.m.
Friday .....9 a.m.-1 p.m.
Saturday.....Closed



Continuing Education and Community Services

Continuing Education and Community Services

Non-Credit Short Courses, Seminars, and Workshops

Washtenaw Community College extends educational resources and facilities to the community by offering non-credit courses, emeritus classes for people 65 years of age or older, customized training for business and industry, community outreach through courses and services offered at off-campus sites, and facility rental for community groups and businesses.

A broad spectrum of non-credit classes is offered to the public throughout the year. This includes the following program areas:

- Business and professional development
- Computer and other technologies
- Self paced computer instruction
- Personal health
- Professional health care continuing education
- "It's Your Life" courses for personal enrichment and recreation

For information about these classes, please call (734) 677-5027.

Continuing Education Units (CEU's)

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

Customized Training

WCC offers customized training to business, labor, and government in southeastern Michigan. These educational experiences are designed to help the county and its citizens to be globally competitive and economically viable. In this arena, WCC provides seminars and workshops for businesses, labor, governmental organizations, community organizations, and professional groups.

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

Extension Sites

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

The three WCC extension and community center offices are:

Eastern Area:

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

Western Area:

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

Northern Center:

Brighton High School
7878 Brighton Road
Brighton, MI 48116
(810) 229-1419
Class Locations: Brighton High School, Pinckney (Pathfinder School)

The Western Center and Harriet Street center offer a variety of day and evening credit and non-credit classes with an emphasis on computer related instruction in the areas of Internet Professional, Graphic Design, Computer Information Systems, and Business Office Systems. Additional credit classes include English, Math, Social Sciences, Behavioral Sciences and Business.

The Northern Center located in Brighton High School offers credit classes in English, Math, Social Sciences, Behavioral Sciences, Business, Computer Information Systems, Art, Humanities, and Economics. In addition, there are credit courses available in Pinckney at the Pathfinder School (the old Pinckney High School).

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

This extension program is coordinated and managed through the Office of Evening and Extension Services.

Students may register at the regional centers in accordance with a pre-determined and published schedule. For general information, call (734) 677-5030.

Emeritus Program

Special opportunities are provided by WCC for county residents who are at least 65 years of age. 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 non-credit classes. A per-semester registration fee and other mandatory fees are required for credit courses. Contact the Department of Continuing Education and Community Services at (734) 677-5027 for eligibility details.

Conference Services

Washtenaw Community College provides comprehensive meeting and event planning for groups using WCC space. These events can range from a 25-person business strategy planning session to a 300-person fundraiser. Flexible conference rooms are available and can accommodate a small retreat to a 50 booth exposition. Towsley Auditorium seats 470 people and is suitable for concerts, recitals and small theater productions. The campus is equipped with state of the art audiovisual equipment and can support teleconferences and videoconferences. On site catering is available.

For information about community group and business rental of college facilities, please call (734) 677-5034.

Academic Policies/ Procedures

Academic Policies/ Procedures

Articulation Agreements

Articulation agreements between WCC and four-year colleges and universities allow WCC students in specific programs to apply some or all of their credits earned towards a bachelor's degree. If a program has an approved articulation agreement, it will be listed under the description in the program listing. Copies of articulation agreements are available in the Counseling Office. For information on public school articulation, look under Credit for Prior Learning/Transfer Credit below.

Assessment of Student Learning

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

Cancellation of Classes

The college may cancel course offerings due to low enrollment, lack of an instructor, or any other reason deemed viable by the Executive 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 website (wccnet.org) 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 students' work has been adversely affected and, if warranted, may withdraw a student mid-way through the semester.

For any class with a wait list, students who do not attend the first two class sessions in a semester may be dropped from the class to allow wait-listed students to enroll in the course. 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.

Complaint Procedure

See the Office of the Associate Vice President of Student Services or look for Student Rights and Responsibilities on the WCC home page.

Course Load/Student Status

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

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.

Credit for Prior Learning/Transfer Credit

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. 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.

Advanced Placement Testing

College Board Advanced Placement Exams

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

College Level Examination Program (CLEP)

Credit may be granted for the successful completion of each of the five general examinations of CLEP. Minimum scores for awarding credit are based on Commission of Educational Credit and Credentials of the American Council on Education recommendations:

English Composition* 530

Mathematics.....421

Humanities.....421

Natural Sciences 421

Social Sciences and History 421

* Students who complete 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.

Students who have earned six or more credits in any one of the general examination subject areas are not eligible to receive credit for the general examination in that area.

Subject examinations exist in the general areas of composition, literature, history, social sciences, science, mathematics, and business. In general, a maximum of three semester credits may be granted for each college approved subject examination for scores equivalent to a "C" or better in a comparable college course. Some general and subject examinations also require the successful completion of an essay examination or laboratory demonstration. For information about scheduling a CLEP test, contact the Testing Center.

DANTES Subject Standardized Tests

The DSST provides Colleges with a means to measure students' knowledge in commonly taught college courses and award credit based on their 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 Student Records. For information about scheduling a DANTES test, contact the Testing Center.

National League for Nursing (NLN) Examination

LPN's applying for advanced standing in the Nursing program may demonstrate competency in maternity nursing by writing the NLN-Nursing of the Childbearing Family examination. Upon successful completion of the test, students will receive credit for NUR 131 and NUR 132.

Articulation with Public Schools

Articulation agreements currently exist between WCC and many public school districts, which allow students to receive college credit for successful completion of specific high school courses and/or programs. As stipulated in all current agreements, students must be recommended by their high school instructor in order to receive credit. Their high school should attach the student performance record to the articulated credit application that the student submits to WCC. Students must apply for articulated credit and attend WCC within two years of high school graduation. Information about high school articulation and applications for articulated credit are available from high school counselors and occupational instructors, and the WCC Student Records Office.

Credit by Examination

Students who appear to have proficiency in a course may, upon recommendation of a full-time instructor and with the approval of the department chair, take a course examination for credit. The student must be accepted to the College as a credit student and complete a Credit-By-Examination application form. The cost of the examination is based on the number of credit hours in the course. A maximum of 30 credits earned by examination may be applied toward a degree. The student is responsible for arranging to complete the examination. Students are allowed to attempt only one credit by examination 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 military service, 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 Office of Student Records and contact the appropriate faculty member(s) in the student's program area. Courses granting CEU's 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 students with backgrounds in nursing or apprenticeship training).

Military Training

College credit for military training is generally awarded as non-traditional credit. For an evaluation of service school training, students must submit a military transcript and DD 214 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 found in A Guide to the Evaluation of Educational Experiences in the Armed Services. If a course is not listed, 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.

Transfer Credit from Other U.S. Colleges and Universities

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

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

Entry Assessment Guidelines

WCC is committed to maximizing success for each student. The College provides an open access, student-oriented learning atmosphere in which students have the opportunity to achieve success at the level for which they are ready. While WCC is open to all individuals who can benefit from the College's educational and service programs, the mandatory entry assessment tests for new students provide information that helps the College match student skill levels with appropriate courses.

To register for 100 and 200 level courses, students must have the minimum college level entrance scores (listed in next paragraph) or successfully complete the prescribed courses, unless different placement scores and/or course prerequisites are specifically listed in a course description. Courses below the 100 level have their own specific placement scores and course prerequisites.

College Level Entrance Scores:

Reading: COMPASS Reading score of 82, or ASSET Reading score of 43, or ACS 108 with a "C" or better, (concurrent enrollment is allowed)

Writing: COMPASS Writing score of 81, or ASSET Writing score of 46, or ENG 091 with a "C" or better

Math: Specific COMPASS Math scores are required for placement in math courses or courses with math pre-requisites. Completion of high school math courses does not substitute for math placement scores. Students with low math placement scores are not subject to basic skills hold, except for courses with math pre-requisites.

Students who produce documentation of acceptable ACT or SAT scores are exempted from taking the Entry Assessment tests. For ACT and SAT scores, go to the front of the Course Descriptions. For other exemptions see the Admissions Section of this catalog.

Some programs have an additional screening process. For detailed information, see the program admission requirements for your specific program in the "Programs of Study" Section of this catalog.

Grades

Grading Scale

Grade	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
DF* Deferred	0
N* Non-Attendance	0
AU* Auditor	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'.

*** Explanation of Grades:**

Satisfactory 'S' or Unsatisfactory 'U': 'S' and 'U' grades are given for courses numbered 051 and below. Credits for courses with 'S' or 'U' grades are not figured into credits attempted in determining a student's GPA and do not count toward graduation.

Incomplete Grade 'I' Credit Withheld: If the instructor determines that the student has nearly completed the requirements of a course but is missing a small but essential part of the course due to unforeseen or extenuating circumstances, the instructor may issue an 'I' grade. The 'I' grade will remain on the student's transcript until the requirements of the course are met and a letter grade given or an instructor-determined deadline has passed with a maximum of one year. The final grade will depend on the quality of the completed work and its significance to the course. After the deadline, the grade that has been preset by the instructor will be posted on the transcript. 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 considered a deficiency and is not figured into credits attempted in determining a student's GPA.

Deferred Grade 'DF' Credit Withheld: In certain designated courses, a student may be unable to complete the required work until the following semester. If, in the opinion of the instructor, the student is making normal progress, the 'DF' may be assigned. Students must re-enroll in the course and complete the required work the following semester (spring and summer session excluded). The 'DF' grade is not considered a deficiency and is not figured into credits attempted in determining a student's GPA.

Non-Attendance 'N': No credit due to lack of attendance. Generally this grade is assigned to a student who has only attended class once or twice.

Audit 'AU' No Credit: A student may enroll in a credit course on a non-credit (audit) basis. The number of credits the course normally carries is not included as part of the total credit load, however, tuition is assessed by the number of credits for the course. Change from audit to credit or credit to audit status is not permissible after one quarter of the course has elapsed unless approved by the instructor. Refer to the schedule of courses for specific dates each semester. Credit is not earned in courses taken as an auditor.

Pass 'P'/No Pass 'NP': Pass/No Pass grades are given only in specifically-designated courses numbered above 051. 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.

Grade Appeal Procedure

A student may appeal any grade from any course. The process consists of the following steps:

1. Student discusses concerns with instructor.
2. If step one does not resolve the appeal, the student submits to the department chair a written request for a meeting. This step must be taken within five months of the posting of the grade to the student's record.
3. After discussion with the student and/or the instructor, the department chair may suggest to the student either there is no basis for appeal, or the student may with to appeal to the dean.
4. It the student wishes to pursue the appeal, he/she should submit the appeal in writing to the division dean with a request for a meeting.
5. The division dean then invites both the student and the instructor to a meeting and issues a final decision. This step must be completed within six months of the posting of the grade to the student's record.

All parties are to be notified of any action taken during the entire process.

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.

Graduation Requirements

Application for Graduation

To be eligible for graduation, you must file an Application for Graduation with the Office of Student Records. The application should be turned in four months prior to the expected date of graduation. This form is available from the Student Connection. Degrees and certificates are issued in December, April, June, or August, depending on when the student has completed their degree requirements and applied for graduation. You must file an Application for Graduation even if you do not plan on attending the commencement ceremony. You may not

receive a certificate and a degree from the same program area during the same semester.

Graduation Requirements for an Associate Degree

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

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

Graduation Requirements for a Certificate

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

1. Fulfill the prescribed requirements of your specific certificate curriculum including courses, credit hours, and/or hours of attendance. (see Programs of Study Section for specific requirements) Courses numbered below 100 do not count toward graduation for the Certificate. Courses numbered below 200 do not count toward graduation for the Advanced Certificate and the Post-Associate Certificate. Courses numbered 051 and below do not count toward graduation for the Certificate of Completion.
2. Complete a minimum of 75% of the total credits required as "residence credit" for each certificate pursued except for the Certificate of Completion, which requires that all credit hours (if there are any) be completed as residence credit. Credit for prior learning, including credit by exam and transfer credit, may not be used as residence credit.
3. Earn a minimum cumulative grade point average (GPA) of 2.0.
4. If applicable, earn the minimum grade point average (GPA) specified for your major.
5. To earn a second certificate in the same program area, you must complete at least nine additional credit hours, including the specific course requirements in the curriculum.
6. Meet all financial and library obligations to the College.
7. File an Application for Graduation form. If you plan on earning a degree in the same program area as your certificate, you must file for and receive your certificate at least one semester before the degree.

Selecting the Program Year for Meeting Graduation Requirements

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

Discontinued Programs

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

Course Substitutions

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

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 Executive Vice President for Instruction. A Waiver of Program Requirements form must be filed with the Office of Student Records.

Graduation Ceremony

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

Honor Roll and Graduation Honors

The Deans' Honor Roll acknowledges students who have completed 12 or more credits during a semester with a minimum 3.5 grade point average. Students completing 12 or more credits with a minimum 3.8 grade point average are considered High Honor Roll students. Students attending the college on a part-time basis who, over the previous three semesters (Spring/Summer counts as one semester), have accumulated at least 15 credits and earned a minimum 3.7 grade point average are also on the Deans' Honor Roll. Students are honored at either a spring or winter honors convocation.

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

Honor Society (Phi Theta Kappa)

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

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

Students inducted into the organization will receive a Golden Key membership pin, an embossed certificate, the Golden Key Newsletter, and a Phi Theta Kappa Scholarship Directory. Some $21 million in transfer scholarships is available exclusively for society members as well as many other scholarship opportunities. Society members will wear a gold braid and tassel at commencement ceremonies and receive a gold diploma seal indicating membership. This designation will also be included on students' academic transcripts.

If you meet the eligibility requirements for Phi Theta Kappa or would like further information, a brochure is available from the Student Activities office, or you may call the faculty advisor for Phi Theta Kappa at (734) 973-3691.

Release of Student Information Policy (FERPA)

It is the purpose of the Board of Trustees' Policy on Release of Student Information to ensure students' access to their educational records and to protect their rights to privacy by limiting the transferability of their records without their consent. It is the further purpose of this policy to comply with the Family Educational Rights and Privacy Act (FERPA) of 1974, as amended. A copy of the complete policy may be obtained from Student Records.

Education records are maintained in various offices of Washtenaw Community College, 4800 E. Huron River Drive, Ann Arbor, Michigan. Refer to the Office of Student Records for types and custodians of records.

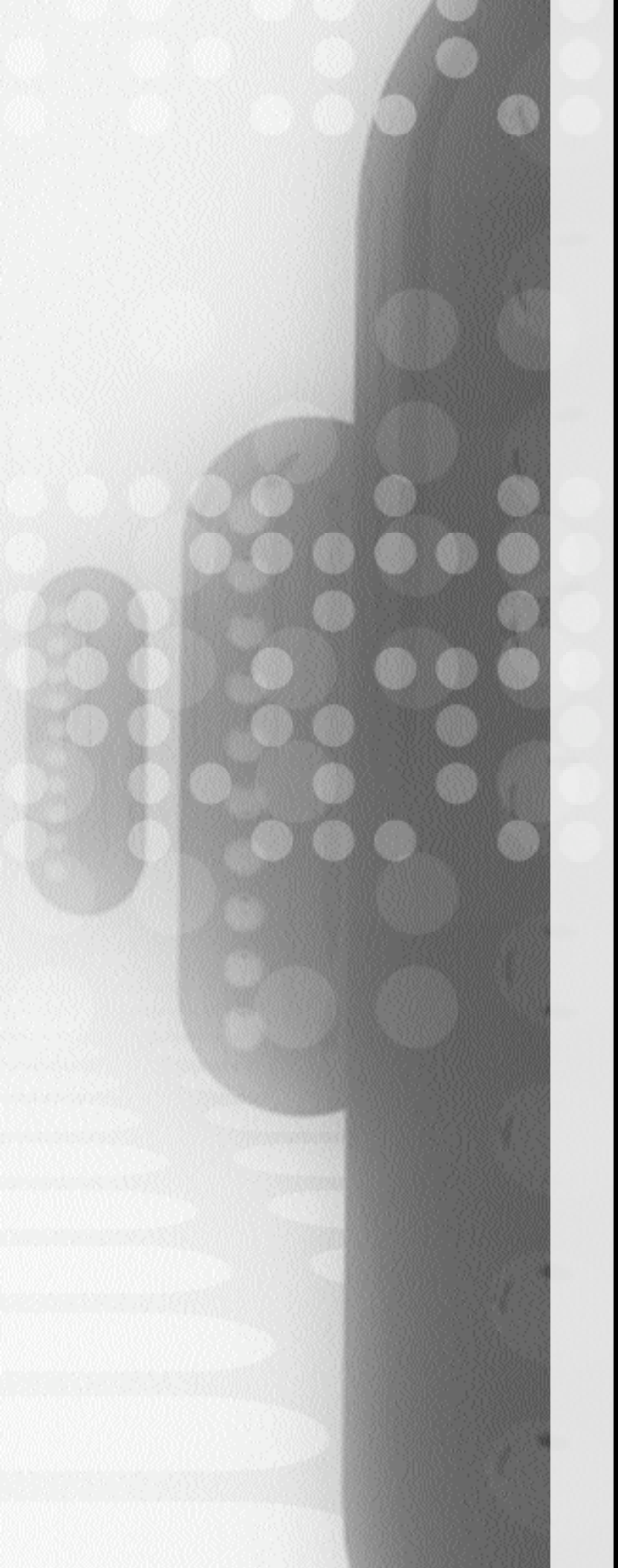
No one shall have access to, nor will the college disclose, any information from a student's educational records without the written consent of the student except to WCC personnel performing an assigned college activity and those designated by federal law. Although it is the practice of the college not to release information without the informed consent of the student, at its discretion, the College may provide directory information in accordance with the provisions of FERPA to include: student name, address, telephone number, email address, semesters of attendance, full-time/part-time status, degree(s) awarded, major field(s), and date(s) of graduation.

Students may have directory information withheld by filing, within two weeks of the first day of the academic semester, a petition for exemption with the Student Connection. WCC assumes that failure to specifically request the withholding of categories of directory information indicates individual approval for disclosure. Requests for the withholding of directory information are only valid for the current academic year.

Students wishing to review their educational records must file a written request with the custodian of the records, listing the item(s) of interest. Records covered by FERPA will be made available for inspection within 30 days of the request.

The law provides students with the right to inspect and review information in their educational records, to challenge the content of their educational records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their file if they feel the decision of the hearing panel to be unacceptable.

Students who believe that the adjudication of their challenge was unfair, or not in keeping with the provisions of FERPA, may request in writing assistance from the president of WCC. Further, students who believe their rights have been abridged may file complaints with the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202, concerning the



Campus Information

Campus Information

Alcoholic Beverages on Campus

Students, employees, and visitors of WCC are expected to observe all federal, state, and local regulations governing the use and possession of alcoholic beverages while on College property, and at College-sponsored events while any minor is present. All students, employees, and visitors are specifically forbidden to use or possess alcoholic beverages or to be under the influence of the same while on College property.

College Closing for Emergency and Severe Weather

Occasionally extreme weather conditions or other unforeseen events necessitate closing the College either before or after classes have begun for the day. Students can tune into local radio stations for college closing information: WDET-FM (101.9), WEMU-FM (89.1), WHMI-FM (93.5), WIQB-FM (102.9), WJXQ-FM (106.1), WLEN-FM (103.9), WQKL-FM 107.1) WUOM-FM (91.7), WXIK (KIX 94 News), WAAM-AM (1600), WJR-AM (750), WSDS-AM (1480), WWJ-AM (950), WCM-AM (900), WNRS-AM (1290) and WTKA-AM (1050). The following TV stations will also broadcast college closing information: WJBK (Channel 2), WDIV (Channel 4), WXYZ (Channel 7) and WKBD (Channel 50). A pre-recorded message will be available at the College switchboard giving details of the College closing and reopening (973-3300). Or check the College website (www.wccnet.edu).

Dental Clinic

The College has a complete modern dental clinic, which is open to students, faculty, and staff. Treatment is provided by University of Michigan dental students under the supervision of a licensed dentist. Contact the Dental Clinic for current information regarding services provided, hours of operation, and fees.

Eating and Drinking in Classes

Eating and drinking in classes and instructional labs is strongly discouraged. However, faculty members are provided the freedom to make judgments regarding these matters in their particular classes. In instances where eating and drinking in classes is detrimental to the learning atmosphere or the well-being of instructional equipment/facilities, the College administration reserves the right to deny these privileges in selected rooms. Students may also file complaints if they feel that eating and/or drinking rules in a particular course are inappropriate and are inhibiting their learning. Such complaints should be filed with the area dean or the associate vice president for student services.

Emergencies

Emergency Notification Services for Students

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

The Office of Campus Safety and Security relies upon all members of the campus community to assist in making the campus a safe place by reporting emergencies and suspected criminal activity directly to the Campus Safety and Security Department by dialing the campus emergency number, extension 3411 (or 734 973-3411, if calling from an off campus location).

Campus telephones are labeled on the handset with this number. Free campus 'House Phones' are located in the lobbies and hallways of campus buildings. Campus Safety and Security staff are available 24 hours a day to respond to emergency calls.

Emergency telephones have been placed at several campus locations as well. These phones ring directly to the Office of Campus Safety and Security. Emergency phones located in campus parking lots and exterior areas are easily identified as green cylindrical towers, with the word "Emergency" printed on the side, and have a blue light at the top. Pushing the button on the user panel operates these phones. Emergency phones located in the buildings are wall mounted blue boxes, and are also operated by pushing the button on the user panel.

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 laison with them. Security personnel receive both annual and on-going training in a variety of safety and security related subjects.

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

Anonymous Tip Line

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

Escort Services

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 extension #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.

Food Services

Schlotzsky's Deli and Ann Arbor Steak and Fry (734) 973-0588 offer food services on the 1st floor of the Student Center building. The dining area is open all year. Check the posted times. Further convenience is provided by food and drink vending machines located in every building on campus.

The Artists' Gallery Dining Room (734) 973-3584, operated by students in the College's Food and Hospitality program, is located on the first floor of the Student Center Building. Lunch is served Monday through Thursday from 11:30 a.m. to 12:45 p.m., during the fall and winter semesters only. The dining room is available to students, staff and the general public.

Lost and Found

Found items may be turned-in to the Campus Safety and Security Department where they will be maintained for a period of four months. 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 ext. 3411 (973-3411 from off campus) with a description and approximate value of the item.

Meeting Rooms

Organized student or community groups may secure rooms for meetings by calling the Office of Conference Services at (734) 677-5033.

Parking

Parking is provided on campus for general, handicapped, visitor, vendor and service vehicles. Parking is prohibited in the following areas: bus stops, fire lanes, main travel lanes, sidewalks, handicapped spaces without a permit, restricted parking spaces without a permit, marked crosswalks, building entrances and exits, and outside marked parking spaces. Parking regulations on campus are covered by Campus Safety personal and violations will be issued.

Smoke-Free Campus

In the interest of providing a safe and healthy environment for the College's students, employees, and visitors, smoking is prohibited in all Washtenaw Community College buildings.

Student Connection

The Student Connection, located on the second floor of the Student Center Building, provides one-stop admission and registration services. Services provided at the Student Connection include: applying for admission, scheduling orientation/COMPASS testing, submitting address changes, registering for courses, requesting and picking-up transcripts, reporting residency changes, applying for graduation, and getting information on scheduling/room changes. Contact information for instructors and departments is also available. The Student Connection may be reached by calling (734) 973-3543.

Curriculum

Curriculum

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 (A.A.)

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 A.A. degree title.

Associate in Science (A.S.)

The Associate in Science degree is primarily used by transfer programs that carry large math and science requirements.

Associate in Applied Science (A.A.S.)

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. This degree has dual use for some programs that are primarily career-entry but also have articulation agreements with specific bachelor's degree programs.

Certificates

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

Certificate of Completion

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

Certificate

The Certificate is awarded for standard credit programs that normally take two semesters to complete. 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 also may be added to a standard Certificate to form the basis for an associate degree.

Post-Associate Certificate

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

Transition to the New Degree and Certificate Titles

In Fall 2000, many of WCC's programs were assigned new degree or certificate titles and some programs were discontinued, as a result of a major restructuring of WCC's curriculum. Washtenaw Community College's policy is to phase out discontinued programs over a period of three years. Students following programs that were discontinued in Fall 2000 are urged to see a program advisor to determine whether it is possible to complete their programs before Fall 2003 or, if it is necessary, to change to a new program. Students will be advised on making course substitutions and, if necessary, on selecting a new program.

General Education Graduation Requirements

Philosophy Statement

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

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

General Education Requirements for Students Who Enrolled in Fall 2000 and After

All students, who began associate degree programs in Fall 2000 or later, are required to meet the new general education requirements in the eight areas listed below. The first six areas are met through course distribution requirements (successfully completing courses from restricted distribution lists). Area seven, critical thinking, is incorporated into the courses in the first six areas and does not require any additional coursework. Area eight, computer and information literacy, is met through competency testing.

1. **Writing -** Develop, organize, and express thoughts in writing using Standard English
2. **Speech -** Speak in an organized and effective manner and listen critically and with comprehension
3. **Mathematics -** Understand the applications and perform computations using the concepts of college-level mathematics
4. **Natural Science -** Understand principles and applications of modern science
5. **Social and Behavioral Science -** Understand principles and applications of social and behavioral sciences in exploring the dynamics of human behavior
6. **Arts and Humanities -** Understand and apply information related to the nature and variety of the human experience through personal and cultural enrichment
7. **Critical Thinking -** Demonstrate skill in analyzing, synthesizing and evaluating
8. **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

General Education Requirements for Students who enrolled before Fall 2000

Students who enrolled in degree programs prior to Fall 2000, have until the end of the Spring/Summer term in 2003 to complete their programs using the Core Curriculum general education requirements that were in effect when they enrolled. Beginning in Fall 2003 all associate degree students, regardless of when they started, will be required to meet the new general education requirements. Students who must change to the new requirements, will be assisted by academic advisors and counselors in selecting appropriate courses and making a smooth transition. Students who are still using the 24 Core Curriculum Elements should check course descriptions for the core elements approved for specific courses. Courses that meet Core Elements 13 and 14 are listed in Appendix B.

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

Course Distribution Requirements

Associate degree students must complete courses from each of the six General Education areas below. The requirements vary, depending on which degree is being earned. The chart below lists the specific number of courses and credit hours required for each degree. Whenever two courses are required in one area, at least one course must be chosen from Group I.

	AA	AS	AAS
1. Writing	2 courses 6-7 credits	1 course 3-4 credits	1 course 3-4 credits
2. Speech	1 course 3 credits	1 course 3 credits	1 course 3 credits
3. Mathematics	1 course 3-4 credits	2 courses 6-9 credits	1 course 3-4 credits
4. Natural Science	1 course 3-4 credits	2 courses 7-8 credits	1 course 3-4 credits
5. Social & Behavioral Science	2 courses 6 credits	1 course 3 credits	1 course 3 credits
6. Arts and Humanities	2 courses 6 credits	1 course 3 credits	1 course 3 credits

Computer and Information Literacy Requirement

The computer and information literacy graduation requirement has been in effect since Fall 2001. Associate degree students, who began their programs in Fall 2001 or later, must demonstrate basic computer skills and knowledge by successfully passing the Computer and Information Literacy Competency test. Courses taken at other institutions, work experience, or transfer credit will not satisfy this requirement.

Students may take the Computer and Information Literacy Competency Test at any point during their studies before graduation. Students who do not pass the competency test may study independently and then retest, or enroll in CIS 099 (Computer Literacy). This one-credit course is for students who want help preparing for the competency test, which is used as the final exam for the course.

Students who are seeking an associate degree should take the Computer and Information Literacy test at their earliest opportunity, preferably upon admittance to the College. The test is administered in the Testing Center (LA 101). The schedule for testing can be found in the Academic Class Schedule.

Approved Courses for General Education Distribution Areas

The following courses are approved for General Education Areas one through six. Some of the courses are limited to a specific degree or program, so students should check the footnotes when selecting courses. Students also should check the requirements for their program to determine if specific courses are required or recommended. In each General Education Area, at least one course must be taken from Group I. Group II courses may be used only as the second course when two courses are required.

Area 1. Writing

Group I

ENG 100[1]	Communication Skills	4
ENG 107[1]	Technical Communication	3
ENG 111	Composition I	4
ENG 122	Composition II	3
ENG 225	Advanced Composition	3

[1] *May be used for the AAS degree only.*

Area 2. Speech

Group I

COM 101	Fundamentals of Speaking	3
COM 102	Interpersonal Communication	3
COM 130	Introduction to Mass Communication	3
COM 142	Oral Interpretation of Literature	3
COM 200	Family Communication	3

Area 3. Mathematics

Group I

MTH 107[1]	Triangle Trigonometry	3
MTH 148[2]	Functional Math for Elementary School Teachers	4
MTH 151[1]	Technical Algebra	4
MTH 152[1]	Technical Geometry and Trigonometry	4
MTH 160	Basic Statistics	4
MTH 163[1]	Business Mathematics	3
MTH 165[3]	Health Science Mathematics	3
MTH 167[3]	Math Applications for Health Science	3
MTH 169	Intermediate Algebra	4
MTH 176	College Algebra	4
MTH 178	General Trigonometry	3
MTH 180	Precalculus with Trigonometry	5
MTH 181	Mathematical Analysis I	4
MTH 182	Mathematical Analysis II	4
MTH 191	Calculus I	5
MTH 192	Calculus II	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295	Differential Equations	4

[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.*

Area 4. Natural Sciences

Group I

AST 111	General Astronomy	3
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 111	Anatomy and Physiology	5
CEM 105	Fundamentals of Chemistry	4
CEM 111	General Chemistry I	4
GLG 100	Introduction to Earth Science	4
GLG 103	Field Geology	3
GLG 114	Physical Geology	4
GLG 202[2]	Earth Science for Elementary Teachers	3
PHY 105	Conceptual Physics	4
PHY 110	Applied Physics	4
PHY 111	General Physics I	4
SCI 101[1]	The Nature of Science	3

Group II

BIO 103	General Biology II	4
BIO 200	Current Topics in Biology	3
BIO 208	Genetics	4
BIO 215	Cell and Molecular Biology	4
BIO 220	Human Genetics	3
BIO 227	Animal Physiology	4
BIO 228	Plant Physiology	4
BIO 237	Microbiology	4
CEM 122	General Chemistry II	4
GLG 104	Weather	3
GLG 125	Historical Geology	4
PHY 122	General Physics II	4
PHY 211	Analytical Physics I	5
PHY 222	Analytical Physics II	5

[1] *May be used for the AAS degree only.*
[2] *For students following an elementary or early childhood education track only.*

Area 5. Social and Behavioral Science

Group I

ANT 201	Introduction to Cultural Anthropology	3
ECO 120	Making of Economic Society	3
ECO 211	Principles of Economics I	3
GEO 101	World Regional Geography	3
GEO 103	Cultural Geography	3
HST 121	Western Civilization I	3
HST 122	Western Civilization II	3
HST 123	The Twentieth Century	3
HST 201	United States History to 1877	3
HST 202	United States History Since 1877	3
PLS 112	Introduction to American Government	3

PLS 150	State and Local Government and Politics	3
PSY 100	Introductory Psychology	3
PSY 206	Life Span Developmental Psychology	3
SOC 100	Principles of Sociology	3
SOC 205*	Race and Ethnic Relations	3
SOC 230	Marriage and Family	3

Group II

ANT 202	Introduction to Physical Anthropology	3
ECO 222	Principles of Economics II	3
HST 150*	African American History	3
HST 215	History of US Foreign Relations	3
PLS 211	Introduction to Comparative Government	3
PSY 107	African-American Psychology	3
PSY 200	Child Psychology	3
PSY 209	Psychology of Adjustment	3
PSY 257	Abnormal Psychology	3
PSY 260	Introduction to Human Sexuality	3
SOC 202	Criminology	3
SOC 203	Aging and Society	3
SOC 207	Social Problems	3
SOC 250	Juvenile Delinquency	3

** Meets EMU's multicultural requirement*

Area 6. Arts and Humanities (6 Credits)

Group I

ART 130	Art Appreciation	3
ART 143*	Art and Culture of Afro-America	3
ART 150*	Monuments from Around the World	3
DAN 180	Dance Appreciation: The World of Dance	3
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 211	American Literature I	3
ENG 212	English Literature I	3
ENG 213	World Literature I	3
ENG 222	American Literature II	3
ENG 223	English Literature II	3
ENG 224	World Literature II	3
FRN 111	First Year French I	5
FRN 122	First Year French II	5
FRN 213	Second Year French I	3
FRN 224	Second Year French II	3
GRM 111	First Year German I	5
GRM 122	First Year German II	5
HUM 101	Humanities I - Ancient to Medieval Times	3
HUM 102	Humanities I - Renaissance to Modern Times	3
HUM 145	Comparative Religions	3
MUS 140	Music Theory I	3
MUS 180	Music Appreciation	3
PHL 101	Introduction to Philosophy	3
PHL 102	History of Philosophy	3
PHL 205	Ethics	3
PHL 244[1]	Ethical and Legal Issues in Health Care	3
PHL 250	Logic	3
SPN 111	First Year Spanish I	5
SPN 122	First Year Spanish II	5
SPN 213	Second Year Spanish I	3
SPN 224	Second Year Spanish II	3

Group II

DRA 152	Acting for the Theatre I	3
ENG 140	Horror and Science Fiction	3
ENG 200	Shakespeare	3
ENG 214*	Literature of the Non-Western World	3
ENG 240	Children's Literature	3
ENG 241	Adolescent Literature	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
HUM 150	International Cinema	3
HUM 160	American Film	3

** Meets EMU's multicultural requirement*

[1] For Students in Health Programs only.

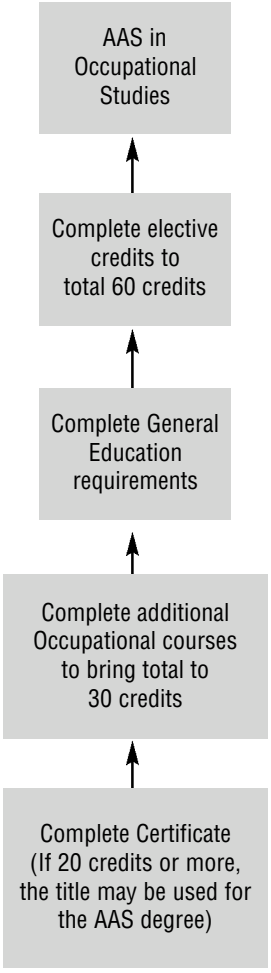
Programs of Study

Program Index

Career Degree and Certificate Programs

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. Most of the programs use one of the four types of certificates offered at WCC or the Associate in Applied Science Degree. Although transfer is not the focus of these programs, some may have agreements with four-year colleges or universities that allow students to transfer some or all of their credits to a bachelor's degree. If a program has a formal articulation agreement it will be noted under "Articulation" in the program description. Students, who think they may want to earn a bachelor's degree, should see the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement in Appendix A.

Some of the certificate programs in this section refer to the Occupational Studies program for earning an Associate in Applied Science Degree in the same career path. If a certificate program does not already lead to an associate degree, students may earn an AAS degree with the Certificate title by completing the requirements for the Occupational Studies program as outlined below.



Occupational Studies (APOST)

Associate in Applied Science Degree

This program allows you to earn an Associate in Applied Science degree by building on an occupational/technical certificate or a group of selected occupational courses. This is a good option if an associate degree is required or preferred as a condition for employment or advancement in your chosen field. If in completing this program, you earn an occupational certificate of twenty (20) credits* or more that does not already lead to an associate degree program, you may request to have your certificate title substituted for "Occupational Studies" as the title of your degree program. You also can combine coursework from several occupational areas to prepare for a job that requires multidisciplinary skills. You should begin by meeting with a divisional counselor or faculty advisor who will assist you in developing a program of study. A counselor can help you determine your career interests and educational goals as well as provide transfer and career information.

Business and Computer Technologies Division and Health and Applied Technologies Division

Advisor: See a divisional counselor or a faculty advisor from the occupational area in which you plan to study.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Studies Program Requirements

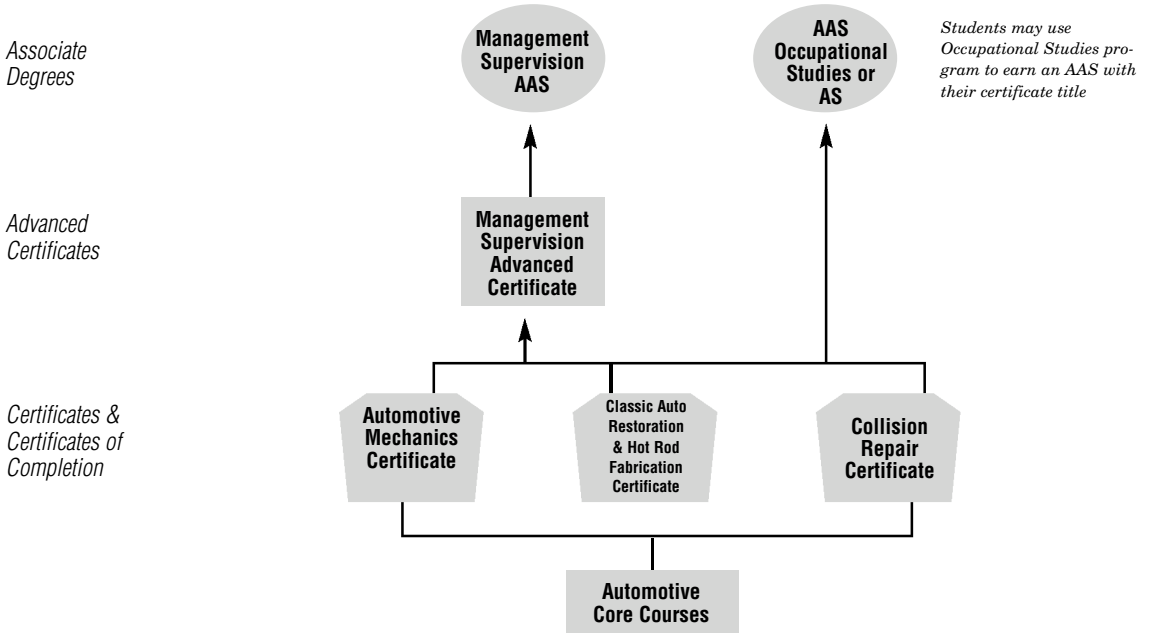
1. Complete one Group I course from each of the six General Education Areas 18-21
2. Complete a minimum of 30 credits in an occupational/technical area* 30
3. Complete the additional coursework as free electives to bring the total to 60 credits 12

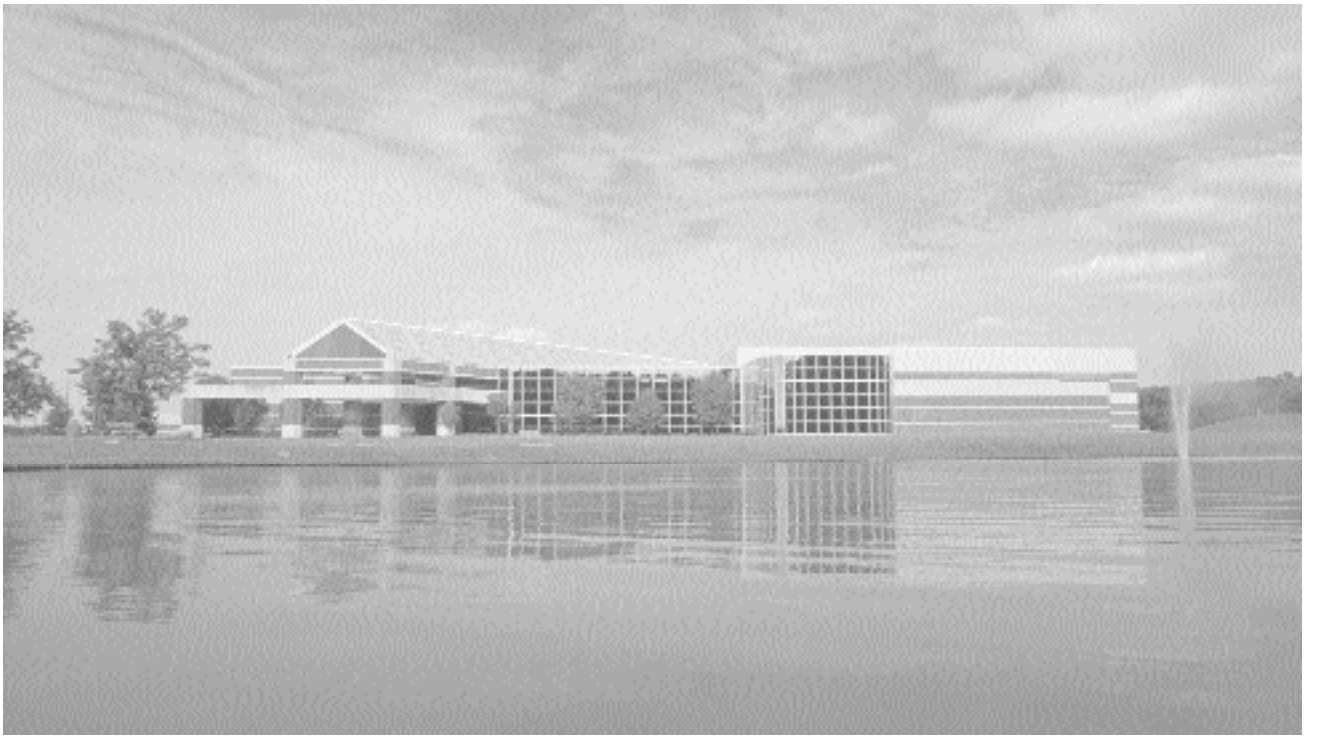
Minimum Credits Required for the Program: 60

Footnotes:

** If you complete a certificate program of 20 credits or more (or a certificate and additional credits in the same discipline area to bring the total to 20 credits) you may request to have the certificate title substituted for "Occupational Studies" as the title of your degree program. This applies only to certificates that do not already lead to an AAS degree program.*

Integrated Automotive Technologies Career Paths





Integrated Automotive Technologies

Auto Restoration and Hot Rod Fabrication (CFAR)

Certificate

This program prepares you to work on your own classic automobile or for a job in a classic car shop. The program gives you core skills in the areas of automotive welding, machining and mechanics. You also receive skills in complete auto restoration and maintaining classic automobiles.

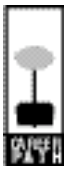
Health and Applied Technologies Division
Automotive Services Department

Advisor: Peter Pleitner

Core Courses		**(16 Credits)**
ABR 111	Auto Body I: Repair Fundamentals	4
ARF 115	Classic Auto Restoration I	4
ASV 141	Automotive Mechanics I	4
MTT 102	Machining for Auto Applications	2
WAF 100	Fundamentals of Welding	2
Major/Area Requirements		**(16 Credits)**
ARF 112	Classic Engines	4
ARF 117	Classic Auto Restoration II	4
ARF 215	Classic Auto Restoration III	4
ARF 217	Classic Auto Restoration IV	4
Minimum Credits Required for the Program:		**32**

Automotive Mechanics (CFAM)

Certificate



This program prepares you for entry-level jobs as an auto mechanic, where you will work under the supervision of an experienced automotive technician. You will receive core skills in the areas of automotive welding, machining and autobody repair. You also develop entry-level diagnosis and repair abilities in the areas of brakes, suspensions, engines, electrical systems, performance, and drive trains. Some employers require or prefer employees to have an associate degree as a condition for employment or advancement. *You can earn an AAS degree in Automotive Mechanics by completing the requirements for the Occupational Studies program (APOST). See the footnotes for additional courses that are recommended for earning an AAS degree in Automotive Mechanics.

Health and Applied Technologies Division
Automotive Services Department

Advisors: Russ Ferguson, Thomas Hemsteger, John Mann

Core Courses		**(16 Credits)**
ABR 111	Auto Body I: Repair Fundamentals	4
ARF 115	Classic Auto Restoration I	4
ASV 141	Automotive Mechanics I	4
MTT 102	Machining for Auto Applications	2
WAF 100	Fundamentals of Welding	2
Major/Area Requirements		**(14 Credits)**
ASV 142	Automotive Mechanics II	4
ASV 143	Automotive Mechanics III	4
ASV 144	Automotive Mechanics IV	4
ASV 248	Engine Performance	2
Minimum Credits Required for the Program:		**30**

Footnotes:

** Students can earn an associate degree in Auto Mechanics by following the Occupational Studies Program. The following courses are recommended for completing the program:*

ASV 241	Engine Repair (2)
ASV 242	Automatic Transmissions (2)
ASV 243	Manual Drive Trains and Axles (2)
ASV 244	Suspension and Steering (2)
ASV 245	Brakes (2)
ASV 246	Electrical Circuits (2)
ASV 247	Heating and Air Conditioning (2)

Collision Repair (CFCR)

Certificate

This program prepares you for entry-level jobs where you will repair and refinish damaged automobiles under thesupervision of an auto body technician. You will receive core skills in the areas of automotive welding, machining and mechanics. You also get training in using manuals for estimating job costs. Some employers require or prefer employees to have an associate degree as a condition for employment or advancement. *You can earn an AAS degree in Collision Repair by completing the requirements for the Occupational Studies program (APOST). See the footnotes below for additional courses that are recommended for earning an AAS degree in Collision repair.

Health and Applied Technologies Division
Automotive Services Department

Advisor: Lester Jordan

Core Courses **(16 Credits)**

ABR 111	Auto Body I: Repair Fundamentals	4
ARF 115	Classic Auto Restoration I	4
ASV 141	Automotive Mechanics I	4
MTT 102	Machining for Auto Applications	2
WAF 100	Fundamentals of Welding	2

Major/Area Requirements **(16 Credits)**

ABR 112	Auto Body II: Refinishing Fundamentals	4
ABR 113	Applied Body Welding & Estimation	4
ABR 123	Auto Body Repair Applications	4
ABR 124	Auto Refinishing Applications	4

Minimum Credits Required for the Program: **32**

Footnotes:

** Students can earn an associate degree in Collision Repair by following the Occupational Studies Program. The following courses are recommended for completing the program:*

ABR 130	Custom Painting (4)
ABR 219	Advanced Auto Body I (4)
ABR 224	Advanced Auto Body II (4)
ABR 226	Advanced Auto Body III
ABR 229	Advanced Auto Body IV (4)

Power Equipment Technology (CTPEQ)

Certificate

The Power Equipment Technology Certificate program provides students with the ability to repair all types of two-cycle and four-cycle engines, including motorcycles, all-terrain vehicles (ATV's), snowmobiles, commercial lawnmowers, chainsaws and outboard motors. Areas of instruction include theory of operation, maintenance and repair, and hydrostatic transmission repair.

Health and Applied Technologies Division
Automotive Services Department

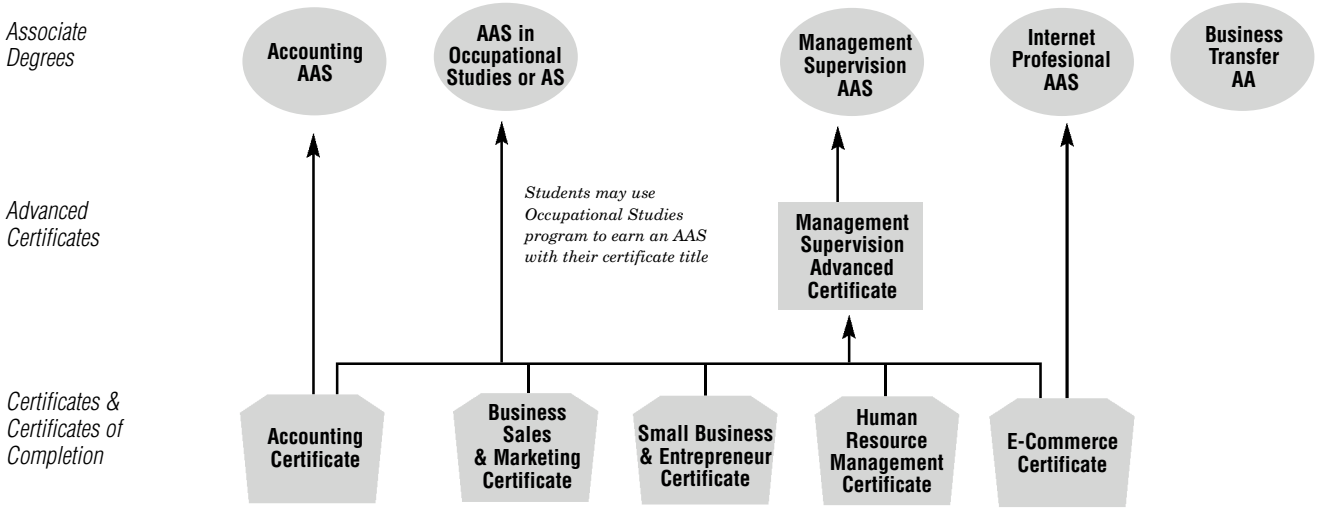
Advisor: William Schuster

Major/Area Requirements **(12 Credits)**

PET 100	Power Equipment Repair I	3
PET 110	Power Equipment Repair II	3
PET 120	Power Equipment Repair III	3
PET 130	Power Equipment Repair IV	3

Minimum Credits Required for the Program: **12**

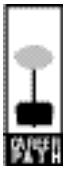
Business Career Paths



Career Path Key: Certificate/Certificate of Completion, Advanced Certificate, Associate's Degree, Post-Associate Certificate

Accounting (CTACC)

Certificate



This program prepares you for entry-level positions with accounting and tax services, CPA firms, and small businesses where you will provide accounting skills, computer skills, and office support. It also gives you credit that can be applied toward the Associate Degree in Accounting.

Business and Computer Technologies Division
Accounting Department

Advisors: Mark Johnston

Program Admission Requirements:

One year of high school algebra or MTH 097 or MTH 163 or minimum COMPASS Algebra score of 46

Major/Area Requirements		(14 Credits)
ACC 111	Principles of Accounting I	3
ACC 131	Computer Applications in Accounting	3
BOS 183	Spreadsheet Software Applications	2
CIS 110	Introduction to Computer Information Systems	3
TAX 101	Income Taxes for Individuals	3

Minimum Credits Required for the Program: 14

Accounting (APACCT)

Associate in Applied Science Degree

This program prepares you 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 your primary goal is to transfer into a bachelor's of business administration program in accounting, you should consider the Business Transfer program.

Business and Computer Technologies Division
Accounting Department

Advisors: Mark Johnston

Articulation:

This program has articulation agreements with the following four-year colleges:

- Cleary College
- Eastern Michigan University
- Madonna College
- Walsh College

Program Admission Requirements:

Two years of high school algebra or MTH 169 with a grade of "C" or better or minimum COMPASS Algebra score of 66 is required to enroll in MTH 181.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(20 Credits)
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
MTH 181	Mathematical Analysis I	4
Elective	Area 4: Natural Science Group I	3-4
Elective	Area 5: Social and Behavioral Science Group I	3
Elective *	Area 6: Arts and Humanities Group I	3

Major/Area Requirements		(38 Credits)
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
ACC 131	Computer Applications in Accounting	3
ACC 213	Intermediate Accounting	3
ACC 225	Managerial Cost Accounting	3
BMG 111	Business Law I	3
BMG 140	Introduction to Business	3
BMG 207	Business Communication	3
BMG 220	Principles of Finance	3
BMG 265	Business Statistics	3
BOS 183	Spreadsheet Software Applications	2
CIS 110	Introduction to Computer Information Systems	3
TAX 101	Income Taxes for Individuals	3

Required Support Courses		(6 Credits)
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3

Minimum Credits Required for the Program: 64

Footnotes:

** ENG 181 or ENG 214 will meet the cross-cultural requirement at EMU.*

Note: 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.

Business Sales & Marketing (CTBSLM)

Certificate

This program prepares you 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 Degree.

Business and Computer Technologies Division
Business Department

Advisor: Steve Ennes

Program Admission Requirements:

Competency in keyboarding is necessary for success in this program. If you need to improve your keyboarding skills you should take BOS 101A before beginning the program.

Major/Area Requirements		(12 Credits)
BMG 140 *	Introduction to Business	3
BMG 160	Principles of Sales	3
BMG 207	Business Communication	3
BMG 250	Principles of Marketing	3

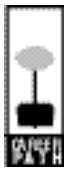
Minimum Credits Required for the Program: 12

Footnotes:

**BMG 140 should be taken before other program courses. For students with business experience, credit for BMG 140 may be awarded through credit for prior learning experience. Talk to your faculty advisor for more information.*

E-Commerce (CTECOM)

Certificate



The E-commerce certificate prepares you to support development of e-commerce web sites. You will gain knowledge and hands-on exposure to both business and technical concepts that enable you to analyze e-commerce business opportunities. Particular care is paid to the effects of the changing role of the consumer on competition. You also will prepare a competitive analysis of a small business e-commerce plan that includes setting up an e-commerce web site using a commercial software package. Business managers, customer support managers, operations managers, financial managers, entrepreneurs, and anyone who wants to pursue expertise in e-commerce will benefit from this certificate. You may pursue additional career opportunities in the field of web development by applying the courses taken for this certificate to the Internet Professional Associate in Applied Science Degree.

Business and Computer Technologies Division
Business Department

Advisor: Cheryl Gracie

Program Admission Requirements:

- Passing scores on all college placement tests
- Passing score on the Internet placement examination or INP 100 with a grade of "C" or better

Major/Area Requirements		(13 Credits)
BMG 155	Business on the Internet	3
BMG 215	Planning an E-Commerce Site for Business	3
INP 150	Basic HTML	2
INP 210	Internet Professional I	3
INP 220	Internet Professional II	2

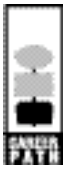
Minimum Credits Required for the Program: 13

Footnotes:

You must obtain the Certificate in E-Commerce at least one term prior to completing the course work for the Internet Professional Associate Degree in order to receive both.

Human Resource Management (CTHRSC)

Certificate



This program prepares you for entry-level jobs as a human resource assistant or specialist where you 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 you with basic management skills that will improve your ability to manage people.

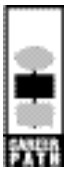
Business and Computer Technologies Division
Business Department
Advisor: Colette Young

Major/Area Requirements		(15 Credits)
BMG 150	Labor-Management Relations	3
BMG 200	Human Relations in Business	3
BMG 208	Principles of Management	3
BMG 240	Human Resources Management	3
BMG 279	Performance Management	3

Minimum Credits Required for the Program: 15

Management Supervision (CVMGTA)

Advanced Certificate



This program prepares you to move into a position as a supervisor, team leader, or first-line manager by adding basic supervisory skills to the occupational/technical skills you already possess. You will gain skills in problem-solving, decision-making, communicating, and motivating people in groups and teams through case studies and experiential exercises. The certificate may also be applied toward a WCC Associate in Applied Science Degree.

Business and Computer Technologies Division
Business Department

Advisor: Colette Young

Program Admission Requirements:

Successful completion of a career certificate or degree program or equivalent work experience.

Major/Area Requirements (12 Credits)

BMG 230	Introduction to Supervision	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 (APMGTM)

Associate in Applied Science Degree

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. You 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.

Business and Computer Technologies Division
Business Department

Advisor: Colette Young

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

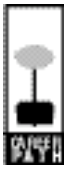
Requirements

1. Complete a certificate or degree in any occupational/technical area plus additional related credits to equal a minimum of 15 credit hours 15
2. Complete the Management Supervision Advanced Certificate (CVMGTA) 12
3. Complete an additional 9 credit hours of business courses (BMG) 9
4. Complete an additional 6 credit hours in the disciplines of ACC, BMG, CIS, and/or INP 6
5. Complete the General Education Requirements for the AAS Degree 18-21

Minimum Credits Required for the Program: 60

Small Business and Entrepreneurship (CTSBEA)

Certificate



This certificate provides students with the concepts, theory, and practice they need to start and operate a small business enterprise. Students acquire a fundamental knowledge of small business operations that is used to create a business plan that includes an in-depth plan of marketing and customer relationship management. Program studies include a significant number of opportunities to network in the community with agencies devoted to helping the entrepreneur get started, such as the local Small Business Development Corporation (SBDC). This certificate is appropriate for students who wish to become self-employed or simply become a more effective employee at a small business enterprise. This series of courses is a great way to refine that idea or concept you have for starting a business of your own.

Business and Computer Technologies Division
Business Department

Advisor: Cheryl Gracie

Program Admission Requirements:

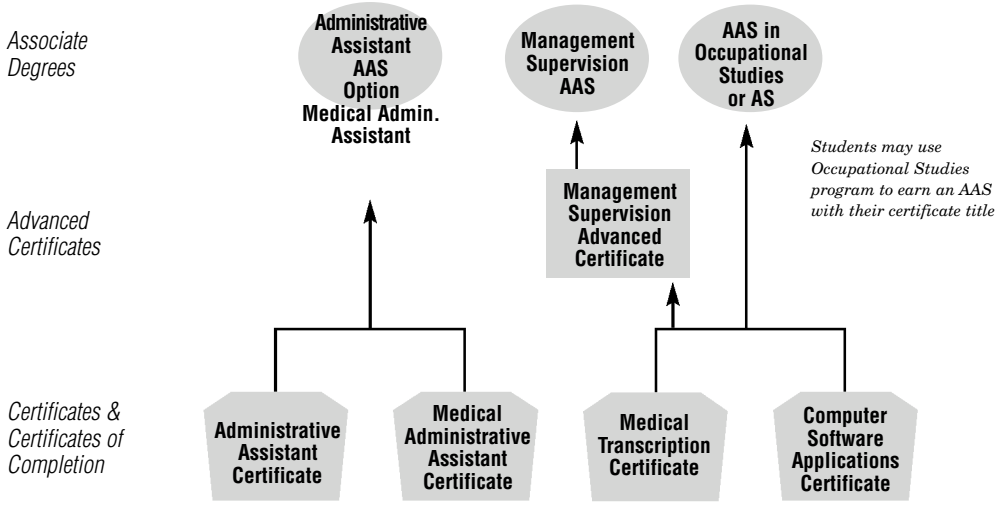
A high school course in basic computer skills including use of the Internet or INP 100 or CIS 099.

Major/Area Requirements (9 Credits)

BMG 109	Introduction to Small Business and Entrepreneurship	3
BMG 209	Business Planning for Entrepreneurs	3
BMG 292	Market Planning for Entrepreneurs	3

Minimum Credits Required for the Program: 9

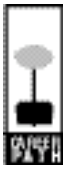
Business Office Career Paths



Career Path Key: Certificate/Certificate of Completion; Advanced Certificate; Associate's Degree; Post-Associate Certificate

Administrative Assistant Technology (CFAATC)

Certificate



This program prepares you 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 you credits that can be used toward an associate degree in Administrative Assistant Technology. Students need to demonstrate keyboarding skills of 30 wpm.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Lynn Allison, Eleanor Charlton, Rosalyn Culver, Dosye Thompson

Major/Area Requirements (22 Credits)

BOS 102	Document Formatting	3
BOS 107	Clerical Methods and Procedures	4
BOS 130	Office Financial Applications	3
BOS 157	Word Processing Applications I	2
BOS 183	Spreadsheet Software Applications	2
BOS 206	Scheduling and Internet Office Applications	2
BOS 250	Administrative Office Systems and Procedures	4
BOS 257	Word Processing Applications II	2

Required Support Courses (9 Credits)

CIS 100	Introduction to Software Applications	3
CIS 117	Windows Operating System	2
Choose:	ENG 100 Communication Skills or ENG 111 Composition I	4

Minimum Credits Required for the Program: 31

Administrative Assistant Technology (APAATD)

Associate in Applied Science Degree

This program prepares you for higher-level support positions in office settings where increased responsibilities require technical skills in desktop publishing, presentation software, accounting, and database software. You will also gain broader skills through completion of the general education courses required for an associate degree. Students need to demonstrate keyboarding skills of 30 wpm.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Lynn Allison, Eleanor Charlton, Rosalyn Culver, Dosye Thompson

Continuing Eligibility Requirements:
Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
MTH 163	Business Mathematics	3
Elective *	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

**BIO 102 is required for the Medical Administrative Assistant Option.*

Major/Area Requirements (22 Credits)

BOS 102	Document Formatting	3
BOS 107	Clerical Methods and Procedures	4
BOS 157	Word Processing Applications I	2
BOS 182	Database Software Applications	2
BOS 183	Spreadsheet Software Applications	2
BOS 206	Scheduling and Internet Office Applications	2
BOS 207	Presentation Software Applications	2
BOS 225	Advanced Document Preparation	3
BOS 257	Word Processing Applications II	2

Required Support Courses (8 Credits)

CIS 100	Introduction to Software Applications	3
CIS 117	Windows Operating System	2
Choose:	COM 102 Interpersonal Communication or ENG 122 Composition II	3

Program Options (12 Credits)

Complete the required courses in either the Administrative Assistant or Medical Administrative Assistant Option below. Check course descriptions for prerequisites.

Minimum Credits Required for the Program: 61

Administrative Assistant Technology Options

Administrative Assistant Option (ADMA) (12 Credits)

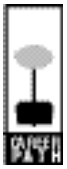
ACC 111	Principles of Accounting I	3
BOS 130	Office Financial Applications	3
BOS 208	Desktop Publishing for the Office	2
BOS 250	Administrative Office Systems and Procedures	4

Medical Administrative Assistant Option (MEDA) (15 Credits)

BOS 210	Medical Transcription	3
BOS 223	Medical Office Procedures	3
BOS 224	Medical Office Insurance and Billing	4
HSC 101	Healthcare Terminology	1
HSC 115	Medical Office and Laboratory Procedures	3
HSC 131	CPR/FPR and First Aid	1

Computer Software Applications (CTCSSC)

Certificate



This program focuses on upgrading your basic keyboarding and computer skills to intermediate or advanced levels in six typical office software applications, using the Microsoft Office Suite as well as a web browser. Successful completion of the required courses prepares you to take the Microsoft Office User Specialist (MOUS) certification exams. Students need to demonstrate keyboarding skills of 30 wpm.

Business and Computer Technologies Division
Computer Instruction Department

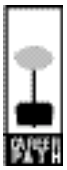
Advisors: Lynn Allison, Eleanor Charlton, Rosalyn Culver, Dosye Thompson

Major/Area Requirements		**(12 Credits)**
BOS 157	Word Processing Applications I	2
BOS 182	Database Software Applications	2
BOS 183	Spreadsheet Software Applications	2
BOS 206	Scheduling and Internet Office Applications	2
BOS 207	Presentation Software Applications	2
BOS 257	Word Processing Applications II	2

Minimum Credits Required for the Program: 12

Medical Administrative Assistant Technology (CFMATC)

Certificate



This program prepares you for entry-level positions in doctor's offices, clinics, hospitals, pharmaceutical or insurance companies, or public health facilities where you will prepare, analyze, and retrieve health information. You may also perform receptionist duties, prepare charts and reports, schedule and bill patients, code and submit bills to insurance companies, and carry out some patient care duties such as sterilizing instruments and taking vitals. The program also provides the first two semesters of the Associate in Applied Science Degree in Medical Administrative Assistant Technology.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Lynn Allison, Eleanor Charlton, Rosalyn Culver, Dosye Thompson

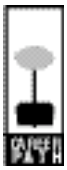
Major/Area Requirements		**(20 Credits)**
BOS 101C	Advanced Keyboarding	1
BOS 102	Document Formatting	3
BOS 157	Word Processing Applications I	2
BOS 223	Medical Office Procedures	3
BOS 224	Medical Office Insurance and Billing	4
BOS 257	Word Processing Applications II	2
HSC 101	Healthcare Terminology	1
HSC 115	Medical Office and Laboratory Procedures	3
HSC 131	CPR/FPR and First Aid	1

Required Support Courses		**(13 Credits)**
BIO 102	Human Biology	4
CIS 100	Introduction to Software Applications	3
CIS 117	Windows Operating System	2
Choose:	ENG 100 Communication Skills or ENG 111 Composition I	4

Minimum Credits Required for the Program: 33

Medical Transcription (CTMTR)

Certificate



This program prepares you for entry-level positions as a medical transcriptionist in a hospital, doctor's office, or private transcription company. It also gives you a foundation for work on the Certificate or Associate in Applied Science degree in Medical Administrative Assistant Technology. Students need to demonstrate keyboarding skills of 40 wpm.

Business and Computer Technologies Division

Computer Instruction Department

Advisors: Lynn Allison, Eleanor Charlton, Rosalyn Culver, Dosye Thompson

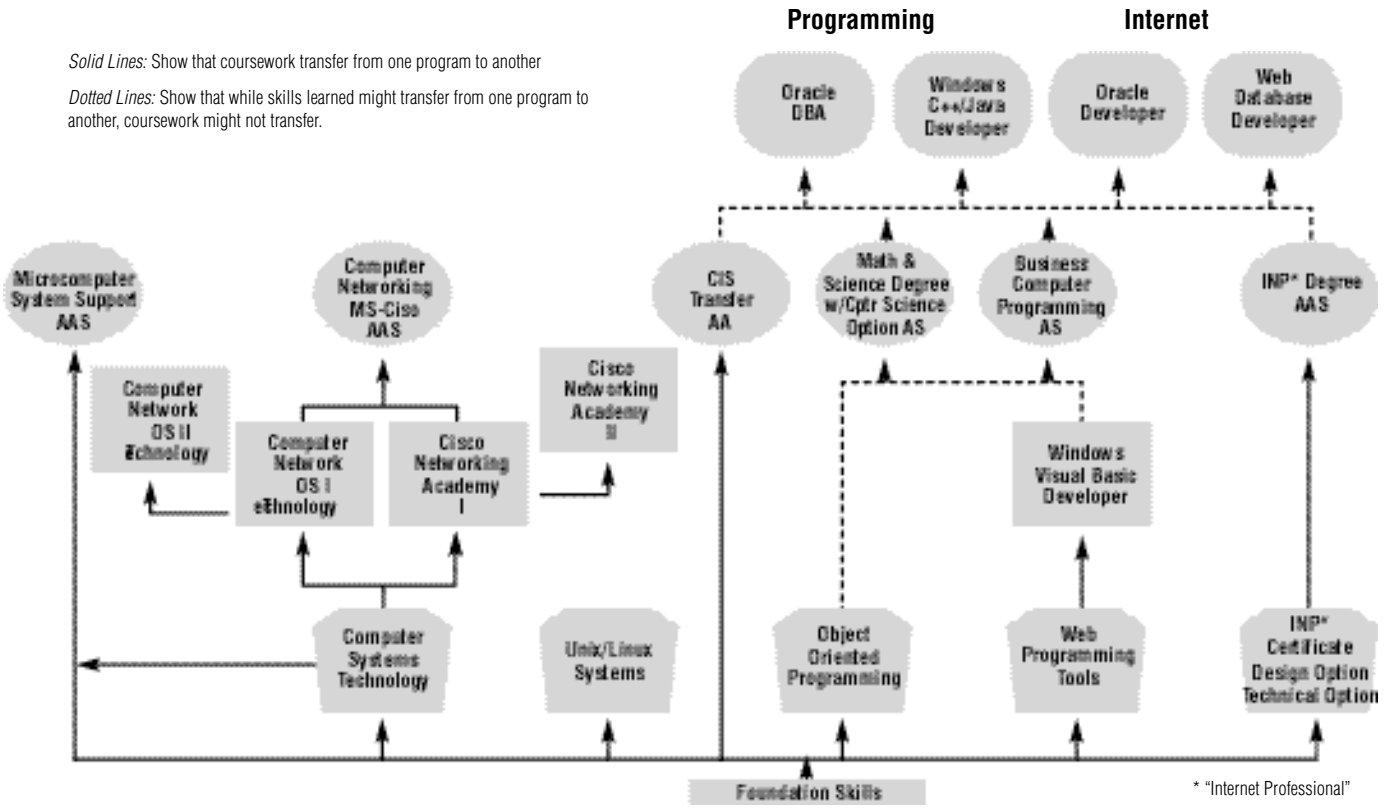
Major/Area Requirements		**(17 Credits)**
BIO 102	Human Biology	4
BOS 102	Document Formatting	3
BOS 157	Word Processing Applications I	2
BOS 210	Medical Transcription	3
BOS 220	Medical Transcription II	4
HSC 101	Healthcare Terminology	1

Minimum Credits Required for the Program: 17

Computer Studies Career Paths

Solid Lines: Show that coursework transfer from one program to another

Dotted Lines: Show that while skills learned might transfer from one program to another, coursework might not transfer.

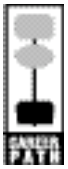


* "Internet Professional"

Internet

Internet Professional (CFINPC)

Certificate



This program prepares you for a job as an Internet professional where you will provide services, which might include: designing web pages, administering a web site, programming for the web, or conducting business on the web depending on whether you choose the design or technical option. The program also provides you with a well-rounded experience in all aspects of Internet development and prepares you for industry certification examinations.

Business and Computer Technologies Division
Internet Professional Department

Advisors: Elizabeth Crane, Catherine Hayes, Laurence Krieg

Program Admission Requirements:

Score of Pass on Internet placement test or INP 100 with a minimum grade of C-

Continuing Eligibility Requirements:

A minimum grade of C- is required in all INP courses to progress in the program.

Major/Area Requirements (16 Credits)

ENG 208	Advanced Technical Communication I	3
INP 150	Basic HTML	2
INP 210	Internet Professional I	3
INP 220	Internet Professional II	2
INP 270	Internet Professional III	3
INP 290 *	Internet Professional IV	3

** INP 290 is a capstone course that should be taken in the last semester of the program.*

Program Options (20 Credits)

Complete the required courses in either the Design Option or the Technical Option below. Check course prerequisites to determine the sequence for taking courses.

Minimum Credits Required for the Program: 36

Internet Professional Options

Design Option (20 Credits)

GDT 112	Graphic Communication I	4
INP 152	Web Imaging I	3
INP 212	Web Imaging II	3
INP 272	Web Animation	3
INP 282	Web Audio-Video	3
Elective **	Choose four credits from: GDT 100, GDT 139, or GDT 140	4

***See a program advisor to choose appropriate electives.*

Technical Option (22 Credits)

CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX Fundamentals	3
CIS 265	Programming the Web	3
CIS 286	UNIX Systems Administration	4
INP 275	Web Database	3
INP 285	Web Server Security	3
Elective	Choose one course from: CPS 120, CPS 171, or CPS 185	3-4

Internet Professional (APINPD)

Associate in Applied Science Degree

This program prepares you for a job as an Internet professional where you will provide services which might include designing web pages, administering a web site, programming for the web, or conducting business on the web depending on whether you choose the design or technical option. The program also provides you with a well-rounded experience in all aspects of Internet development and includes the courses you need to complete the core curriculum requirements for an associate degree. It also prepares you for industry certification examinations.

Business and Computer Technologies Division
Internet Professional Department

Advisors: Elizabeth Crane, Catherine Hayes, Laurence Krieg

Program Admission Requirements:

- Score of Pass on the INP placement test or INP 100 with a "C-" or better is required to enroll in INP courses.
- Minimum COMPASS Pre-Algebra score of 37 or MTH 090 with a grade of "C" or better is required to enroll in MTH 151.

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

Elective	Area 1: Writing (If transferring, choose ENG 111 or ENG 122)	3-4
Elective	Area 2: Speech (If transferring, choose COM 101)	3
Elective *	Choose one of the following: MTH 151, 169, 181, 182, 191, 192, or 197	4-5
Elective **	Area 4: Natural Science, Group I	3-4
Elective ***	Area 5: Social and Behavioral Science, Group I	3
Elective ***	Area 6: Arts and Humanities, Group I	3

**If transferring to EMU choose MTH 181*
***If transferring choose a lab course*
****If transferring see a counselor to select a course*

Major/Area Requirements **(25 Credits)**

BMG 155	Business on the Internet	3
CPS 120	Intro to Computer Science	3
ENG 208	Advanced Technical Communication I	3
INP 150	Basic HTML	2
INP 210	Internet Professional I	3
INP 220	Internet Professional II	2
INP 270	Internet Professional III	3
INP 290 *	Internet Professional IV	3
Elective	Choose one: BMG 109, BMG 215, BMG 230, BMG 272	3

** INP 290 is a capstone course that should be taken in the last semester of the program*

Program Options **(20 Credits)**

Complete the required courses in either the Design Option or the Technical Option below. Check course prerequisites to determine the sequence for taking courses.

Minimum Credits Required for the Program: **64**

Footnotes:
Optional: In addition to the program requirements, students have the option to take INP 174 Internet Professional Co-op I and INP 274 Internet Professional Co-op II

Internet Professional Options

Design Option (DES) **(20 Credits)**

GDT 112	Graphic Communication I	4
INP 152	Web Imaging I	3
INP 212	Web Imaging II	3
INP 272	Web Animation	3
INP 282	Web Audio-Video	3
Elective **	Choose four credits from: GDT 100, GDT 139, or GDT 140	4

***See a program advisor to choose appropriate electives.*

Technical Option (TEC) **(19 Credits)**

CIS 121	Linux/UNIX Fundamentals	3
CIS 265	Programming the Web	3
CIS 286	UNIX Systems Administration	4
INP 275	Web Database	3
INP 285	Web Server Security	3
Elective	Choose one of the following: CPS 120, CPS 171, or CPS 185	3-4

Computer Programming

Business Computer Programming (APBCP)

Associate in Applied Science Degree

This program prepares you for entry-level or trainee computer programmer positions, where you'll work with a systems analyst in an applications environment to support information processing functions. The program also gives you the opportunity to focus your program in a particular discipline by choosing from a list of elective courses covering topics such as UNIX, web site management, Visual Basic programming, and object-oriented programming, among others.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Phil Geyer, Clarence Hasselbach, Khaled Mansour, Roland Meade, John Rinn

Program Admission Requirements:

Students need one semester of high school word processing and spreadsheets or CIS 100 or permission of program advisor to enroll in CIS 110

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements **(19 Credits)**

Choose:	MTH 169 Intermediate Algebra or MTH 176 College Algebra or MTH 181 Mathematical Analysis I	4
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Sciences, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements **(31 Credits)**

CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX Fundamentals	3
CIS 282	Relational Database Concepts & Applications	3
CIS 288	Systems Analysis and Design	3
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
ENG 245	Career Practices Seminar	2
Choose:	CIS 221 UNIX Tools and Scripts or CIS 286 UNIX Systems Administration	2-4
Elective	Complete one course from: CIS 174, 238, 265, 269, 185, 285, 293, 295, CNT 206, 211, or INP 150	3-4

Required Support Courses **(12 Credits)**

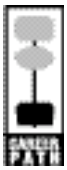
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
BMG 200	Human Relations in Business	3
Elective	Complete one course from: BMG 150, BMG 208, BMG 230, or BMG 240	3

Minimum Credits Required for the Program: **62**

Footnotes:
Note: See also the Computer Science Concentration of the Math and Science Program in the Transfer Section

Object Oriented Programming (CTOOPC)

Certificate



This program prepares you for jobs as a computer programmer where you will write code and develop applications utilizing object-oriented programming techniques. You will also develop skills that can be applied to the related jobs of programmer/analyst and software architect and documentation of accomplishments in object-oriented programming skills. The program also gives you twenty-three credits to apply toward the Associate in Applied Science Degree in Business Computer Programming.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Phil Geyer, Clarence Hasselbach, Usha Jindal, Khaled Mansour, Janet Remen

Program Admission Requirements:

- Students must have a minimum COMPASS Algebra score of 66 or complete MTH 169 with a grade of "C" or better to enroll in CPS 171. Two years of high school algebra is recommended.
- Students need one semester of high school word processing and spreadsheets or CIS 100 or permission of program advisor to enroll in CIS 110.

Major/Area Requirements (23 Credits)

CIS 110	Introduction to Computer Information Systems	3
CIS 117	Windows Operating System	2
CIS 121	Linux/UNIX Fundamentals	3
CIS 288	Systems Analysis and Design	3
CPS 171	Introduction to Programming with C++	4
CPS 272	Data Structures with C++	4
Choose:	CPS 271 Object Features of C++ or CPS 290 Object-Oriented Programming	4

Minimum Credits Required for the Program: 23

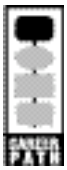
Footnotes:

The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	II	III	IV
CIS 110	CIS 121	CIS 288	CPS 272
CIS 117	CPS 171	CPS 271	or CPS 290

Oracle Database Administration (CPODA)

Post-Associate Certificate



This program gives you advanced skills to increase your marketability as an information systems administrator. The program builds on the skills you already acquired through a degree program in computer information systems or from your experience as an information technology professional. The program also prepares you for the Oracle Database Administrator certification exams.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Clarence Hasselbach, Khaled Mansour

Program Admission Requirements:

Completion of one of the following degree programs and a grade of 2.0 or better in CIS 282 and CPS 171:

- Computer Information Systems Transfer (AACIST)
- Math and Science (ASMSAS) with a Computer Science Concentration (COMS)
- Business Computer Programming (APBCP)
- Internet Professional (APINPD) with the Technical Option

Major/Area Requirements (13 Credits)

CIS 291	Introduction to Oracle SQL/ and PL/SQL	4
CIS 296	Oracle Architecture and Administration	3
CIS 297	Oracle Backup and Recovery	2
CIS 298	Oracle Performance and Tuning	3
CIS 299	Oracle Network Administration	1

Minimum Credits Required for the Program: 13

Oracle Developer (CPORAC)

Post-Associate Certificate

This program prepares you for a job as an Oracle database application developer. These courses are intended for a person who already has a background in object oriented programming and relational database theory and practice. The program also gives you skills that you can apply to the related jobs of programmer/analyst, database application developer, Oracle developer, Web database developer, or e-commerce software architect. You will also be prepared for completion of the certification examinations that are offered by Oracle University.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Clarence Hasselbach, Khaled Mansour

Program Admission Requirements:

Students must complete one of the following degree programs with a GPA of 2.0 or better:

- Computer Information Systems Transfer (AACIST)
- Math and Science (ASMSAS) with a Computer Science Concentration (COMS)
- Business Computer Programming (APBCP)
- Internet Professional with the Technical Option (APINPD)

The following courses in the above programs must be completed with a grade of "C" or better:

- CIS 282 Small Systems Database
- CPS 171 Introduction to Programming with C++

Major/Area Requirements **(11 Credits)**

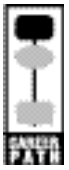
CIS 291	Introduction to Oracle SQL/ and PL/SQL	4
CIS 292	Introduction to Oracle Developer	3
CIS 293	Advanced Oracle Developer	4

Minimum Credits Required for the Program: 11

Footnotes:
The courses in this program must be taken in sequence

Web Database Developer (CPWDD)

Post-Associate Certificate



This post-associate program gives you advanced skills in developing Web databases and e-commerce applications. It is intended for students with a strong programming background and prior experience with SQL. The program also gives you skills that can be applied to the jobs of e-commerce software architect, e-business strategist, Java software developer, and Web application developer.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Clarence Hasselbach, Khaled Mansour

Program Admission Requirements:

Students must complete one of the following degree programs with a GPA of 2.0 or better:

- Computer Information Systems Transfer (AACIST)
- Math and Science (ASMSAS) with a Computer Science Concentration (COMS)
- Business Computer Programming (APBCP)
- Internet Professional with the Technical Option (APINPD)

The following courses in these programs must be completed with a grade of "C" or better:

- CIS 282 Small Systems Database
- CPS 185 Introduction to Visual Basic Programming

Major/Area Requirements **(15 Credits)**

CIS 266	Web Programming Using Active Server Pages	4
CIS 269	Java Certification Preparation	4
CIS 278	Advanced Java Programming	3
CPS 276	Web Programming Using Apache, MySQL, and PHP	4

Minimum Credits Required for the Program: 15

Web Programming Tools (CTWPTC)

Certificate

This program prepares you for jobs requiring server-side programming skills in Common Gateway Interface programming, Java programming, and in the writing of HTML code and JavaScript. It also gives you skills that can be applied to the related jobs of Java software developer, Web programmer, and Web application developer. Students should already be familiar with HTML.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Clarence Hasselbach, Phil Geyer, John Rinn

Program Admission Requirements:

Students must complete one semester of high school word processing and spreadsheets or CIS 100 with a grade of "C" or better or receive permission of instructor to enroll in CIS 110.

Major/Area Requirements **(24 Credits)**

CIS 110	Introduction to Computer Information Systems	3
CIS 117	Windows Operating System	2
CIS 121	Linux/UNIX Fundamentals	3
CIS 265	Programming the Web	3
CIS 269	Java Certification Preparation	4
CIS 282	Relational Database Concepts & Applications	3
CPS 171	Introduction to Programming with C++	4
INP 150	Basic HTML	2

Minimum Credits Required for the Program: 24

Footnotes:
Note: The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	II	III
CIS 110	CIS 121	CIS 265
CIS 117	CPS 171	CPS 277
	INP 150	CIS 282

Windows C++/Java Developer (CPWNCJ)

Post-Associate Certificate

This post-associate program gives you advanced skills in developing graphical user interface programs on a PC.These courses are intended for students who already have a strong background in C++ programming and who need to acquire skills in Windows application development in Visual C++ and Java. The program also gives you skills that can be applied to the related jobs of programmer/analyst, Windows programmer, or PC programmer. Prior coursework or experience in using HTML to compose web pages is helpful.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Clarence Hasselbach, Khaled Mansour

Program Admission Requirements:

Students must complete one of the following degree programs with a GPA of 2.0 or better:

- Computer Information Systems Transfer (AACIST)
- Math and Science (ASMSAS) with a Computer Science Concentration (COMS)
- Business Computer Programming (APBCP)
- Internet Professional with the Technical Option (APINPD)

Major/Area Requirements		**(12 Credits)**
CPS 293 *	Windows Programming with C++ and C#	4
CPS 295	Advanced Visual C++ Windows Programming	4
CIS 269	Java Certification Preparation	4

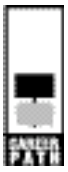
Minimum Credits Required for the Program: 12

Footnotes:

**CPS 293 must be taken before CPS 295*

Windows Visual Basic Developer (CVWNVB)

Advanced Certificate



This program prepares you for a job as a developer of graphical user interface programs on a PC. It is intended for students who need to acquire skills in Windows application development in Visual Basic and for students whowish to acquire skills in programming active server pages. The program also gives you skills that can be applied to the related jobs of programmer/analyst, Windows programmer, PC programmer, and Web programmer.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Khaled Mansour, John Rinn

Program Admission Requirements:

- Students must complete the Web Programming Tools Certificate (CTWPTC) with a GPA of 2.0 or better

Major/Area Requirements		**(12 Credits)**
CIS 266	Web Programming Using Active Server Pages	4
CPS 185	Introduction to Visual Basic Programming	4
CPS 285	Advanced Visual Basic Programming	4

Minimum Credits Required for the Program: 12

Computer Systems

Computer Networking Academy I (CVCNT)

Advanced Certificate

This Cisco Networking Academy program prepares you for a job as a network technician where you 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 you the knowledge you'll need to pass the Cisco Certified Network Associate exam.

Business and Computer Technologies Division
Computer Instruction Department
Electricity/Electronics Department

Advisors: Michael Galea, James Lewis, Roland Meade, John Trame

Program Admission Requirements:

- Students must complete the Computer Systems Technology Certificate (CTCSTC) with a GPA of 2.0 or better or have equivalent industry experience.

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 II (CVCNTA)

Advanced Certificate

This Cisco Networking Academy program provides you with the advanced skills needed for a job as a network administrator/engineer, where you will design, install, configure, and troubleshoot Local and Wide Area Networks. The focus is placed on internetworking hardware. It also prepares you to pass the Cisco Certified Network Professional examinations.

Business and Computer Technologies Division
Computer Instruction Department
Electricity/Electronics Department

Advisors: Michael Galea, James Lewis, John Trame

Program Admission Requirements:

Students must complete the Computer Networking Academy I (CVCNT) program with a GPA of 2.0 or better.

Major/Area Requirements		**(20 Credits)**
CNT 246	Advanced Routing Configuration	4
CNT 256	Remote Access Networks	4
CNT 266	Multi-Layer Switching	4
CNT 266	Multi-Layer Switching	4
CNT 276	Network Troubleshooting	4

Minimum Credits Required for the Program: 20

Computer Networking Operating Systems I (CVCNO)

Advanced Certificate

This program helps prepare you for a profession as a Microsoft MCSA (Microsoft Certified Systems Administrator) where you will install, configure, and troubleshoot Microsoft client-server networks. The program is designed to deploy and manage Windows 2000 components in real life situations. Installation, configuration, testing, management, monitoring, and troubleshooting of the Windows 2000 Systems are all emphasized. Most importantly, specific activities are tested out on Workstations to insure they work just as in a real business environment. The program is for both those who are working towards Microsoft certifications i.e. MCSA, MCSE and those who may already have the certifications and want to learn how to implement these technologies. Individuals who have an interest in learning Windows 2000 technologies are also welcome.

Business and Computer Technologies Division
Computer Instruction Department
Electricity/Electronics Department

Advisors: Michael Galea, James Lewis, John Trame

Program Admission Requirements:

Students must complete the Computer Systems Technology Certificate Program (CTCSTC) or ELE 150 and ELE 225A with a minimum grade of "C" or pass the COMPTIA certification.

Major/Area Requirements		**(14 Credits)**
CNT 201	Administering Microsoft Windows 2000 Professional	3
CNT 211	Administering Microsoft Windows 2000 Server	4
CNT 221	Implementing a Microsoft Windows Network Infrastructure	3
CNT 222	Mangaging a Microsoft Windows 2000 Network Environment	4

Minimum Credits Required for the Program: 14

Footnotes:

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

Computer Networking Operating Systems II (CVCNOP)

Advanced Certificate

This post associate certificate program helps prepare you for a profession as a Microsoft MCSE (Microsoft Certified Systems Engineer). It is developed to emphasize the design of a Microsoft Client/Server/Network structure, which is the next step after mastering the implementation and administration topics which are covered in the prerequisite program for the MCSA. Two courses covering Active Directory are included, one is an implementation course and the other focuses on design. There are two additional design courses that deal with network development and security. An elective course that covers SQL Server is also available to take in place of one of the design courses.

Business and Computer Technologies Division
Computer Instruction Department
Electricity/Electronics Department

Advisors: Michael Galea, James Lewis. John Trame

Program Admission Requirements:

Students must complete the Computer Networking Operating Systems I Certificate with a GPA of 2.0 in the program.

Major/Area Requirements		**(15 Credits)**
CNT 231	Administering Microsoft Windows 2000 Directory	4
CNT 241 *	Designing a Windows 2000 Directory Services Infrastructure	4
CNT 251 *	Designing Windows Security	3
CNT 261 *	Designing a Windows Network Infrastructure	4

Minimum Credits Required for the Program: 15

Footnotes:

** This program is designed to be completed in a two semester time frame. CIS 291 can be substituted for any of the design courses listed above.*

Computer Networking (APCNTM)

Associate in Applied Science Degree

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

Business and Computer Technologies Division
Computer Instruction Department
Electricity/Electronics Department

Advisors: Michael Galea, Phil Geyer, Roland Meade, John Rinn, John Trame

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

Requirements

1. Complete the Certificate in Computer Systems Technology 22
2. Complete the Advanced Certificate in Computer Networking Academy I or
   Complete the Advanced Certificate in Computer Networking Operating Systems I 14-16
3. Complete General Education Requirements for the AAS Degree 18-21
4. Complete 1-6 additional credits to bring the total to 60 credits 6

Minimum Credits Required for the Program: 60

Computer Systems Technology (CTCSTC)

Certificate

This program prepares you for employment as a microcomputer service technician. While preparing you to pass the Computer Technology Industry Association's (CompTIA) A+ certification examination, the program goes well beyond the requirements of the exam. It develops your 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.

Business and Computer Technologies Division
Electricity/Electronics Department

Advisors: Michael Galea, Phil Geyer, James Lewis, Catherine Storie

Major/Area Requirements		**(22 Credits)**
CIS 121	Linux/UNIX Fundamentals	3
CPS 120	Intro to Computer Science	3
ELE 118	MS DOS for Technicians	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 155	Advanced Computer Concepts and Troubleshooting	4
ELE 216A	Modem Hardware Install, Config. & Troubleshooting	2
ELE 225A	Network Installation and Troubleshooting	2
Choose:	ELE 174 ELE Co-op Education I or ELE 299 Customer Relations	2

Minimum Credits Required for the Program: 22

Microcomputer System Support (APMSS)

Associate in Applied Science Degree

This program prepares you for jobs where you support the end user in hardware and software matters and where you analyze the user's needs and implement the application packages best suited for the situation. This program also emphasizes people skills.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Phil Geyer, Roland Meade, John Rinn

Program Admission Requirements:

- Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better to enroll in MTH 169. One year of high school algebra is recommended.
- Students must complete a high school course in word processing and spreadsheets or CIS 100 with a grade of "C" or better, or receive permission of the instructor to enroll in CIS 110.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

MTH 169	Intermediate Algebra	4
Elective	Area 1: Writing	3-4
Elective *	Area 2: Speech	3
Elective	Area 4: Natural Science Group I	3-4
Elective	Area 5: Social and Behavioral Science Group I	3
Elective	Area 6: Arts and Humanities Group I	3

Major/Area Requirements (36 Credits)

BOS 157	Word Processing Applications I	2
BOS 182	Database Software Applications	2
BOS 183	Spreadsheet Software Applications	2
CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX Fundamentals	3
CIS 288	Systems Analysis and Design	3
CIS 290	Microcomputer System Support	4
ELE 118	MS DOS for Technicians	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 155	Advanced Computer Concepts and Troubleshooting	4
ELE 225A	Network Installation and Troubleshooting	2
Choose:	CPS 171 Introduction to Programming with C++ or CPS 185 Introduction to Visual Basic Programming	4
Elective	Complete one course from: CIS 174, CIS 221, CIS 238, CIS 265, CIS 286, CNT 211, COM 102, ELE 216A, ELE 216B	1-4

Required Support Courses (11 Credits)

ACC 111	Principles of Accounting I	3
ENG 245	Career Practices Seminar	2
Choose:	BMG 200 Human Relations in Business or PSY 100 Introductory Psychology	3
Elective	Complete one course from:BMG 150, BMG 208, BMG 230, BMG 240	3

Minimum Credits Required for the Program: 66

Footnotes:
**COM 101 is recommended*

Unix/Linux Systems (CTUNLN)

Certificate

This program prepares you for jobs installing, configuring, and managing various UNIX and Linux operating systems. You will learn about UNIX/Linux file and directory organization, basic and advanced commands, shell scripting, networking, UNIX/Linux system administration and more. These skills can be applied to the related jobs of computer operator, system administrator, data recovery planner, and computer security coordinator.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Phil Geyer

Program Admission Requirements:

- Students must complete a high school course in word processing and spreadsheets or CIS 100 with a grade of "C" or better, or receive permission of the instructor to enroll in CIS 110.

Major/Area Requirements (16 Credits)

CIS 110	Introduction to Computer Information Systems	3
CIS 121	Linux/UNIX Fundamentals	3
CIS 204	Linux Installation and Configuration	3
CIS 221	UNIX Tools and Scripts	3
CIS 286	UNIX Systems Administration	4

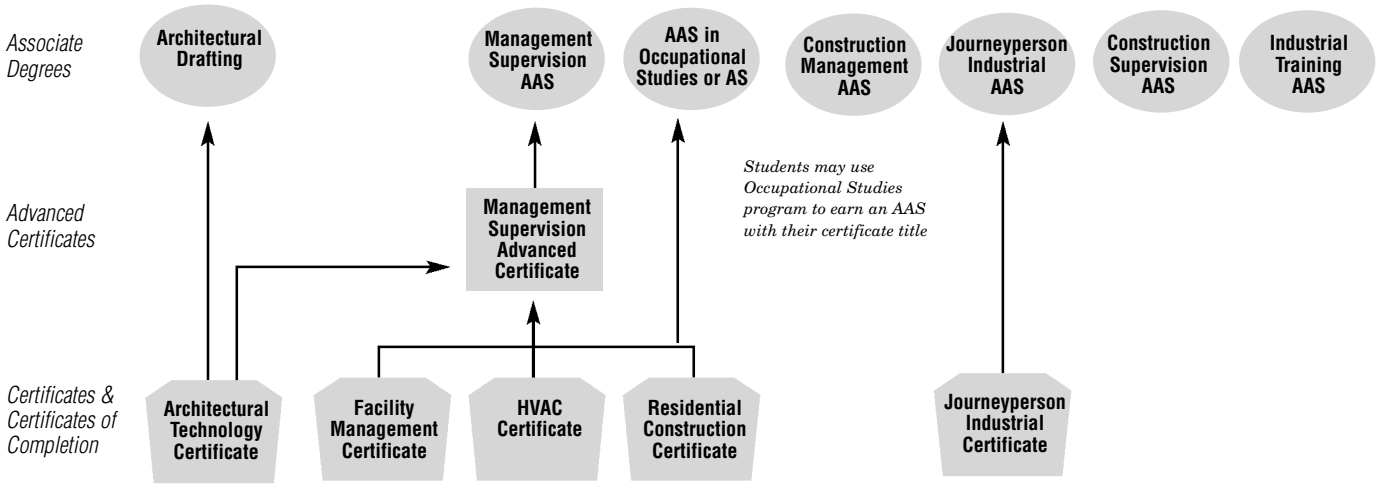
Minimum Credits Required for the Program: 16

Footnotes:

The following sequence of courses is recommended. Please check course descriptions for pre and co-requisites:

I	II	III
CIS 110	CIS 121	CIS 204
CIS 221	CIS 286	

Construction and Building Trades Career Paths



Career Path Key: Certificate/Certificate of Completion; Advanced Certificate; Associate's Degree; Post-Associate Certificate

Architectural Technology (CTARCT)

Certificate

This program prepares you for jobs as an architectural drafting detailer where you are expected to draw each part shown on a layout by giving dimensions, materials, and any other necessary information to make the drawing clear and complete.

Business and Computer Technologies Division
Drafting Department

Advisor: James Teevens

Program Admission Requirements:

Students must complete one year of high school drafting or ARC 099 with a grade of "C" or better to enroll in ARC 111.

Major/Area Requirements (18 Credits)

ARC 111	Architectural Drawing I	6
ARC 117	Construction Materials	3
ARC 120	Mechanical & Electrical Systems for Buildings	3
ARC 122	Architectural Drawing II	6

Minimum Credits Required for the Program: 18

Architectural Drafting (APAD)

Associate in Applied Science Degree

This program prepares you for positions as an architectural drafting technician where you will prepare detailed drawings based on rough sketches, specifications, and calculations made by scientists, engineers, architects, and designers. You will also calculate the strength, quality, quantity, and cost of materials.

Business and Computer Technologies Division
Drafting Department

Advisor: James Teevens

Program Admission Requirements:

- Students must have a minimum score of 46 on the COMPASS Algebra test or complete MTH 097 with a grade of "C" or better to enroll in MTH 152. One year of high school algebra is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

PHY 105	Conceptual Physics	4
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective *	Area 3: Mathematics, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements (42 Credits)

ARC 100	Specifications	1
ARC 109	Site Layout	3
ARC 111	Architectural Drawing I	6
ARC 117	Construction Materials	3
ARC 120	Mechanical & Electrical Systems for Buildings	3
ARC 122	Architectural Drawing II	6
ARC 210	Structure in Architecture	2
ARC 213	Architectural Drawing III	6
ARC 218	3D Presentation/CAD	3
ARC 224	Architectural Drawing IV	6
ARC 227	Estimating Construction Costs	3

Minimum Credits Required for the Program: 61

Footnotes:

**For Area 3, MTH 152 is recommended*

Note: Please check course descriptions for pre and co-requisites

Construction Management (AACMG)

Associate in Arts Degree

This program prepares you 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 and Ferris State 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.

Health and Applied Technologies Division
Construction Institute

Advisor: Patricia Crider

Articulation:

This program has articulation agreements with:

- Eastern Michigan University, College of Technology, for the Bachelor of Science in Construction Management.
- Ferris State University, College of Technology, for the Bachelor of Science in Construction
- The program meets MACRAO plus EMU's additional four requirements. Students must have their WCC transcripts endorsed for MACRAO completion.

- Copies of articulation agreements can be obtained from the Counseling Office or a program advisor.

Program Admission Requirements:

A minimum COMPASS Algebra score of 66, or MTH 169 with a "C" or better is required to enroll in CMG 150 and MTH 160. Two years of high school algebra is recommended.

Continuing Education Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(30 Credits)
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
ENG 122	Composition II	3
MTH 160	Basic Statistics	4
PHL 205	Ethics	3
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Choose:	CEM 105 Fundamentals of Chemistry or CEM 111 General Chemistry I	4
Choose:	ENG 181 African American Literature or ENG 214 Literature of the Non-Western World	3

Major/Area Requirements		(17 Credits)
ARC 117	Construction Materials	3
CMG 130	Construction Site Safety and MIOSHA Regulations	3
CMG 150	Introduction to Construction Management	3
CMG 170	Construction Graphics	4
CMG 200	Construction Systems	4

Required Support Courses		(21 Credits)
ACC 111	Principles of Accounting I	3
BMG 207	Business Communication	3
BMG 240	Human Resources Management	3
CIS 100	Introduction to Software Applications	3
ECO 211	Principles of Economics I	3
MTH 178	General Trigonometry	3
Choose:	BMG 106 Legal Basics in Business or BMG 111 Business Law I	3

Minimum Credits Required for the Program: 68

Construction Supervision (APCNSP)

Associate in Applied Science Degree

This program gives indentured apprentices and journeypersons of the United Association of Plumbers and Pipefitters the opportunity to apply their work in a trade specialty toward an associate degree in Construction Supervision. In addition to four courses in Construction Supervision, students will complete general education courses and receive non-traditional credit for their work experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinklerfitting.

Health and Applied Technologies Division
Technical Education Department

Advisor: Patricia Crider

Program Admission Requirements:

Open only to United Association of Plumbers Apprentices/Journeymen

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(18 Credits)
Elective *	Complete one course from Group I of each of the six General Education Areas	18-20

Major/Area Requirements		(45 Credits)
Electives**	Complete a specialization in plumbing, pipefitting, HVAC, or sprinklerfitting	30
UAS 111	Introduction to Construction Supervision I	3
UAS 122	Construction Supervision II	3
UAS 211	Construction Supervision III	3
UAS 222	Project Management in the Construction Industry	3
UAS 226	Legal Aspects of Construction	3

Minimum Credits Required for the Program: 63

Footnotes:

**Credit for general education courses may be transferred from accredited colleges or universities in the United States*

*** Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.*

Facility Management Administration (CTFMA)

Certificate

This program prepares you for jobs in the field of facility management where you will manage corporate property assets. The program provides you with skills and knowledge in managing real property assets specifically in the design, operation, and maintenance of building systems. Management of the work environment, planning and project management, real estate, and general service activities are covered. The program helps prepare you for the Building Owners and Managers Institute (BOMI) certification.

Health and Applied Technologies Division
Technical Education Department

Advisor: Les Pierce

Major/Area Requirements		**(10 Credits)**
FMA 101	Facility Management I	2
FMA 103	Facility Management II	2
FMA 105	Facility Management III	2
FMA 107	Technologies for Facility Management	2
FMA 109	Facilities Planning and Project Management	2

Minimum Credits Required for the Program: 10

Heating, Ventilation, and Air Conditioning (CTHVAC)

Certificate

This program prepares you 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 you will combine your diagnostic and repair skills with customer relations skills to service heating, ventilation, and air conditioning equipment. This program also helps prepare you for the third class refrigeration licensure examination.

Health and Applied Technologies Division
Technical Education Department

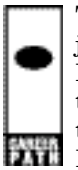
Advisor: Les Pierce

Required Courses		**(22 Credits)**
HVA 101	Heating, Ventilating, and Air Conditioning I	4
HVA 103	Heating, Ventilation, and Air Conditioning II	4
HVA 105	Heating, Ventilation, and Air Conditioning III	4
HVA 107	Heating, Ventilation, and Air Conditioning IV	4
TRI 103	Sheet Metal Blueprint Reading and Layout	4
WAF 104	Soldering & Brazing	2

Minimum Credits Required for the Program: 22

Industrial Training (APITRN)

Associate in Applied Science Degree



This program gives indentured apprentices and journeypersons of the United Association of Plumbers and Pipefitters the opportunity to apply their work as certified apprentice instructors toward an associate degree in Industrial Training. In addition to the fifteen credits awarded for completion of five summer apprentice training sessions, students will complete a minimum of 18 credits in general education courses and receive 30 non-traditional credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinklerfitting.

Health and Applied Technologies Division
Technical Education Department

Advisor: Patricia Crider

Program Admission Requirements:

Open only to United Association of Plumbers Apprentices/Journeymen

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		**(18 Credits)**
Electives *	Complete one course from Group I of each of the six General Education Areas	18-20

Major/Area Requirements		**(45 Credits)**
Electives**	Complete a specialization in plumbing, pipefitting, HVAC, or sprinklerfitting.	30
UAT 111	Apprentice Training	3
UAT 121	Apprentice Training II	3
UAT 131	Apprentice Training III	3
UAT 141	Apprentice Training IV	3
UAT 151	Apprentice Training V	3

Minimum Credits Required for the Program: 63

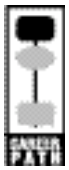
Footnotes:

**Credit for general education courses may be transferred from accredited colleges or universities in the United States*

***Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.*

Journeyperson Industrial (CFJPIC)

Certificate



This program gives skilled tradespersons who are sponsored by qualified firms the opportunity to apply trade-related instruction credits from their apprenticeship programs toward a WCC Certificate.

Health and Applied Technologies Division
Technical Education Department

Advisor: Les Pierce

Program Admission Requirements:

Students must be sponsored by a qualified firm to enroll in this program.

Requirements:

1. Complete 30 credits of Trade-Related Instruction coursework (TRI)*. 30

Minimum Credits Required for the Program: 30

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

Journeyperson Industrial (APJPIM)

Associate in Applied Science Degree

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

Health and Applied Technologies Division
Technical Education Department

Advisor: Les Pierce

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

Requirements

1. Complete the Journeyperson Industrial Certificate (CFJPIC). 30
2. Complete 12 credit hours as free electives.* 12
3. Complete one Group I course from each of the six General Education Areas. 18-21

Minimum Credits Required for the Program: 60

Footnotes:
**See your advisor to select appropriate electives*

Residential Construction Technology (CTRCT)

Certificate

This program prepares you for entry-level jobs in a broad range of careers in the construction industry, where you'll need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. This program also gives you the potential for being selected for one of the many apprentice classifications associated with the construction field.

Health and Applied Technologies Division
Technical Education Department

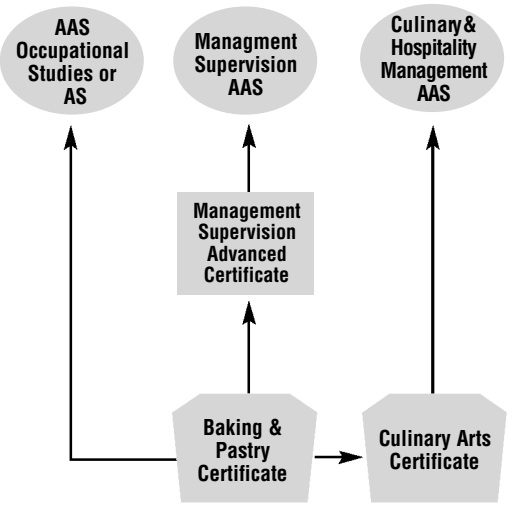
Advisor: Les Pierce

Major/Area Requirements (19 Credits)

CON 104	Construction I	3
CON 105	Construction II	5
CON 204	Construction III	4
CON 205	Construction IV	4
Choose:	CON 174 Co-op Education or CON 199 On-the-Job Training	3

Minimum Credits Required for the Program: 19

Culinary Arts Career Paths



Baking and Pastry (CFBAK)

Certificate

This program prepares you for careers in commercial baking, where you will work in retail deli-bakeries, country clubs, resorts, hotels, and institutional food service operations. It also gives you on-the-job experience in the form of 120 hours in a cooperative education placement, as well as courses that can be applied toward the Associate in Applied Science Degree in Culinary Arts.

Health and Applied Technologies Division
Culinary and Hospitality Management Department

Advisors: Jill Beauchamp, Carol Calder-Deinzer, Paul McPherson

Major/Area Requirements **(32 Credits)**

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 130	Beginning Cake Decorating	1
CUL 131	Wedding Cake Design	1
CUL 140	Bakery Management and Merchandising	2
CUL 174	CUL Co-op Education I	1-2
CUL 224	Principles of Cost Control	3

Minimum Credits Required for the Program: **32**

Footnotes:

The following sequence of courses is recommended for Culinary Arts courses. Please check course descriptions for pre and co-requisites:

I	II	II
CUL 110	CUL 120	CUL 125
CUL 114	CUL 121	CUL 140
CUL 115	CUL 124	CUL 174
CUL 118	CUL 224	
CUL 130		
CUL 131		

Culinary and Hospitality Management (APCULD)

Associate in Applied Science Degree

This program prepares you for a career as a culinary arts technician in a restaurant, hospitality, or institutional setting. Culinary arts technicians 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 gives you a foundation for continued culinary arts studies at a four-year college and for training as a chef.

Business and Computer Technologies Division
Culinary and Hospitality Management Department

Advisors: Jill Beauchamp, Carol Calder-Deinzer, Paul McPherson

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(18 Credits)
Choose:	MTH 151 Technical Algebra or MTH 152 Technical Geometry and Trigonometry or MTH 163 Business Mathematics	3-4
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements		(48 Credits)
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene	3
CUL 114	Baking I	3
CUL 118	Principles of Nutrition	3
CUL 120	Culinary Skills	3
CUL 121	Introduction to Food Preparation Techniques	3
CUL 150	Food Service Management	3
CUL 151	Food Service Marketing	3
CUL 210 *	Garde Manger	3
CUL 220	Organization/Management of Food Systems	3
CUL 224	Principles of Cost Control	3
CUL 228 *	Layout and Equipment	3
CUL 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
HRM 174	HRM Co-op Education I	1-2
Choose:	CUL 115 Pastry I or CUL 124 Baking II	3
Choose:	CUL 125 Pastry II or CUL 227 Advanced Culinary Techniques or CUL 250 Principles of Beverage Service	2-3

Minimum Credits Required for the Program: 66

Footnotes:

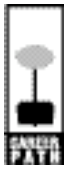
**CUL 210 & 228 are offered in spring semesters only*

Note: The following sequence of courses is recommended for Culinary Arts courses. Please check course descriptions for pre and co-requisites:

IF	IW	IS	2F	2W
CUL 100	CUL 114	CUL 210*	(CUL 115 or	HRM 174
CUL 110	CUL 118	CUL 228*	CUL 124)	(CUL 125 or
CUL 120	CUL 150		CUL 224	CUL 227 or
CUL 121	CUL 151		CUL 230	CUL 250)
	CUL 220		CUL 231	

Culinary Arts (CFCULC)

Certificate



This program prepares you for a job as a food production specialist in a hotel, restaurant, or institution, where sauteing, roasting, broiling, baking, vegetable preparation, producing soups and sauces, food storage, and sanitation will be among the skills you will need. The program also gives you a foundation for continued study toward an Associate in Applied Science in Culinary Arts.

Business and Computer Technologies Division
Culinary and Hospitality Management Department

Advisors: Jill Beauchamp, Carol Calder-Deinzer, Paul McPherson

Major/Area Requirements		(33 Credits)
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene	3
CUL 114	Baking I	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 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
Choose:*	CUL 210 Garde Manger or	
CUL 250	Principles of Beverage Service	3
Elective	Complete one course from the following: MTH 151, MTH 152, MTH 163	3-4

Minimum Credits Required for the Program: 33

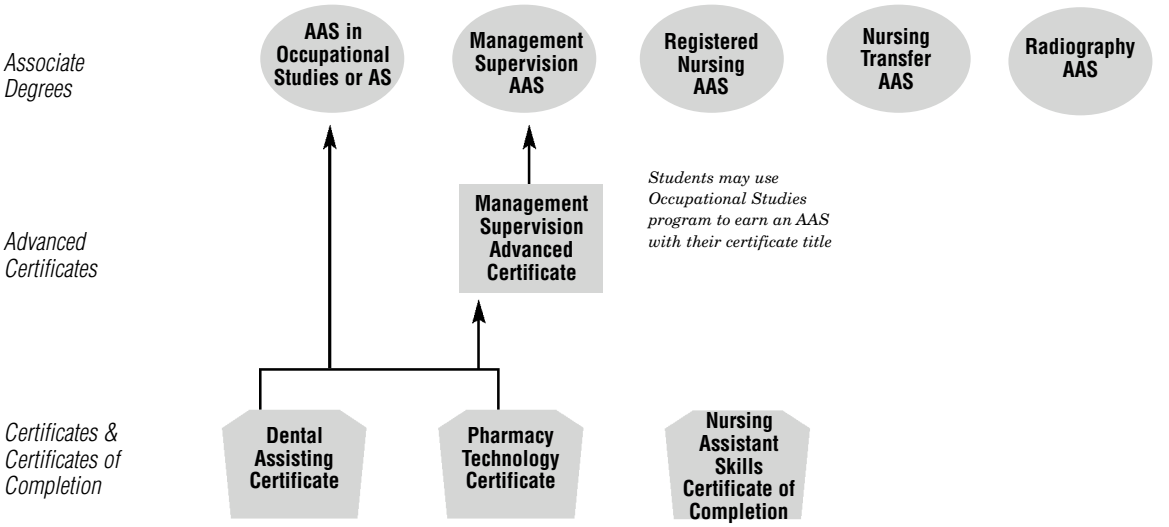
Footnotes:

**CUL 210 is offered in spring semesters only*

Recommended sequence for Culinary Arts courses:

IF	IW	IS
CUL 100	CUL 150	(CUL 210 or
CUL 110	CUL 151	CUL 250)
CUL 120	CUL 230	
CUL 121	CUL 231	
CUL 114		

Health Career Paths



Dental Assisting (CFDAC)

Certificate

This program prepares you for dental assisting positions in a variety of settings such as private dental offices, dental schools, the military, and dental insurance offices. The program prepares you for both the Dental Assistant National Board examination and the Michigan State Board of Dentistry examination. As a Certified Dental Assistant, you assist in the treatment of patients and participate in all functions of dentistry. As a Registered Dental Assistant in the State of Michigan, you can perform specified intra-oral functions normally performed by a dentist. Successful completion of the required dental radiography courses also gives you Michigan State Board of Dentistry authorization to expose dental radiographs.

You may enroll in this program in either a traditional (two-year) or an accelerated (one-year) mode. Both lead to certification, registration, and a certificate in dental assisting.The Department of Dental Assisting offers advanced standing in this program for dental assistants trained on the job with two years full-time employment. The Alternative Dental Assistant Education Project (ADAEP), which is highlighted at http://www.wccnet.org/health/dental6.php, requires validation of skills by successful completion of the Dental Assisting National Board examination (DANB) prior to admission. If you have two or more years of experience as an on-the-job trained dental assistant you may apply for advanced standing as part of the admissions process for the Alternative Dental Assistant Education Project (ADAEP). Successful completion of the Dental Assisting National Board Examination must be validated prior to ADAEP admission.

Health and Applied Technologies Division
Allied Health Department

Advisor: Betty Finkbeiner

Applying for Admission to the Program:

Application packets may be picked up from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

- Submission of a completed application for admission to the Dental Assisting Program
- Date of application to the program
- Washtenaw County residency

Program Admission Requirements:

- Applicants must possess a valid high school diploma or GED to start the program. Applications will be accepted prior to high school graduation or GED completion.
- The following high school courses or WCC equivalents should be completed with a grade of "C" or better:
- One year of high school biology or BIO 101 (Concepts of Biology)
- One semester of high school word-processing, database, and spreadsheet applications or CIS 100 (Intro to Software Applications)
- Admission to the Dental Assisting program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Dental Assisting program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Dental Assisting program.

- Advanced-standing students must successfully pass the Dental Assisting National Board examination (DANB).

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 in order to graduate from this program.
- A current CPR card is required prior to enrolling in DEN 130A.
- All students must demonstrate proficiency in the English language prior to placement in clinical courses. Please refer to admissions packet for details.

First Semester		**(15 Credits)**
DEN 102	Infection Control	1
DEN 106	Biomedical Science for Dental Assistants	2
DEN 107	Oral Anatomy	2
DEN 108	Dental Radiography	1
DEN 109	Oral Hygiene	1
DEN 110	Basic Clinical Dental Assisting	4
DEN 112	Dental Materials	4

Second Semester		**(13 Credits)**
DEN 119	Dental Nutrition	1
DEN 120	Oral Diagnosis Theory	1
DEN 128	Dental Radiography Practicum	1
DEN 129	Oral Pathology and Dental Therapeutics	2
DEN 130A	Oral Diagnosis/Clinical Practicum I	0.5
DEN 130B	Oral Diagnosis/Clinical Practicum II	0.5
DEN 131	Principles of Dental Specialties	4
Elective	Choose one of the following: COM 101, 102, ENG 100, 107, 111, or 122	3-4

Third Semester		**(10 Credits)**
DEN 202	Advanced Clinical Practice	3
DEN 204	Advanced Functions	3
DEN 212	Dental Practice Management	4

Minimum Credits Required for the Program: 38

Nursing Assistant Skills Training (CCNAST)

Certificate of Completion

This program prepares you for employment in a variety of health care settings from nursing homes to hospitals where you will work as a competency-evaluated nurse aide (C.E.N.A.). C.E.N.A. evaluation is mandated for employment in long-term care facilities. Training takes place in the classroom, lab, and clinical settings within the community. Upon completing the program you 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. This four-credit course is a Nurse Aide Training program that containsthe core curriculum essential for State certification and was approved by the State of Michigan through site visits.

Health and Applied Technologies Division
Nursing and Health Science Department

Advisor: Linda Lukiewski

Program Admission Requirements:

- Minimum age of 17 years
- Consent is required for enrollment in the program in order to provide the student with the policy on mandatory attendance and other information

Major/Area Requirements		**(4 Credits)**
HSC 100	Basic Nursing Assistant Skills	4

Minimum Credits Required for the Program: 4

Notice:
Course requirements for Fall 2002 were not finalized by the publication date. Nursing Students may obtain the official Nursing Transfer program requirements from the Office of the Executive Vice President of Instruction.

Nursing Transfer (APNURT)

Associate in Applied Science Degree

This program prepares you for a smooth transition into the third and fourth years of the University of Michigan (UM), School of Nursing, Bachelor of Science in Nursing program. You will receive a solid science foundation and begin taking nursing courses during the first two years at WCC. You will not be eligible for registered nurse (RN) licensure until completion of the UM program.

Health and Applied Technologies Division
Nursing and Health Science Department

Pre-Admission Advisor: Susan Travis
Post-Admission Faculty Advisor: Gloria Velarde

Articulation:

This program has an articulation agreement with the University of Michigan, School of Nursing for theBachelor of Science in Nursing. See the Health Programs Counselor for more information on this agreement. Students who wish to transfer to nursing programs at other four-year colleges or universities should check with an advisor or counselor at that institution to ensure the transferability of courses.

Program Admission Requirements:

- Fifteen (15) students are admitted each Fall semester to the Nursing Transfer Program.
- Students applying to the Nursing Transfer program must meet the admission requirements of both WCC and the UM School of Nursing.
- Students must have a minimum high school GPA of 3.4 and SAT scores above 1000 or an ACT composite score above 21. They must have earned a grade of at least "B" in all high school science courses.
- Required high school work:
  - Three units of English
  - Three units of Math
  - Two units of laboratory science, including chemistry and biology
  - Four units of foreign language and/or social science and/or laboratory science
  - Four units of other academic courses

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.
- This transfer program is designed for full-time students. WCC students must demonstrate the ability to carry a full-time course load by maintaining a minimum full-time enrollment of 12 credit hours with a 3.0 GPA in at least two terms in the 12 months prior to transfer to the U-M School of Nursing. Each of these two terms must include a transferable science course and one clinical course. In order to gain admittance to the U-M School of Nursing, students must have the following:
  - 3.0 cumulative GPA in all prior post-secondary academic experiences
  - 3.0 cumulative GPA at WCC
  - Overall 3.0 GPA in all transferable science/clinical courses
  - Associate in Applied Science degree from WCC

First Semester		**(15 Credits)**
ENG 111	Composition I	4
NUR 122	Nursing as a Societal and Interpersonal Profession	4
Choose:	PSY 100 Introductory Psychology or SOC 100 Principles of Sociology	3
Choose:	CEM 105 Fundamentals of Chemistry or CEM 111 General Chemistry I	4

Second Semester*		**(12 Credits)**
BIO 111	Anatomy and Physiology	5
BIO 237	Microbiology	4
MTH 167	Math Applications for Health Science	3

**During the second semester, students are required to dual enroll in NUR 130 (Health Promotion and Risk Reduction) at the UM School of Nursing.*

Third Semester		**(16 Credits)**
HSC 147	Growth and Development	4
HSC 220	Pathophysiology	4
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Clinical Practice	3
Elective **	Complete a second course in Psychology or Sociology	3

Fourth Semester		**(17 Credits)**
CEM 140	Organic Biochemistry	4
COM 200	Family Communication	3
NUR 115 ***	Pharmacology	3
NUR 222	Health Assessment Throughout the Lifespan	4
PHL 244	Ethical and Legal Issues in Health Care	3

Minimum Credits Required for the Program: 60

Footnotes:
**Students will receive UM credit for this course. Speak with a program advisor for more information.*
***Students must take two courses in the same discipline.*
****May be taken in the first or second semester with advisor permission.*

Notice:
Course requirements for Fall 2002 were not finalized by the publication date. Nursing Students may obtain the official Registered Nursing program requirements from the Office of the Executive Vice President of Instruction.

Nursing, Registered (APNURS)

Associate in Applied Science Degree

This program prepares you for the National Council Licensure Examination for Registered Nurses and for challenging and exciting jobs in all settings of health care, from the hospital to home care. You will gain proficiency in technical aspects of nursing care, such as medication administration, treatments and procedures, and use of medical technology, and you will receive personal satisfaction from your ability to make a difference in someone's life and health. You will also get credits that transfer to area RN-BSN completion programs. If you area licensed practical nurse (LPN) you may apply for Advanced Standing entry to the Nursing program by having practical nursing or other college transcripts evaluated for credit.

Health and Applied Technologies Division
Nursing and Health Science Department

Pre-Admissions Advisor: Susan Travis
Post-Admission Faculty Advisors: Phyllis Grzegorczyk, Sherry Lee, Maxine Moulton, Judith Pawloski, Vickie Salter
Advanced Standing Advisors: Theresa Nestorak, Judith VanderVeen

Applying for Admission to the program:

A limited number of students are admitted each year following an application period each fall and winter semester. Students not admitted during a specific year are encouraged to reapply during the next admission cycle. Admission to the program is a selective process based on:

- Completion and submission of an application for admission to the nursing program by the deadline date of February 28.
- Completion of program admission requirements (see below for specific courses)
- Cumulative GPA of required courses
- Overall cumulative high school GPA or college GPA if the student has completed 12 or more college credits
- Related health care activities (optional)
- Residency status (Washtenaw County residents are given priority)

Program Admission Requirements:

- Applicants must possess a valid high school diploma or GED
- Applicants must complete the following high school courses or equivalent WCC courses with a grade of "C" (or 2.0) or better:
  - One year of high school biology or BIO 101 (Concepts of Biology)
  - One year of high school algebra or MTH 097 or minimum COMPASS Algebra score of 46
  - One year of high school chemistry or CEM 105 Fundamentals of Chemistry
- Applicants must successfully pass the pre-admission math test with a minimum score of 80 percent
- Admission to the Nursing program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Nursing program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Nursing program.
- All students must demonstrate proficiency in the English language prior to placement in clinical courses. Please refer to admission packet for further details.

Advanced Standing Admission (LPN To RN):

Twenty LPN's who meet the advanced standing requirements below, in addition to the regular program admission requirements, are admitted to the Registered Nursing Program with advanced standing each Fall Semester. Applications are accepted year-round and upon completion of all admission requirements, the LPN applicant is slotted in the next available opening at a Fall entry point. Those not admitted for a specific semester are encouraged to take required support courses. In addition to meeting program admission requirements and submitting an application, transcripts must be submitted for evaluation of transfer credit.

Advanced Standing Requirements:

- Applicants must be graduates of a practical nursing program
- Applicants must complete a pharmacology course equivalent to NUR 115 (Pharmacology) with a grade of "C" or higher within the last three years or less.
- Applicants must hold a current LPN license*
- Applicants must have completed a minimum of one year full-time employment as an LPN within the last three years or the equivalent in part-time experience*

**Applicants who have not had recent LPN work experience or who do not have a current license may be granted conditional advanced standing admission to the program, but additional coursework will be required.*

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduation.
- 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 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 all health records by July 31 annually, while in the program.

First Semester (18 Credits)

BIO 111 *	Anatomy and Physiology	5
HSC 147 *	Growth and Development	4
MTH 167 *	Math Applications for Health Science	3
NUR 101	Introduction to Nursing	1
NUR 104	Nursing of the Older Adult	1
NUR 105	Nursing of the Older Adult - Clinical Practice	1
Choose:*	ENG 111 Composition I or ENG 122 Composition II	3-4

Second Semester (14 Credits)

HSC 138 *	General and Therapeutic Nutrition	2
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Clinical Practice	3
NUR 115	Pharmacology	3
Choose:*	BIO 147 Hospital Microbiology or BIO 237 Microbiology	1-4
Choose:*	COM 101 Fundamentals of Speaking or COM 102 Interpersonal Communication or COM 200 Family Communication	3

Third Semester (14 Credits)

HSC 220 *	Pathophysiology	4
NUR 123	Acute Care Nursing I	3
NUR 124	Acute Care Nursing I - Clinical Practice	2
NUR 131	Nursing of the Childbearing Family	3
NUR 132	Nursing of the Childbearing Family - Clinical Prac	2

Fourth Semester (13 Credits)

NUR 223	Acute Care Nursing II	3
NUR 224	Acute Care Nursing II - Clinical Practice	2
NUR 255	Mental Health Nursing	3
NUR 256	Mental Health Nursing - Clinical Practice	2
PSY 100 *	Introductory Psychology	3

Fifth Semester (13 Credits)

NUR 231	Nursing of Children	3
NUR 232	Nursing of Children - Clinical Practice	2
NUR 261	Transition to Graduate Nurse Role	1
NUR 262	Transition to Graduate Nurse Role - Clinical Pract	4
PHL 244 *	Ethical and Legal Issues in Health Care	3

Minimum Credits Required for the Program: 72

**Support courses may be taken prior to admission to the nursing sequence, but not later than the scheduled semester. Previous nursing or health care experience is recommended for enrollment in HSC 220 or PHL 244 prior to admission to the program.*

Sequence for Advanced Standing Students:

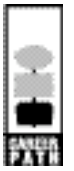
First Semester	Second Semester	Third Semester
COM Elective*	NUR 223	NUR 231
BIO 147 or 237*	NUR 224	NUR 232
ENG Elective*	NUR 255	NUR 261
HSC 147*	NUR 256	NUR 262
HSC 220*	PSY 100*	PHL 244*
MTH 167*		
NUR 201		

- LPN to RN students must complete a minimum of 46 credits at WCC.
- LPN's will receive 15 credits in direct transfer or non-traditional credit for the following courses: (NUR 101, NUR 102, NUR 103, NUR 104, NUR 105, HSC 118, and BIO 111).
- Based on the last three years of work experience and LPN graduation date, students will be individually evaluated for transfer credit or non-traditional credit for up to 10 credits for NUR 123, NUR 124, NUR 131, and NUR 132. (Credit-by-exam is an option for NUR 131 and 132.)

**Support courses may be taken prior to admission to the nursing sequence, but no later than the scheduled semesters.*

Pharmacy Technology (CTPHAR)

Certificate



This program prepares you for jobs in hospitals, health care agencies, and retail outlets, where you will work under the supervision of a registered pharmacist and be expected to blend a high attention to detail with customer service. The program also gives you the opportunity to explore health care as a place for future career opportunities.

Health and Applied Technologies Division
Allied Health Department

Advisor: Suzette Ripepe

Applying for Admission to the Program:

A limited number of students are admitted to the Pharmacy Technology program each year. Application packets may be picked up from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

- Completion and submission of an application for admission to the Pharmacy Technology program
- Completion of all prerequisite courses
- Date of application to the program
- Residency status (Washtenaw County residents are given priority)

Program Admission Requirements:

Applicants must complete the following high school courses or equivalent WCC courses with a grade of "C" or better:

- One year of high school algebra or MTH 097 or MTH 165 or minimum COMPASS Algebra score of 46
- One year of high school chemistry, or CEM 057 and CEM 058 (Introductory Chemistry/Laboratory), or one year of high school biology, or BIO 101 (Concepts of Biology)

Admission to the Pharmacy Technology program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Pharmacy Technology program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Pharmacy Technology program.

State law prohibits individuals who have been convicted of a crime that involves controlled substances from working in a pharmacy where they have access to controlled substances (MCL SS338.3145(f)). A police record check will be done on each student prior to program admission. If a student has a record that includes a conviction for a controlled substance crime, the student has a right to apply to the Drug Enforcement Agency (DEA) for an exemption to allow working in a pharmacy where they have access to controlled substances. The exemption must be obtained prior to admission to the program.

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" or better to progress to the second semester.
- Students must complete all courses with a grade of "C" 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 and in order to sit for the National Pharmacy Technician Certification Exam, administered by the Pharmacy Technician Certification Board.
- Students who have a felony conviction record are not allowed to sit for the National Pharmacy Technician Certification Exam administered by the Pharmacy Technician Certification Board.

Additional requirements to be completed prior to the clinical course PHT 198 include:

- Completion of a satisfactory physical examination 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. This physical examination must be completed within three months of the start of the clinical rotation and turned in to the program director four weeks before the start of the clinical rotation.
- Proof of health insurance.
- Demonstration of proficiency in the English language prior to placement in clinical courses. Please refer to the application packet for further details.

First Semester **(11 Credits)**

HSC 101 *	Healthcare Terminology	1
PHT 100	Introduction to Pharmacy and Health Care Systems	4
PHT 101	Pharmacology for Pharmacy Technicians	4
PHT 103	Pharmaceutical Calculations	2

Second Semester **(12 Credits)**

PHT 140	Pharmacy Prescription Processing	2
PHT 150	Pharmacy Operations and Compounding	3
PHT 198	Pharmacy Experience	4
Choose:*	CIS 100 Introduction to Software Applications or CIS 110 Introduction to Computer Information Systems	3

Minimum Credits Required for the Program: 23

Footnotes:
**May be taken prior to admission to the Pharmacy Technology program*

Radiography (APRAD)

Associate in Applied Science Degree

This program prepares you 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. The program also prepares you for the American Registry of Radiologic Technology certification examination.

Health and Applied Technologies Division
Allied Health Department

Advisors: Gerald Baker, Connie Foster

Articulation:

This program has an articulation agreement with Eastern Michigan University, the College of Health and Human Services, for the Bachelor of Science in Health Administration program. Transferring students should contact the Program Director for the Health Administration Program at EMU.

Applying for Admission to the Program:

A limited number of students are admitted to the Radiography program each year. All students enter the program during the summer term. Application packets may be picked up from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

- Completion and submission of an application for admission to the Radiography program
- Completion of all prerequisite courses by January 1 (see below for specific courses)
- Residency status (Washtenaw County residents are given priority)
- Date of application to the program

Program Admission Requirements:

- Applicants must possess a valid high school diploma or GED.
- Applicants must complete the following high school courses or equivalent WCC courses with a grade of "C" or better:
- One year of high school biology or BIO 101: Concepts of Biology
- One year of high school algebra or MTH 097: Introductory Algebra or minimum COMPASS Algebra score of 46
- One year of high school chemistry or CEM 105
- Admission to the Radiography program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Radiography program admission packet, which can be obtained from the Office of Admissions. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Radiography program.

It is strongly advised that students take BIO 111 (Anatomy & Physiology) before entering the Radiography program.

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.
- Students must pass a physical examination, taken at their own expense, not more that three months before enrolling in the first clinical education course.
- Students must maintain personal health coverage.
- Students must be certified in Basic Life Support to be eligible to enroll in clinical education courses. If they have not received certification through another agency, they can obtain it by completing HSC 131 (CPR/FPR and First Aid).
- Program courses are sequential and complemented with appropriate support courses. Students must complete all Radiography courses with a grade of "C" or above.
- All students must demonstrate proficiency in the English language prior to placement in clinical courses. Please refer to the application packet for further details.

First Spring/Summer Semester (7 Credits)

MTH 165 *	Health Science Mathematics	3
RAD 100	Introduction to Radiography	2
RAD 101	Methods in Patient Care	2

Second Fall Semester (17 Credits)

BIO 111 *	Anatomy and Physiology	5
HSC 101 *	Healthcare Terminology	1
RAD 110	Clinical Education	2
RAD 111	Fundamentals of Radiography	2
RAD 112	Radiographic Positioning I	2
RAD 113	Radiographic Processing	2
RAD 124	Principles of Radiographic Exposure	3

Second Winter Semester (12 Credits)

ENG 111 *	Composition I	4
RAD 120	Clinical Education	2
RAD 123	Radiographic Positioning II	2
RAD 125	Radiographic Procedures and Related Anatomy	3
RAD 127	Principles of Radiographic Exposure Laboratory	1

Second Spring/Summer Semester (7 Credits)

COM 101 *	Fundamentals of Speaking	3
RAD 150	Clinical Education	4

Third Fall Semester (12 Credits)

RAD 215	Radiography of the Skull	2
RAD 217	Clinical Education	3
RAD 218	Radiation Biology and Protection	4
SOC 100 *	Principles of Sociology	3

Third Winter Semester (13 Credits)

PHL 244 *	Ethical and Legal Issues in Health Care	3
RAD 135	Pathology for Radiographers	2
RAD 200	Physical Foundations of Radiography	3
RAD 225	Clinical Education	3
RAD 280	Radiographic Critique	2

Third Spring/Summer Semester (2 Credits)

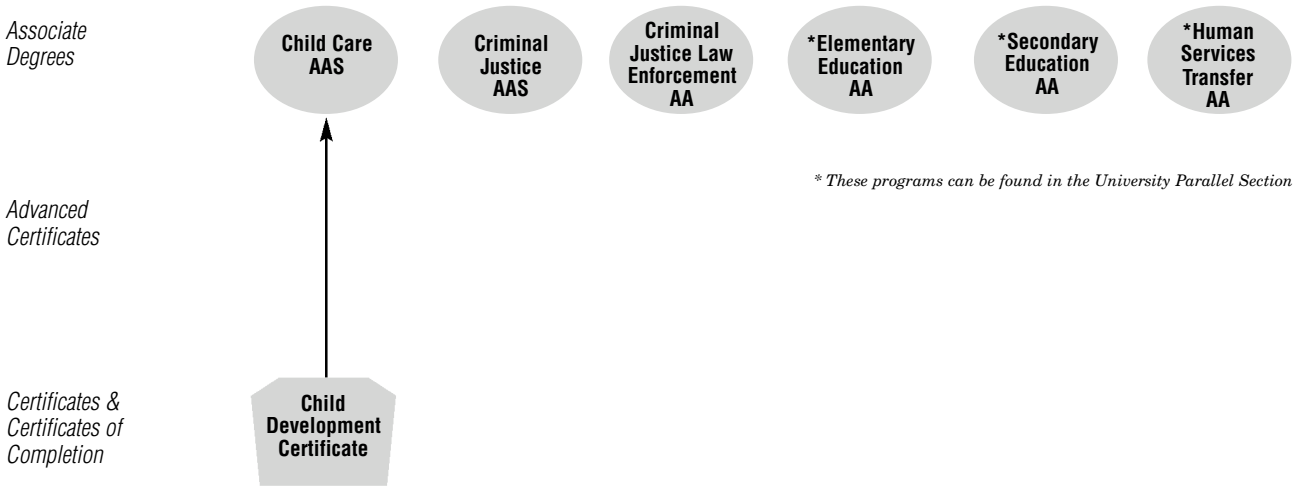
RAD 240	Clinical Education	2

Minimum Credits Required for the Program: 70

Footnotes:

**These courses may be taken before admission to the Radiography program*

Human Services Career Paths



Child Care (APCC)

Associate in Applied Science Degree

This program prepares you for jobs as a child care professional in a day-care center where you are expected to organize and lead activities for children from birth through age twelve. Completion of the program qualifies you as an educational director of a childcare center in the State of Michigan. It also gives you some courses that can be applied to four-year programs in early childhood development and education.

Math, Natural and Behavioral Sciences Division
Behavioral Science Department

Advisor: Sally Adler

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in MTH 148. One year of HS algebra is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

COM 101	Fundamentals of Speaking	3
MTH 148	Functional Mathematics for Elementary Teachers I	4
MUS 180	Music Appreciation	3
PLS 150	State and Local Government and Politics	3
Choose:	ENG 111 Composition I or ENG 122 Composition II	3-4
Elective *	Area 4: Natural Science Group I	3-4

Major/Area Requirements (31 Credits)

CCP 100	The Exceptional Child	2
CCP 101 **	Child Development	3
CCP 103	Establishing Programs for Children	2
CCP 104	The Basics of Child Care	1
CCP 107	Math & Science Activities for Children	3
CCP 108	Expressive Arts for Children	2
CCP 109	Language and Communication for Children	2
CCP 110	Social and Emotional Development	2
CCP 111	Management of Child Care Programs	2
CCP 113	Health, Safety and Nutrition for Child Care	3
CCP 118	Beginning Child Care Seminar	1
CCP 119	Beginning Child Care Practicum	2
CCP 200	Working with Parents	3
CCP 218	Advanced Child Care Seminar	1
CCP 219	Advanced Child Care Practicum	2

Required Support Courses (10 Credits)

ENG 240	Children's Literature	3
HSC 131	CPR/FPR and First Aid	1
Electives	Complete two courses from the following: CIS 100, MUS 140, COM 102, PSY 100, SOC 100	6

Minimum Credits Required for the Program: 60

Footnotes:

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

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

Career Path Key: Certificate/Certificate of Completion, Advanced Certificate, Associate's Degree, Post-Associate Certificate

Child Development (CTCDA)

Certificate

This program prepares you for the assessment exam required for the Child Development Associate (CDA) credential. It also prepares you for employment in child care centers or in family home daycare settings working with infants and toddlers, or preschoolers. It also provides you with skills from the 13 functional areas required bythe National Council for Early Childhood Professional Recognition, as well as courses that transfer into WCC's associate degree childcare program.

Math, Natural and Behavioral Sciences Division
Behavioral Science Department

Advisor: Sally Adler

Articulation:

The courses in this program may be transferred into the Child Care Associate Degree program as CCP 108, 110, 118, and 119.

Program Admission Requirements:

Students must be at least 18 years of age and have a high school diploma or equivalent

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/FPR and First Aid	1
Elective *	Optional (not required): CCP 124 and/or CCP 134	

Minimum Credits Required for the Program: 11

Footnotes:

**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.*

Criminal Justice (AACJ)

Associate in Arts Degree

This program prepares you for jobs in police work, probation and parole, and juvenile criminal justice. It also gives you the required academic background to enter the Washtenaw Police Academy, the Law Enforcement Certification program run by Washtenaw Community College, as well as credits that transfer into Eastern Michigan University's Criminology and Criminal Justice program.

Math, Natural and Behavioral Sciences Division
Public Service Careers Department

Advisors: Hank Townsend, Ruth Walsh

Articulation:

This program has an articulation agreement with Eastern Michigan University, College of Arts and Sciences, for a BA or BS in Criminology and Criminal Justice.

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in MTH 160. One year of HS algebra is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(29 Credits)
MTH 160	Basic Statistics	4
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Choose:	COM 101 Fundamentals of Speaking or COM 102 Interpersonal Communication	3
Electives	Area 1: Writing	6
Elective *	Area 4: Natural Science, Group I	4-5
Electives	Area 6: Arts and Humanities. (At least one course must be from Group I)	6

Major/Area Requirements		(36 Credits)
CJT 100	Introduction to Criminal Justice	3
CJT 111	Police/Community Relations	3
CJT 120	Criminal Justice Ethics	3
CJT 160	Criminal Justice Constitutional Law	3
CJT 208	Criminal Evidence and Procedure	3
CJT 209	Criminal Law	3
CJT 223	Juvenile Justice	3
CJT 224	Criminal Investigation	3
CJT 225	Seminar in Criminal Justice	3
Elective	Complete one additional course in Psychology (PSY)	3
Electives	Complete two courses in Sociology (SOC)	6

Minimum Credits Required for the Program: 65

Footnotes:

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

Criminal Justice - Law Enforcement (APCJLE)

Associate in Applied Science Degree

This program prepares you for certification to work in law enforcement jobs in the State of Michigan. You must complete the academic program prior to entering the Police Academy component of the program.

Math, Natural and Behavioral Sciences Division
Public Service Careers Department

Advisor: Ruth Walsh

Continuing Eligibility Requirements:

- Admission to CJT 221 A, B, and C (the Police Academy component of this program) 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.
- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (19 Credits)

COM 102	Interpersonal Communication	3
Choose:	MTH 151 Technical Algebra or MTH 160 Basic Statistics or MTH 169 Intermediate Algebra	4
Choose:	PSY 100 Introductory Psychology or PSY 200 Child Psychology	3
Elective	Area 1: Writing	3-4
Elective	Area 4: Natural Science, Group 1	3
Elective	Area 6: Arts and Humanities, Group 1	3

Major/Area Requirements (51 Credits)

CJT 100	Introduction to Criminal Justice	3
CJT 111	Police/Community Relations	3
CJT 120	Criminal Justice Ethics	3
CJT 160	Criminal Justice Constitutional Law	3
CJT 221A	Law Enforcement - Investigations	13
CJT 221B	Law Enforcement - Skill Areas	13
CJT 221C	Law Enforcement Training - Comm Policing & Commun.	4
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, 202, 205, 207, 250, or CJT 223	3

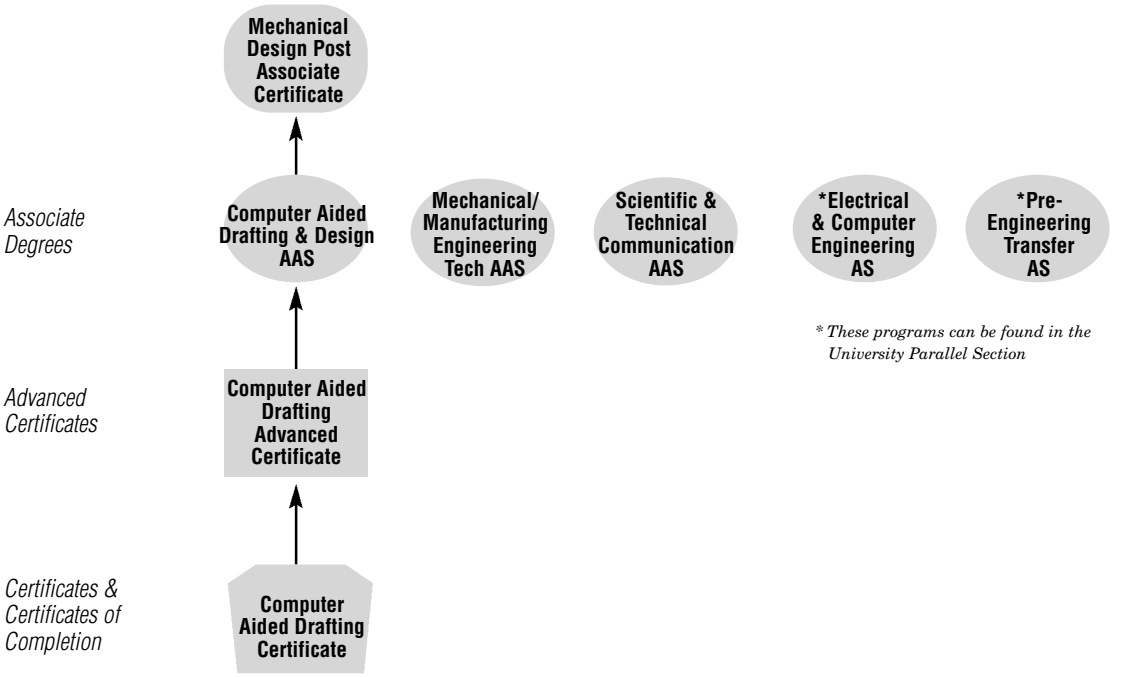
Minimum Credits Required for the Program: 70

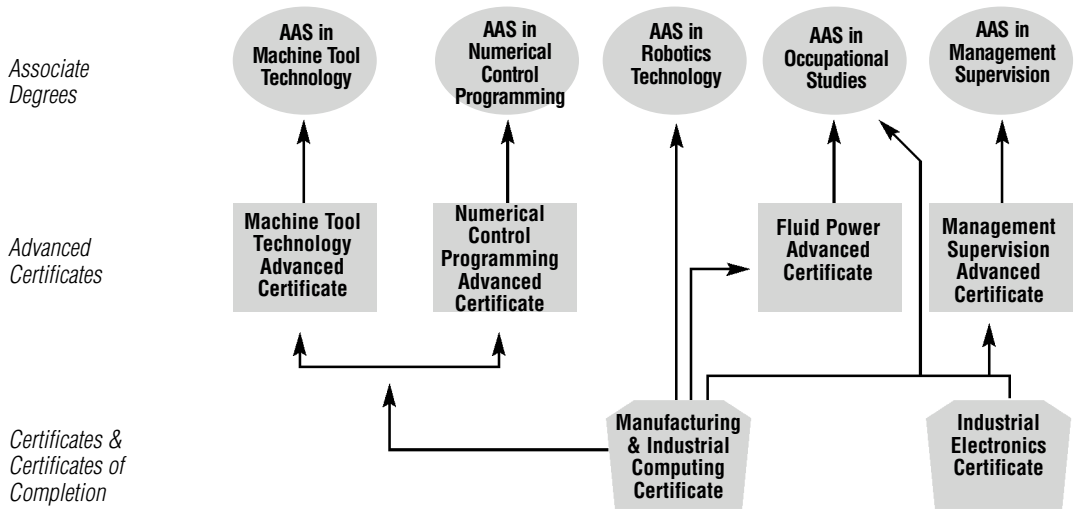
Note: It is recommended that students take one or two semesters of Spanish in addition to program requirements.

Note: The following sequence of courses is recommended for Criminal Justice courses:

I	II	III	IV	V
CJT 100 CJT 120	CJT 111 CJT 160	CJT 225	CJT 221A CJT 221C	CJT 221B

Industrial and Engineering Technology Career Paths





Students may use Occupational Studies program to earn an AAS with their certificate title

CAREER PROGRAMS

Computer Aided Drafting (CTCADC)

Certificate

The Computer Aided Drafting certificate program prepares you for entry-level work in drafting and detailing, where you will use CAD software to create details from layout drawings and sketches based on industry standards.

Business and Computer Technologies Division
Drafting Department

Advisors: Michael McGraw, Belinda McGuire, Barry Swan

Major/Area Requirements		(25 Credits)
CAD 111	CAD I—Detailing	6
CAD 113	CAD II—Drafting and Layout	6
CAD 115	Descriptive Geometry	4
IDD 111	Drafting Standards and Conventions	3
IDD 113	Theory of Dies	2
MTT 111	Machine Shop Theory and Practice	4

Minimum Credits Required for the Program: 25

Computer Aided Drafting (CVCADA)

Advanced Certificate

This program prepares you for jobs as a CAD Designer/Drafter where you will prepare CAD-based models of assemblies and details by working from rough sketches, specifications, catalogs, existing CAD parts and models, and calculations provided by engineers and designers. The program provides you with the skills to generate complete and accurate assembly and detail drawings using industry conventions for manufacturability and economy. You also get credits that can be applied toward the Associate Degree in Computer-Aided drafting and Design.

Business and Computer Technologies Division
Drafting Department

Advisors: Michael McGraw, Belinda McGuire, Barry Swan

Program Admission Requirements:

Completion of the Computer Aided Drafting Certificate

Major/Area Requirements		(22 Credits)
CAD 211	Parametric Modeling	4
CAD 213	Mechanisms	4
CAD 215	Geometric Dimensioning and Tolerancing	3
CAD 217	Mechanical Design	6
IDD 211	Theory of Jigs and Fixtures	2
Choose:	MTH 107 Triangle Trigonometry or MTH 178 General Trigonometry	3

Minimum Credits Required for the Program: 22

Computer Aided Drafting and Design (APCADD)

Associate in Applied Science Degree

This program prepares you for jobs as a CAD operator or technician, where you will prepare clear, complete, and accurate detail and assembly drawings from rough sketches, specifications, and calculations of engineers and designers to be used for mechanical applications.

Business and Computer Technologies Division
Drafting Department

Advisors: Michael McGraw, Belinda McGuire, Barry Swan

Program Admission Requirements:

Students must have a minimum score of 46 on the COMPASS Algebra test or complete MTH 097 with a "C" or better to enroll in MTH 107; or a score of 46 on the COMPASS College Algebra test or MTH 169 with a "C" or better to enroll in MTH 178. Two years of high school algebra is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(19 Credits)
Choose:	ENG 107 Technical Communication or ENG 111* Composition I	3-4
Choose:	MTH 107 Triangle Trigonometry or MTH 178* General Trigonometry	3
Choose:	PHY 105 Conceptual Physics or PHY 111* General Physics I	4
Elective	Area 2: Speech	3
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements		(51 Credits)
CAD 111	CAD I—Detailing	6
CAD 113	CAD II—Drafting and Layout	6
CAD 115	Descriptive Geometry	4
CAD 211	Parametric Modeling	4
CAD 213	Mechanisms	4
CAD 215	Geometric Dimensioning and Tolerancing	3
CAD 217	Mechanical Design	6
IDD 111	Drafting Standards and Conventions	3
IDD 113	Theory of Dies	2
IDD 211	Theory of Jigs and Fixtures	2
MTT 103	Introduction to Materials	3
MTT 111	Machine Shop Theory and Practice	4
NCT 112	Introduction to Computerized Machining (CNC)	4

Minimum Credits Required for the Program: 70

Footnotes:
**Choose these courses if you plan to transfer to a four-year college.*

The following course sequence is recommended for the major courses. Check course descriptions for pre and co-requisites:

I	II	III	V
CAD 111	CAD 113	CAD 211	CAD 217
IDD 111	CAD 115	CAD 213	NCT 112
MTT 103	MTT 111	CAD 215	IDD 211

Fluid Power (CVFLPA)

Advanced Certificate

This program is a continuation of the Fluid Power Certificate program and prepares you for higher level positions as a hydraulic specialist. The program gives you an understanding of system design including motion control, using electro-hydraulic proportional and servo valves. You will also be prepared to take the "Hydraulic Specialist" certification examination through the Fluid Power Society.

Health and Applied Technologies Division
Industrial Technology Department

Advisors: Jim Popovich, Gary Schultz

Program Admission Requirements:
Students must successfully complete the Manufacturing and Industrial Computing Certificate.

Major/Area Requirements		**(12 Credits)**
FLP 213	Hydraulic Controls	3
FLP 214	Basic Hydraulic Circuits	3
FLP 225	Fluid Power Motion Control	3
FLP 226	Pneumatics	3

Minimum Credits Required for the Program: 12

Footnotes:

Note: The following sequence of courses is recommended.

I	II
FLP 213	FLP 225
FLP 214	FLP 226

Industrial Electronics Technology (CFIET)

Certificate

This program prepares you for entry-level jobs in any of the industrial electricity/electronics cluster of occupations. You will develop skill in the installation, maintenance, and troubleshooting of industrial control systems with a focus on programmable logic controllers, electric motors, electronic sensors and control circuits. In addition, the importance of relating effectively with customers, managers, and coworkers is emphasized.

Business and Computer Technologies Division
Electricity/Electronics Department

Advisors: William Cleary, Gary Downen, Dale Petty

Program Admission Requirements:
Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Major/Area Requirements		**(12 Credits)**
ELE 111	Electrical Fundamentals	4
ELE 134	Motors and Controls	4
ELE 137	Switching Logic	4
ELE 204	National Electrical Code	4
ELE 211	Basic Electronics	4
ELE 224	Introduction to PLC's	4
ELE 254	PLC Applications	4
Choose:	ELE 174 ELE Co-op Education or ELE 299 Customer Relations	2

Minimum Credits Required for the Program: 30

Machine Tool Technology (CVMTTA)

Advanced Certificate

This program prepares you for manufacturing jobs where you 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. You will learn machining operations through the production of parts, on modern conventional mills, lathes, and grinding equipment in WCC's extensive machine tool laboratory. Opportunities for employment in the machine tool industry are great. This program can launch you into skilled occupations such as an apprentice tool and diemaker or machinist.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Roger Dick

Program Admission Requirements:
Students must successfully complete the Manufacturing and Industrial Computing Certificate or have equivalent industry experience.

Major/Area Requirements		**(16 Credits)**
MTT 103	Introduction to Materials	3
MTT 202	Machine Tool Operations and Set-Up I	4
MTT 203	Machine Tool Operations and Set-Up II	4
NCT 121	Manual Programming and NC Tool Operation	5

Minimum Credits Required for the Program: 16

Machine Tool Technology (APMTTM)

Associate in Applied Science Degree

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. You can earn an Associate in Applied Science Degree in Machine Tool Technology by completing the requirements listed below.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Roger Dick

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

Requirements

1. Complete the Manufacturing and Industrial Computing Certificate 24
2. Complete the Machine Tool Technology Advanced Certificate 16
3. Complete one course from one of the disciplines below: NCT, MTT, IDD, QCT, ROB or CAD* 2-3
4. Complete one Group I course from each of the six General Education Areas 18-21

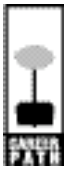
Minimum Credits Required for the Program: 60

Footnotes:

**See your advisor to select an appropriate course.*

Manufacturing and Industrial Computing (CTMIC)

Certificate



This program gives students an overview of technologies included in the typical manufacturing facility, with an emphasis on those using computers such as Robotics, CAD, and CAM. Upon completion, students will have the skills to perform entry-level jobs in the manufacturing plant. The certificate also leads to various advanced certificates and Associates degrees in related specialized fields.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Gary Schultz

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

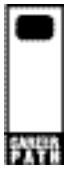
Major/Area Requirements (24 Credits)

ELE 111	Electrical Fundamentals	4
FLP 111	Fluid Power Fundamentals	4
MTT 101	Blueprint Reading and Computerized Drawings	2
MTT 111	Machine Shop Theory and Practice	4
NCT 112	Introduction to Computerized Machining (CNC)	4
ROB 121	Robotics I	4
WAF 100	Fundamentals of Welding	2

Minimum Credits Required for the Program: 24

Mechanical Design (CPMDES)

Post-Associate Certificate



This program provides advanced skills in the development, modification, and analysis of solid model parts and assemblies. The program gives you the skills to create complex three-dimensional free form surfaces based on mathematical concepts and equations using the tools within the SDRC I-DEAS Master Series. You must have an associate degree in CAD-Drafting, or equivalent industry experience to enroll in this program.

Business and Computer Technologies Division
Drafting Department

Advisor: Belinda McGuire

Program Admission Requirements:

Students must successfully complete an associate degree or higher in CAD-Drafting, or have related industry experience.

Required Courses (14 Credits)

CAD 280	The Basics of Part Modeling	3
CAD 282	Constructing Assemblies	2
CAD 284	Part Modeling II	3
CAD 286	Part Modeling III	2
CAD 290	Working Details	2
CAD 292	Free Form Surfacing	2

Minimum Credits Required for the Program: 14

Mechanical/Manufacturing Engineering Technology (APMETT)

Associate in Applied Science Degree

This program prepares you for jobs in which you support technical and engineering activities in both business and industry settings by using engineering design methods and analysis techniques to improve products, processes, and systems. You also get credit that transfers to Engineering Science and Engineering Technology Programs at four-year colleges and universities. The curriculum of this program is based on engineering theory but emphasis is placed on application, implementation skills, and computer modeling.

Business and Computer Technologies Division
Drafting Department

Advisor: Frank Gerlitz

Articulation:

This program has articulation agreements with the following universities:

- University of Toledo, Engineering Technology program
- University of Michigan-Dearborn, College of Engineering and Computer Science, for the Bachelor of Science in Engineering (BSE) in Manufacturing Engineering or Mechanical Engineering. Students should obtain a copy of the agreement to select the correct general education courses and to select substitute courses for the electives.

Program Admission Requirements:

- Students must have a minimum score of 46 on the COMPASS Trigonometry test or complete MTH 178 with a "C" or better to enroll in MTH 191. It is recommended that students have two years of high school algebra and precalculus and one semester of high school trigonometry.
- A course in high school chemistry or CEM 057 or CEM 105 with a "C" or better is required to enroll in CEM 111.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (21 Credits)

CEM 111	General Chemistry I	4
MTH 191	Calculus I	5
Choose:	ENG 111 Composition I or ENG 122 Composition II	3-4
Elective	Area 2: Speech	3
Elective	Area 5: Social and Behavioral Science, Group 1	3
Elective	Area 6: Arts and Humanities, Group 1	3

Major/Area Requirements (22 Credits)

MET 100	Presentation and Computer Aided Drawing	4
MET 211	Statics and Introduction to Solid Mechanics	3
MET 220	Materials and Manufacturing	4
MET 241	Introduction to Dynamics	3
MET 260	Strength of Materials	3
Electives *	Complete 5 to 12 credits in the technical disciplines listed below, including a sequence of two courses in the same discipline.	5-12

Required Support Courses (18 Credits)

MTH 192	Calculus II	4
PHY 211	Analytical Physics I	5
PHY 222	Analytical Physics II	5
Choose:	CPS 171 Introduction to Programming with C++ or CPS 185 Introduction to Visual Basic Programming	4

Minimum Credits Required for the Program: 61

Footnotes:

**See your program advisor to get approval for all technical electives. Choose technical electives from the following disciplines:*

Architectronics (ARC)
Auto Body Repair (ABR)
Automotive Service (ASV)
Computer Aided Drafting (CAD)
Construction Technology (CON)
Electricity/Electronics (ELE)
Fluid Power (FLP)
Heating (HTG)
Industrial Drafting & Design (IDD)
Journeyperson Upgrade (JUG)
Machine Tool Technology (MTT)
Mechanical Engineering (MET)
Numerical Control (NCT)
Photography (PHO)
Refrigeration/Air Conditioning (RAC)
Robotics (ROB)
Trade-Related Instruction (TRI)
Welding and Fabrication (WAF)

Numerical Control Programming (APNCPM)

Associate in Applied Science Degree

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. You can earn an Associate in Applied Science degree in Numerical Control Programming by completing the requirements listed below.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Roger Dick

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in ELE 111. One year of high school algebra with a grade of "C" or better is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

Requirements

1.	Complete the Manufacturing and Indusdrial Computing Certificate (CTMIC)	24
2.	Complete the Numerical Control Advanced Certificate (CVNCP)	18
3.	Complete one Group I course from each of the six General Education Areas*	18-21

Minimum Credits Required for the Program: 60

Footnotes:
**See your advisor to select appropriate electives*

Numerical Control Programming (CVNCP)

Advanced Certificate

This program prepares you for jobs as a numerical control operator or programmer, jobs that are currently in high demand due to the widespread use of CNC machine tools in industry today. The program gives you skills in manual and computer assisted programming languages, using CAD/CAM software, to program challenging and complex 2, 3, and 4-axis CNC machine tool operations. You also will become proficient in the interpretation of engineering drawings, visualization of machine operations, and the setup requirements of numerical controlled machine tools.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Roger Dick

Program Admission Requirements:

Students must successfully complete the Manufacturing and Industrial Computing Certificate or have equivalent industry experience.

Major/Area Requirements (18 Credits)

NCT 121	Manual Programming and NC Tool Operation	5
NCT 221	Advanced Manual Programming and NC Tool	5
NCT 236	SURFCAM CNC Programming	4
NCT 249	Mastercam CNC Programming	4

Minimum Credits Required for the Program: 18

Robotic Technology (APROB)

Associate in Applied Science Degree

This program prepares you for entry-level positions as an automated equipment technician who assembles, installs, programs, troubleshoots, and maintains robotic equipment. You will use hand tools, testing instruments, and diagrams to work on electrical and electronic, electro-mechanical, pneumatic, and hydraulic components in computer-assisted machinery.

Health and Applied Technologies Division
Industrial Technology Department

Advisor: Gary Schultz

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 or 151 with a "C" or better to enroll in ELE 111 and MTH 152. One year of high school algebra with a grade of "C" or better is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (18 Credits)

Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective *	Area 3: Mathematics	3-4
Elective **	Area 4: Natural Sciences, Group I	3-5
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Core Courses (24 Credits)

ELE 111	Electrical Fundamentals	4
FLP 111	Fluid Power Fundamentals	4
MTT 101	Blueprint Reading and Computerized Drawings	2
MTT 111	Machine Shop Theory and Practice	4
NCT 112	Introduction to Computerized Machining (CNC)	4
ROB 121	Robotics I	4
WAF 100	Fundamentals of Welding	2

Major/Area Requirements (29 Credits)

ELE 137	Switching Logic	4
ELE 224	Introduction to PLC's	4
FLP 213	Hydraulic Controls	3
FLP 214	Basic Hydraulic Circuits	3
FLP 226	Pneumatics	3
ROB 212	Robotics II	4
ROB 222	Robotics Simulation	2
ROB 223	Robotics III	2
ROB 224	Robotics IV	4

Minimum Credits Required for the Program: 71

Footnotes:
**For Area 3, MTH 152 is recommended.*

***For Area 4, PHY 110 or 111 is recommended.*

Scientific and Technical Communication (APSTC)

Associate in Applied Science Degree

This program prepares you for staff positions and freelance writing opportunities where your ability to convey complex scientific and technical information precisely, accurately, and clearly determines your success. This program gives you the opportunity to customize your program with specialty courses from business, technical, or scientific disciplines.

Humanities and Social Science Division
English/Writing Department

Advisor: Lisa Veasey

Program Admission Requirements:

- Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a "C" or better to enroll in MTH 160. One year of high school algebra with a grade of "C" or better is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (20 Credits)

ENG 100	Communication Skills	4
MTH 160	Basic Statistics	4
Choose:	COM 101 Fundamentals of Speaking or COM 102 Interpersonal Communication	3
Elective	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements (25 Credits)

BOS 157	Word Processing Applications I	2
BOS 257	Word Processing Applications II	2
ENG 107	Technical Communication	3
ENG 208	Advanced Technical Communication I	3
ENG 209	Advanced Technical Communication II	3
GDT 100	Typography I	4
INP 150	Basic HTML	2
INP 210	Internet Professional I	3
Choose:	CIS 100 Intro to Software Applications or CIS 110 Intro to Computer Information Systems	3

Required Support Courses (17 Credits)

ENG 245	Career Practices Seminar	2
Electives *	Complete 15 credits of approved electives in one of the specialty areas listed below	15

Minimum Credits Required for the Program: 62

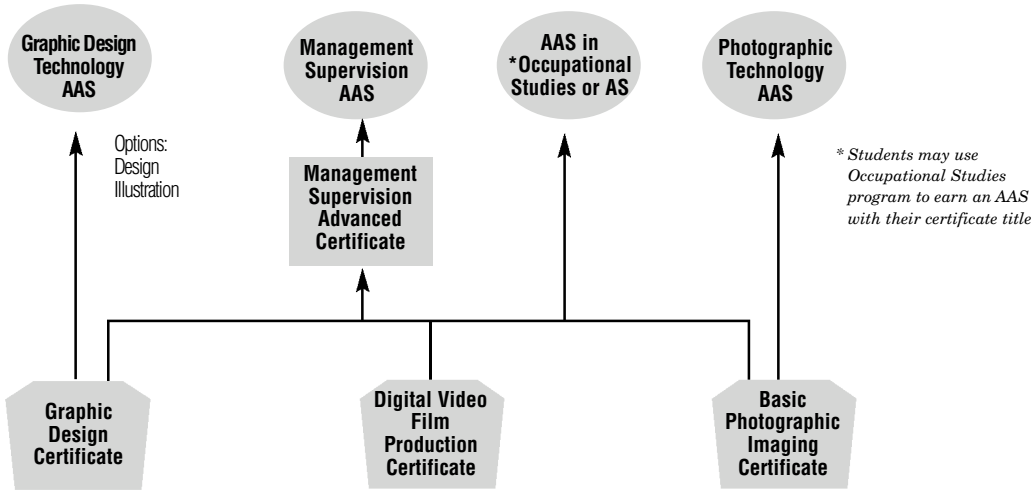
Footnotes:
**Students must meet with a program advisor to choose a specialty area and select appropriate courses:*

Business electives may be chosen from the disciplines of:
Accounting - ACC
Business - BMG
Computer Instruction - CIS and/or CPS
Business Office Systems - BOS

Technical electives may be chosen from the disciplines of:
Automotive Service - ABR, ARF, and/or ASV
Computer Instruction - CIS, CNT, and/or CPS
Drafting - ARC, CAD, and/or IDD
Electricity/Electronics - ELE and/or ECE
Industrial Technology - FLP, ROB, MET, MTT, and/or NCT
Internet Professional - INP
Visual Arts Technology - GDT, PHO, and/or VID
Welding and Fabrication - WAF

Scientific electives may be chosen from the disciplines of:
Life Sciences - BIO
Mathematics - MTH
Physical Sciences - AST, CEM, GLG, and/or PHY

Visual Arts Career Paths

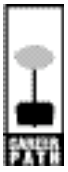


Career Path Key: Certificate/Certificate of Completion; Advanced Certificate; Associate's Degree; Post-Associate Certificate

Graphic Design

Graphic Design (CFGDTC)

Certificate



This program provides you with entry-level skills in graphic design or allows you to upgrade or expand your present skills. You 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 programs. This program provides credits towards the Associate in Applied Science Degree in Graphic Design Technology.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisors: Lind Babcock, Dennis Guastella, Kristine Willimann

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.

Major/Area Requirements		**(30 Credits)**
GDT 100	Typography I	4
GDT 112	Graphic Communication I	4
GDT 127	QuarkXPress for Print Publishing	4
GDT 139	Illustrator Graphics	4
GDT 140	Photoshop Graphics	4
GDT 150	Design for the Internet	4
Choose:	GDT 220 Publication Design or GDT 239 Imaging and Illustration	4
Elective	Complete one course from: GDT 101, 174, 214, 220, 239, 259, 150, 111, or VID 101	2-4

Minimum Credits Required for the Program: 30

Note: Sixteen (16) credits of GDT software and computer studio classes in one semester is an extremely heavy load. Students may need more than two semesters to complete the program.

Graphic Design Technology - Design Option (APGDTD)

Associate in Applied Science Degree

This program prepares you for a career as a graphic artist with an emphasis in design. Graphic designers work with writers, photographers, printers, and other specialists in the field of visual communication design to communicate, inform, instruct, or sell. You may work on publications, advertising, the Internet, interactive media, exhibit graphics, signage, corporate identity, or packaging. Graphic artists who are skilled in graphics software applications may focus more on the technical aspects of assembling and preparing materials for print and/or electronic media distribution. The program focuses on developing your skills in basic design theory, concept development, typography, the major graphic design software applications, 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.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisors: Lind Babcock, Dennis Guastella, Kristine Willimann

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.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		**(18 Credits)**
Elective*	Area 1: Writing	3-4
Elective*	Area 2: Speech	3
Elective*	Area 3: Mathematics	3-4
Elective	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements		**(48 Credits)**
GDT 100	Typography I	4
GDT 101	History of Graphic Design	3
GDT 112	Graphic Communication I	4
GDT 127	QuarkXPress for Print Publishing	4
GDT 139	Illustrator Graphics	4
GDT 140	Photoshop Graphics	4
GDT 150	Design for the Internet	4
GDT 220	Publication Design	4
GDT 230	Professional Practices	4
GDT 239	Imaging and Illustration	4
GDT 252	Advanced Digital Studio	4
Elective	Complete one course from the following: GDT 214, GDT 259, GDT 260	3-4
Elective	Complete one course from the following which has not been previously taken: ART 112, GDT 174, 201, 214, 259, 260, 274, INP 150, VID 101, PHO 111	2-4

Minimum Credits Required for the Program: 66

Footnotes:

Recommended General Education courses:

**For Area 1, ENG 107 or ENG 111 is recommended*

***For Area 2, COM 101 is recommended*

****For Area 3, MTH 151 or MTH 163 is recommended*

Graphic Design Technology - Illustration (APGDTI)

Associate in Applied Science Degree

This program prepares you for entry into a variety of illustration occupations. You could work for manufacturing, engineering, or technology firms; newspaper art departments; design studios; Web companies; magazine and book publishers; and advertising agencies or you could work as a freelance illustrator. You will use a variety of media and methods, including traditional as well as computer-based illustration, with the purpose of producing a portfolio of professional illustrations. The illustration curriculum prepares you to develop an understanding of the visualization process used for arriving at unique and creative ideas. It also enables you to decipher and illustrate technical information with accuracy and attention to detail, as well as prepares you to present visual ideas in an expressive manner.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisor: Dennis Guastella

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.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(18 Credits)
Elective *	Area 1: Writing	3-4
Elective *	Area 2: Speech	3
Elective *	Area 3: Mathematics	3-4
Elective	Area 4: Natural Science Group I	3-4
Elective	Area 5: Social and Behavioral Science Group I	3
Elective	Area 6: Arts and Humanities Group I	3

Major/Area Requirements		(46 Credits)
GDT 101	History of Graphic Design	3
GDT 112	Graphic Communication I	4
GDT 137	Introduction to Illustrator	2
GDT 138	Illustrator II	2
GDT 141	Introduction to Photoshop	2
GDT 142	Intermediate Photoshop	2
GDT 150	Design for the Internet	4
GDT 201	Technical Graphics	4
GDT 214	Advanced Photoshop	3
GDT 222	Commercial Illustration	4
GDT 230	Professional Practices	4
GDT 239	Imaging and Illustration	4
GDT 259	Graphic Communication II	4
GDT 260	Animated Graphics	4

Required Support Courses		(4 Credits)
ART 111	Basic Drawing I	4

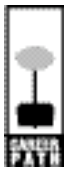
Minimum Credits Required for the Program: 68

Footnotes:
Recommended General Education courses:
For Area 1, ENG 111 or ENG 122 is recommended
For Area 2, COM 101 is recommended
For Area 3, MTH 151 is recommended

Photography

Basic Photographic Imaging (CTBPHO)

Certificate



This program prepares you for entry-level positions in photographic sales or processing. You will acquire skills in the use of 35 mm and medium format cameras. You will also learn studio lighting and image production in a darkroom and using a computer. The program also gives you credits that can be applied toward a degree in photography.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisors: Terry Abrams, Jennifer Baker, Don Werthmann

Major/Area Requirements		(22 Credits)
PHO 103	History of Photography	3
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	3
PHO 122	Photography II	4
PHO 124	Color Photography	4
PHO 127	Digital Photo Imaging I	4

Minimum Credits Required for the Program: 22

Photographic Technology (APPHOT)

Associate in Applied Science Degree

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.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisors: Terry Abrams, Jennifer Baker, Don Werthmann

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(18 Credits)
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective	Area 3: Mathematics	3-4
Elective	Area 4: Natural Science, Group I	3-4
Elective	Area 5: Social and Behavioral Science, Group I	3
Elective	Area 6: Arts and Humanities, Group I	3

Major/Area Requirements		(42 Credits)
PHO 103	History of Photography	3
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	3
PHO 122	Photography II	4
PHO 124	Color Photography	4
PHO 127	Digital Photo Imaging I	4
PHO 211	Large Format Photography	3
PHO 230	Portfolio Projects	3
PHO 231	Portfolio Seminar	4
Electives	Complete a minimum of 10 credits from: PHO 101, 116, 174, 210, 212, 216, 219, 220, 227, 228, or 274	10

Minimum Credits Required for the Program: 60

Footnotes:
Recommended General Education courses:

For Area 1, ENG 100 or ENG 111 is recommended
For Area 2, COM 102 is recommended
For Area 3, MTH 151, MTH 152, MTH 160, or MTH 169 is recommended

Video Production

Digital Video Film Production (CFVID)

Certificate

This program prepares you for entry-level media production positions in organizations where you will create digitized video productions for 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. You also will gain skills in the use of computer software applications.

Business and Computer Technologies Division
Visual Arts Technology Department

Advisor: Dan Kier

Program Admission Requirements:

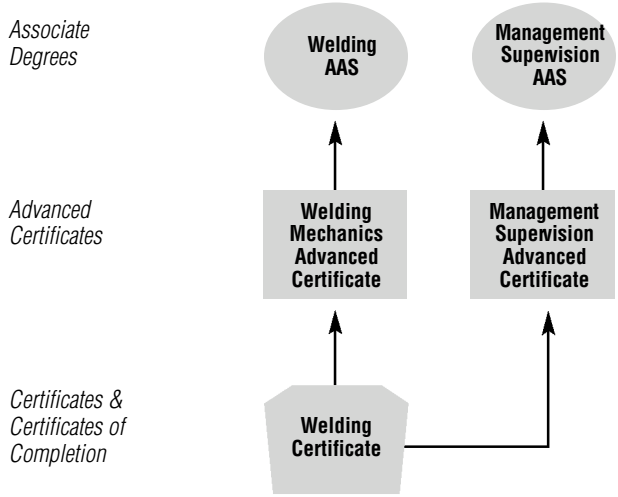
- A high school Macintosh-based course, or GDT 105 with a "C-" or better, or instructor permission is required to enroll in GDT software courses.

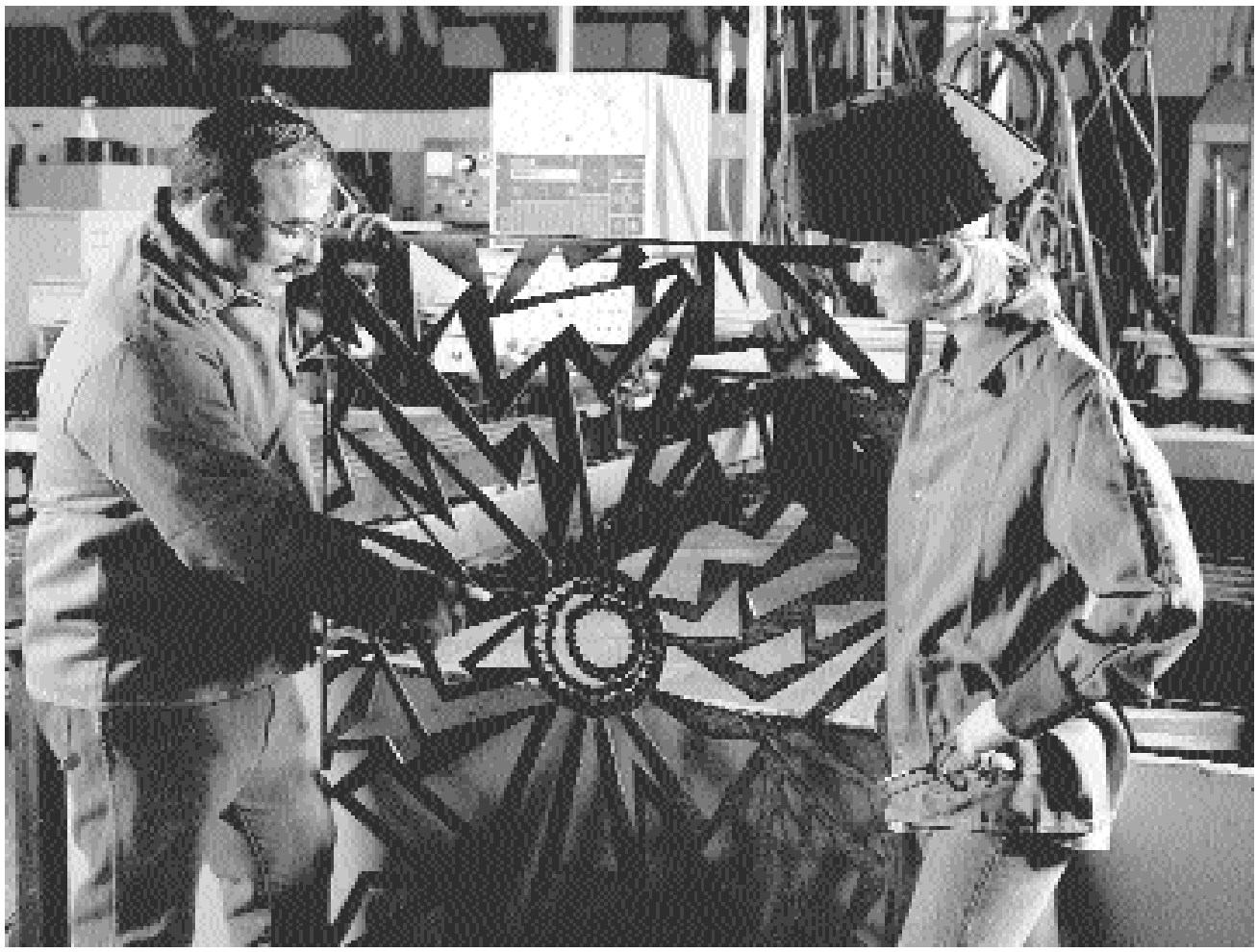
Major/Area Requirements		(21 Credits)
GDT 141	Introduction to Photoshop	2
GDT 142	Intermediate Photoshop	2
GDT 150	Design for the Internet	4
VID 101	Video Production I	3
VID 102	Video Production II	3
VID 110	Digital Video Editing I	3
VID 112	Digital Video Editing II	4

Required Support Courses		(9 Credits)
ENG 115	Scriptwriting for Media	3
Electives	Complete two courses from the following: CIS 290, ENG 208, HUM 150, 160, VID 174	6-8

Minimum Credits Required for the Program: 30

Welding Career Paths





Career Path Key: Certificate/Certificate of Completion; Advanced Certificate; Associate's Degree; Post-Associate Certificate

Welding (CTWLDC)

Certificate

This program prepares you for entry-level jobs involving gas welding, brazing, and various combinations of arc welding processes, where you will work under the supervision of an experienced welding technician. The program also gives you a foundation for WCC's Advanced Certificate in Welding Mechanics.

Health and Applied Technologies Division
Welding and Fabrication Department

Advisors: William Figg, Clyde Hall

Major/Area Requirements **(21 Credits)**

WAF 105	Welding for Art & Engineering	2
WAF 106	Blueprint Reading for Welders	3
WAF 111	Welding I Oxy-Acetylene	4
WAF 112	Welding II Basic ARC	4
WAF 123	Welding III Advanced Oxy-Acetylene (OAW)	4
WAF 124	Welding IV Advanced ARC (SMAW)	4

Minimum Credits Required for the Program: 21

Welding Mechanics (CVWLDA)

Advanced Certificate

This program prepares you for jobs as a welding maintenance mechanic where you 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.

Health and Applied Technologies Division
Welding and Fabrication Department

Advisors: William Figg, Clyde Hall

Program Admission Requirements:
Students must successfully complete the Welding Certificate

Major/Area Requirements **(20 Credits)**

WAF 200	Layout Theory Welding	3
WAF 210	Welding Metallurgy	3
WAF 215	Welding V Advanced GTAW & GMAW	4
WAF 227	Basic Fabrication	3
WAF 229	Shape Cutting Operations	3
WAF 289	MIG Welding	4

Minimum Credits Required for the Program: 20

Welding (APWLDT)

Associate in Applied Science Degree

Some employers require or prefer employees to have an associate degree as a condition for employment or for advancement. You can earn an AAS in Welding by completing the requirements listed below.

Health and Applied Technologies Division
Welding and Fabrication Department

Advisors: William Figg, Clyde Hall

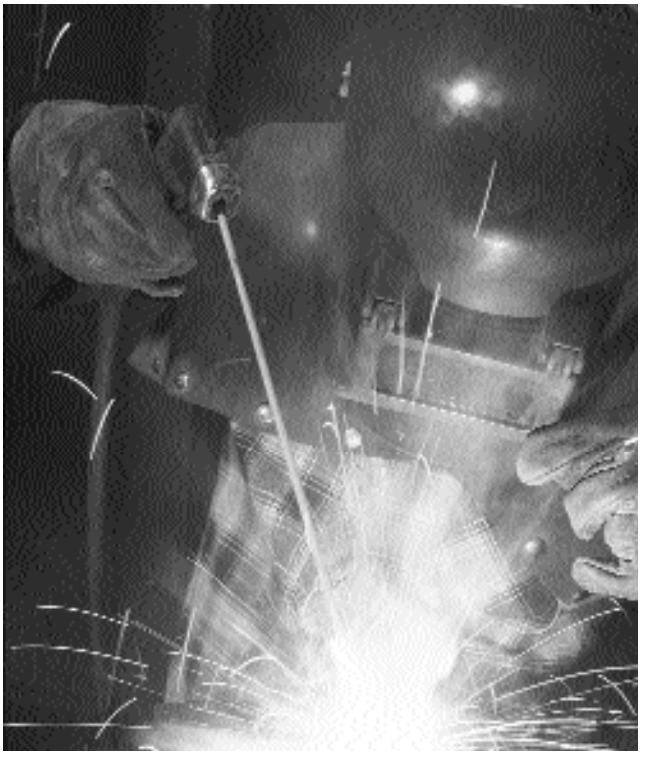
Continuing Eligibility Requirements:
Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

Requirements

1. Complete the Welding Technology Certificate 21
2. Complete the Welding Technology Advanced Certificate 20
3. Complete additional credits as free electives to bring the program total to 60 credits. 1
4. Complete one Group I course from each of the six General Education Areas* 18-21

Minimum Credits Required for the Program: 60

Footnotes:
**For Area 3: MTH 107 is recommended.*



University Parallel Programs

University parallel or "transfer" programs are designed to parallel the first two years of study at a four-year college or university. Some of these programs are very general, with many electives that provide the flexibility needed to meet the requirements of a variety of bachelor's degree programs. Other programs have very defined requirements that are intended to transfer to a specific bachelor's degree program. Most of the programs carry either the Associate in Arts (A.A.) Degree or the Associate in Science (A.S.) Degree, the two primary transfer degrees.

Before beginning any transfer program, a student should consult with an academic advisor or counselor to obtain a program articulation agreement (if there is one) or transfer guide. Early in the program, the student should contact an undergraduate advisor at the transfer-college for specific admission and curriculum requirements and, if available, an unofficial transfer-credit evaluation. Copies of articulation agreements and transfer guides are available in the Counseling Office on the second floor of the Student Center Building. Computers with access to the Internet web sites of four-year colleges and universities also are available there.

MACRAO Agreement

Many of the programs in this section meet the requirements of the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Agreement for transferring general education courses between participating Michigan colleges and universities. If a program meets MACRAO requirements, it will be noted under "Articulation" in the program description.

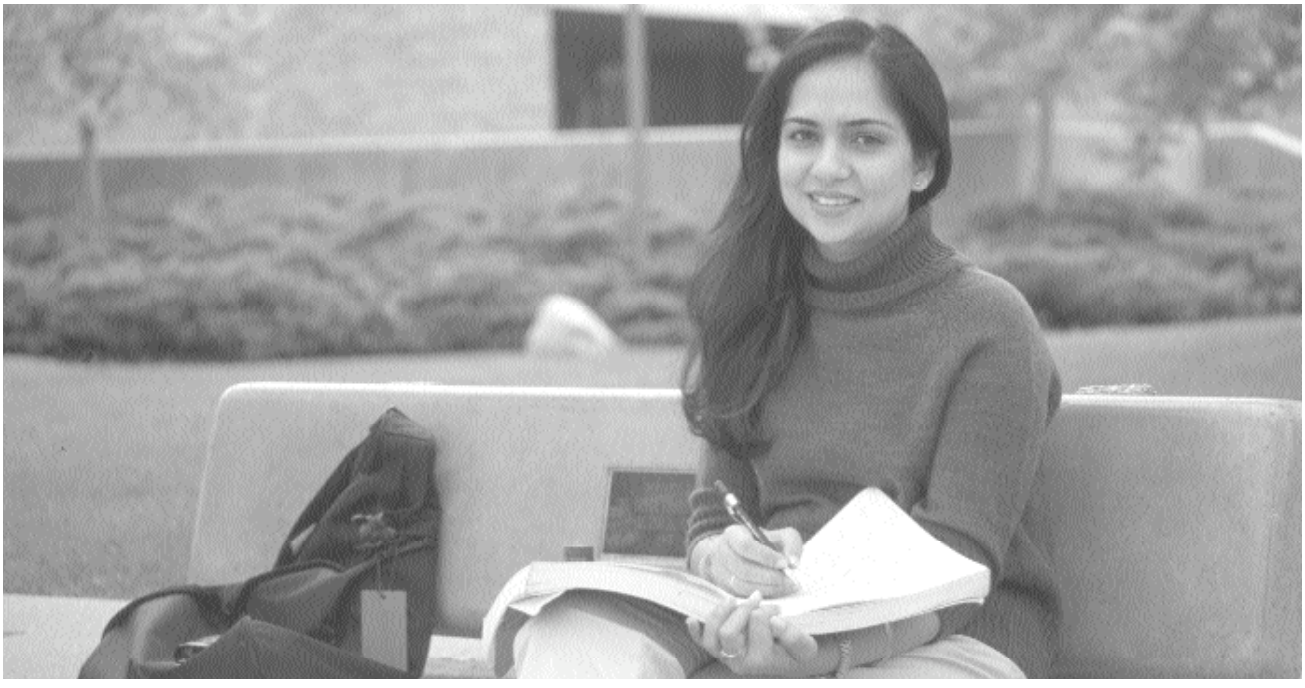
To use MACRAO, you must have the Student Records Office certify your transcript for MACRAO completion before sending it to the college to which you are transferring. Not all four-year colleges and universities participate in MACRAO and some that do participate have limitations or exceptions to the agreement. A detailed explanation of the MACRAO Agreement and a list of participating colleges can be found in Appendix A.

Articulation Agreements

Some transfer programs are based on articulation agreements with other colleges. If a program has an articulation agreement, it will be noted under "Articulation" 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

Transfer guides are helpful in listing WCC courses that transfer to specific bachelor's 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 (AABAS)

Associate in Arts Degree

This program prepares you for transfer to a Bachelor's of Business Administration degree program at a four-year college or university, where you will further improve your 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.

Business and Computer Technologies Division
Business Department

Advisor: Steve Ennes, Cheryle Gracie

Articulation:

- This program has an articulation agreement with Eastern Michigan University, College of Business, for the Bachelor of Business Administration Degree. Copies of the articulation agreement are available in the Counseling Office
- Meets MACRAO plus EMU's additional four requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.
- A minimum cumulative GPA of 2.5 is required for admission to EMU's College of Business. All courses must be completed with a minimum grade of "C" (2.0) to transfer. Contact the College of Business Undergraduate Advising Office at EMU early to have transfer credits reviewed and unofficially evaluated. (734-487-2344 or email amelia.chan@emich.edu)

Program Admission Requirements:

- Students must have a minimum COMPASS Algebra score of 66 or complete MTH 169 with a "C" or better to enroll in MTH 181. Two years of high school algebra (Algebra I and Algebra II) are recommended.
- Students should have a working knowledge of applications software or enroll in CIS 100 prior to taking CIS 110.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (29 Credits)

COM 101	Fundamentals of Speaking	3
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Choose:	MTH 181 Mathematical Analysis I or MTH 197 Linear Algebra	4
Electives	Area 1: Writing	6-7
Elective *	Area 4: Natural Science	4-5
Electives **	Area 6: Arts and Humanities (At least one course must be from Group I.)	6

Major/Area Requirements (24 Credits)

ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
BMG 140	Introduction to Business	3
BMG 207	Business Communication	3
BMG 265	Business Statistics	3
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
Choose:	BMG 106 Legal Basics in Business or BMG 111 Business Law I	3

Required Support Courses (7 Credits)

CIS 110	Introduction to Computer Information Systems	3
Electives ***	Complete one or two courses as free electives to bring the program total to a minimum of 60 credits	4-6

Minimum Credits Required for the Program: 60

Footnotes:

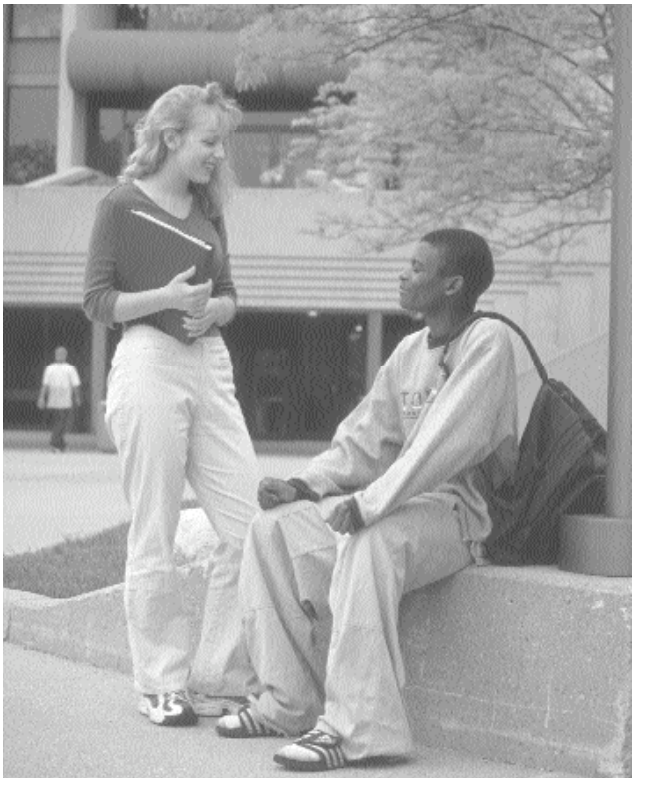
**Students transferring to a 4-yr institution should choose a lab-based course.*

***Students transferring to EMU should choose a multi-cultural course (ENG 181 or ENG 214) to meet the MACRAO plus four requirements. In addition, 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.*

Note:

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.



Computer Information Systems Transfer (AACIST)

Associate in Arts Degree

This program prepares you to transfer to a bachelor's degree program in computer information systems at a four-year college or university, where you will continue developing the skills needed for a career in areas such as systems analyst, programmer, software engineer, database specialist, and information systems management administrator. The program transfers to Eastern Michigan University.

Business and Computer Technologies Division
Computer Instruction Department

Advisors: Michael Galea, Phil Geyer, Clarence Hasselbach, Usha Jindal, Khaled Mansour, Roland Meade, Janet Remen, John Rinn

Articulation:

- This program has an articulation agreement with Eastern Michigan University, College of Business, for the Bachelor of Business Administration in Computer Information Systems. Copies of the agreement are available in the Counseling Office.
- Meets MACRAO plus EMU's additional four requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.
- A minimum cumulative GPA of 2.5 is required for admission to EMU's College of Business. All courses must becompleted with a minimum grade of 2.0 to transfer. Contact the College of Business, Undergraduate Advising Office at EMU early to have transfer credits reviewed and unofficially evaluated. (734-487-2344 or email amelia.chan@emich.edu)

Program Admission Requirements:

- Students must have a minimum COMPASS Algebra score of 66 or complete MTH 169 with a "C" or better to enroll in MTH 181. Two years of high school algebra (Algebra I and Algebra II) are recommended.
- Students should have a working knowledge of applications software or enroll in CIS 100 prior to taking CIS 110.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (30 Credits)

COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
ENG 122	Composition II	3
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Choose:	MTH 181 Mathematical Analysis I or MTH 197 Linear Algebra	4
Elective *	Area 4: Natural Science	4
Electives **	Area 6: Arts and Humanities. (At least one course must be from Group I.)	6

Major/Area Requirements (32 Credits)

ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
BMG 207	Business Communication	3
CIS 110	Introduction to Computer Information Systems	3
CPS 171	Introduction to Programming with C++	4
CPS 271	Object Features of C++	4
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
Choose:***	CIS 238 PC Assembly Language or CPS 272 Data Structures with C++	3-4
Elective #	Complete 3 credits as an open elective	3

Minimum Credits Required for the Program: 62

Footnotes:

**Students transferring to EMU or another 4-yr institution should choose a lab-based science course.*

***Students transferring to EMU should choose a multi-cultural course to meet the MACRAO plus four requirements.*

****Credit is awarded for EMU's IS 315, if student successfully passes CPS 272 and passes a validation examination at EMU.*

#Students transferring to EMU are strongly encouraged to take BMG 140 (it is required for admission to the College of Business)

Electrical & Computer Engineering (ASECE)

Associate in Science Degree

This program prepares you for transfer to a Bachelor of Science in Engineering program at a four-year college or university where you will continue to develop skills in computers and digital systems or electrical engineering. This program gives you a foundation in electronics and computer technology, including circuits and devices, communication theory, computers, software, electronic hardware, and control systems. This program transfers to the University of Michigan-Dearborn.

Business and Computer Technologies Division
Electricity/Electronics Department

Advisors: William Cleary, Dale Petty

Articulation:

- This program has an articulation agreement with the University of Michigan-Dearborn, College of Engineering and Computer Science, Bachelor of Science in Engineering (BSE) in Electrical Engineering. Check with an advisor for information on transferring to colleges other than the UM-Dearborn. Copies of the agreement are available in the Counseling Office.

Program Admission Requirements:

- Students must have a minimum COMPASS Trigonometry score of 46 or complete (MTH 176 and MTH 178) or MTH 180 with a grade of "C" or better 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.
- One semester of high school chemistry or successful completion of CEM 057 is required to enroll in CEM 111
- One semester of high school physics or PHY 105 or PHY 111 with a "C" or better is required to enroll in PHY 211.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements		(31 Credits)
CEM 111	General Chemistry I	4
COM 101	Fundamentals of Speaking	3
ECO 211	Principles of Economics I	3
ENG 111	Composition I	4
MTH 191	Calculus I	5
MTH 192	Calculus II	4
PHY 211	Analytical Physics I	5
Elective *	Area 6: Arts and Humanities	3

Major/Area Requirements		(14 Credits)
ECE 100	Introduction to Engineering and Computers	2
ECE 210	Circuits	4
ECE 270A	Computer Fundamentals	4
ECE 273	Digital Systems	4

Required Support Courses		(17 Credits)
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295	Differential Equations	4
PHY 222	Analytical Physics II	5

Minimum Credits Required for the Program: 62

Footnotes:

**Students transferring to UM-Dearborn should obtain a copy of the articulation guide fo choose a course that meets the UM- Dearborn Humanities requirement.*

Elementary Education (AAELEM)

Associate in Arts Degree

This program prepares you 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 you should obtain the current curriculum from the college to which you are transferring and talk to an undergraduate advisor early in your studies. Curriculum and admission requirements are available on most colleges' websites.

Math, Natural and Behavioral Sciences Division
Behavioral Science Department

Advisors: Behavioral Sciences Department faculty

Articulation:

This program meets MACRAO plus Eastern Michigan University's four additional requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

Students must have a COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better to enroll in MTH 148. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.
- 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.

First Semester		(16 Credits)
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
GEO 101	World Regional Geography	3
PLS 112	Introduction to American Government	3
Choose:*	MUS 140 Music Theory I or MUS 180 Music Appreciation	3

Second Semester		(16 Credits)
ENG 122	Composition II	3
GLG 202	Earth Science for Elementary Teachers	3
MTH 148	Functional Mathematics for Elementary Teachers I	4
PSY 100	Introductory Psychology	3
Choose:	ART 143 Art and Culture of Afro-America or ART 150 Monuments from Around the World or ENG 181 African American Literature	3

Third Semester		(15 Credits)
ENG 240	Children's Literature	3
PSY 251	Education of Exceptional Children	3
Choose:**	ENG 225 Advanced Composition or COM 102 Interpersonal Communication	3
Choose:	CIS 100 Introduction to Software Applications or CIS 110 Introduction to Computer Information Systems	3
Elective ***	Complete one course in your major or minor area (e.g. language arts, math, science, social studies, etc.)	3

Fourth Semester **(13 Credits)**

EDU 201	Field Experience in Teaching and Learning	1
MTH 149	Functional Math for Elementary School Teachers II	4
PHY 100	Physics for Elementary Teachers	4
PSY 220	Human Development & Learning	4

Minimum Credits Required for the Program: 60

Footnotes:
**For EMU select MUS 140; for CMU select MUS 180.*
***For the Language Arts major or minor at EMU select ENG 181*
****See an advisor to select a course that will meet the requirements of the college to which you are transferring.*

General Studies in Liberal Arts (AAGSLA)

Associate in Arts Degree

This program allows you to design a program of study to meet your individual needs. This may be a good option if you are undecided about a major or if you simply want to explore various areas in the arts and social sciences. This program also allows you to customize your coursework to the requirements of the senior college or university to which you are transferring. You should begin by meeting with a counselor who will assist you in developing a program of study that meets all of the College's graduation requirements. A counselor can also help you determine your interests and career and educational goals as well as provide transfer and career information

Humanities and Social Sciences Division
All Departments

Advisors: See a counselor or faculty advisor from the area you are interested in studying.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Studies Program Requirements

1. Complete the General Education Requirements for the Associate in Arts Degree 29-30
2. Complete an additional 15 credits of coursework from the following disciplines: (ANT, ART, COM, DAN, DRA, ECO, ENG, FRN, GEO, GRM, HST, HUM, MUS, PLS, PSY, SOC, SPN, YOG). 15
3. Complete additional coursework as free electives to bring the program total to 60 credits. 16

Minimum Credits Required for the Program: 60

General Studies in Math and Natural Sciences (ASGSMS)

Associate in Science Degree

This program allows you to design a program of study to meet your individual needs. This may be a good option if you 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 you to customize your coursework to the requirements of the senior college or university to which you are transferring. You should begin by meeting with a counselor who will assist you in developing a program of study that meets all of the College's graduation requirements. A counselor can also help you determine your interests and career and educational goals as well as provide transfer and career information.

Math, Natural and Behavioral Sciences Division
All Departments

Advisors: See a counselor or faculty advisor from the area you are interested in studying.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Studies Program Requirements

1. Complete the general Education Requirements for the Associate in Science degree 25-30
2. Complete an additional 15 credits of coursework from the following disiciplines: (AST, BIO, CEM, GLG, MTH, PHY, and SCI).....15
3. Complete additional coursework as free electives to bring the program total to 60 credits. 20

Minimum Credits Required for the Program: 60

Human Services (AAHUST)

Associate in Arts Degree

This program prepares you 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 you will need to work on a one-to-one basis or in groups to help people cope with problems. The program also prepares you to transfer to a bachelor's degree program where you will continue developing skills for a career in the field of social work. The program transfers to Eastern Michigan University and Madonna University. Specific course requirements for EMU and Madonna are listed in the footnotes. For more details, copies of the articulation agreements may be obtained from the counseling office or a program advisor.

Math, Natural and Behavioral Sciences Division
Behavioral Science Department

Advisors: Mimi Norwood, Chris Siehl

Articulation:

This program has articulation agreements with the following institutions:

- Eastern Michigan University, College of Health and Human Services, Bachelor of Arts or Science in Social Work. Students should meet with an EMU Department of Social Work advisor before applying for admission to EMU's Program.
- Madonna University, College of Social Sciences, BSW in Social Work
- Meets MACRAO plus EMU's and Madonna's additional requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

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 minimum COMPASS scores or complete the equivalent courses:

- COMPASS Algebra score of 46 or MTH 097 with a "C" or better
- College Level COMPASS scores in reading and writing 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
- 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:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

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 course.
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.

General Education Requirements		(29 Credits)
COM 101	Fundamentals of Speaking	3
MTH 160	Basic Statistics	4
PSY 100	Introductory Psychology	3
SOC 100	Principles of Sociology	3
Choose:*	BIO 101 Concepts Of Biology or BIO 102 Human Biology	4
Electives	Area 1: Writing	6-7
Electives **	Area 6: Arts and Humanities. (At least one course must be from Group I.)	6

Major/Area Requirements		(25 Credits)
HSW 100	Introduction to Human Services	3
HSW 150	Helping Approaches for Groups	3
HSW 200	Intro to Interviewing and Assessment Techniques	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 & Ethnic Relations	3
Elective ***	Optional: HSW 232 Field Internship and Seminar II	0-3

Required Support Courses (6 Credits)

CIS 100	Introduction to Software Applications	3
Elective #	Complete one course from: COM 102, ENG 225, or PLS 112	3

Minimum Credits Required for the Program: 60

Footnotes:

**If Transferring to Madonna University, select BIO 101.*

*** If transferring to EMU, select ENG 181. If transferring to Madonna, select HUM 145 and an additional course from: ART 150, ENG 213, ENG 224, or MUS 180*

**** This additional internship is recommended especially for students who plan on going directly into the workplace and for transfer students who need or want additional field experience before committing to a bachelor's degree program. Please see your program advisor for more information.*

#EMU requires COM 102 or ENG 225; Madonna University requires PLS 112

Humanities and Social Science (AAHSAA)

Associate in Arts Degree

This program prepares you to transfer to a four-year college or university to pursue a bachelor's degree with a major in a liberal arts, humanities, or social science discipline. It also gives you skills in communications and analytical, computational, and critical thinking; all of which provide flexibility in a changing job market. Liberal arts graduates become economists, foreign service officers, journalists, librarians, lawyers, and psychologists among other possible professions. Some of the program concentrations may not be transferable. Check program requirements and transfer equivalencies for the college to which you are transferring.

Humanities and Social Sciences Division

See Concentration for the Department

Advisor: See the concentrations below for an advisor

Articulation:

Meets the MACRAO transfer agreement plus EMU's four additional requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better to enroll in a math course for the AA degree. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (29 Credits)

COM 101	Fundamentals of Speaking	3
PLS 112	Introduction to American Government	3
PSY 100	Introductory Psychology	3
Electives	Area 1: Writing	6-7
Elective *	Area 3: Mathematics.	4
Elective	Area 4: Natural Science (transfer students should select a lab course)	4
Electives **	Area 6: Arts and Humanities. (At least one course must be from Group I.)	6

Required Support Courses (18 Credits)

Choose:	CIS 100 Introduction to Software Applications or CIS 110 Intro to Computer Information Systems or CPS 171 Introduction to Programming with C++	3-4
Electives **	Complete 12 additional credits from General Education Areas 5 and 6, Groups I and/or II.	12
Elective	Complete one course from the following: COM 102, ENG 225, or a second course in a Foreign Language (FRN, GRM, SPN)	3-5

** EMU Transfer Students: See a counselor to select an appropriate course.*

** UM Transfer Students: To complete requirements for the Mathematics & Symbolic Analysis distribution area, choose MTH 182 or higher.*

*** EMU Transfer Students: Choose one course from Area 5 or 6 that meets the cross-cultural requirement.*

UM Transfer Students: Except for the Bachelor of General Studies, the College of LS&A requires a minimum of 16 credits of one foreign language or fourth semester proficiency.

Program Concentrations (15 Credits)

Complete the requirements for one of the following concentrations. The same course may not be used to meet both a concentration requirement and other program requirements above. Please consult an advisor to select appropriate electives.

Minimum Credits Required for the Program: 62

Humanities and Social Science Concentrations

Behavioral Science (15 Credits)

Behavioral Science Department

Advisor: Maria Ortega

SOC 100	Principles of Sociology	3
Electives	Complete an additional four courses from: PSY 107, PSY 200, PSY 206, PSY 209, PSY 257, PSY 260, SOC 202, SOC 205, SOC 207, SOC 230, SOC 250	12

Communication (COMM) (15 Credits)

Humanities Department
Advisors: Robert Kirkland, Paulette Grotrian, Bonnie Tew

COM 102	Interpersonal Communication	3
COM 130	Introduction to Mass Communication	3
COM 142	Oral Interpretation of Literature	3
COM 183	Advanced Public Speaking	3
COM 200	Family Communication	3

Contemporary Jazz (CJAZ) (17 Credits)

Performing Arts Department
Advisor: Michael Naylor

MUS 105	Basic Combo and Improvisation	1
MUS 140	Music Theory I	3
MUS 142	Music Theory II	3
MUS 143	Music Composition and Arranging	2
MUS 157	Jazz Improvisation	2
MUS 210	Functional Piano I	3
MUS 285	Career Practices in the Performing Arts	3

Dance (DANC) (16 Credits)

Performing Arts Department
Advisor: Laurice Anderson

DAN 101	Beginning Modern Dance I	1
DAN 102	Beginning Modern Dance II	1
DAN 103	Beginning Tap Dance I	1
DAN 105	Beginning Jazz Dance I	1
DAN 106	Beginning Jazz Dance II	1
DAN 107	Beginning Ballet I	1
DAN 108	Beginning Ballet II	1
DAN 110	Afro-American Dance I	1
DAN 130	Dance for Musical Theatre	2
DAN 180	Dance Appreciation: The World of Dance	3
DAN 200	Advanced Performance-Dance	2
DAN 210	Afro-American Dance II	1

Drama/Theatre (DRAM) (16 Credits)

Performing Arts Department
Advisor: Tracy Komarmy

DRA 152	Acting for the Theatre I	3
DRA 160	Movement for Actors	3
DRA 167	Theatre Production	2
DRA 170	Stratford Theatre Festival	2
DRA 208	Acting for Theatre II	3
Elective	Complete an additional three credits in DRA, DAN, or MUS	3

Fine Arts (FINA) (16 Credits)

Humanities Department
Advisor: Elisabeth Thoburn

ART 102	Color	4
ART 111	Basic Drawing I	4
ART 112	Basic Design I	4
ART 122	Basic Drawing II	4

Foreign Language (FRLG) (16 Credits)

Behavioral Science Department
Advisors: Rosalyn Biederman, Michelle Garey, Juan Redondo

Electives	Complete a first year sequence from: FRN (111 & 122) or SPN (111 & 112) or GRM (111 & 122)	10
Electives	Complete at least 6 additional credits from: Arts and Humanities Groups I & II. For French or Spanish, it is recommended that you take the second year sequence (213 & 224)	6

Humanities (HUMA) (15 Credits)

Humanities Department
Advisor: Elisabeth Thoburn

Elective	Complete at least one course from: HUM 101, HUM 102, HUM 140, HUM 150, HUM 160, ART 130, MUS 180, PHL 101, PHL 120, PHL 200, PHL 205, or PHL 250	3
Electives	Complete an additional 12 credits from: the transfer courses listed above, or other humanities courses listed in the catalog.	12

Musical Theatre (MUST) (16 Credits)

Performing Arts Department
Advisor: Michael Naylor

DAN 107	Beginning Ballet I	1
DAN 108	Beginning Ballet II	1
DRA 152	Acting for the Theatre I	3
MUS 108	Musical Theater Performance	1
MUS 204	Voice I	3
MUS 205	Voice II	3
MUS 209	Musical Theatre Song Performance Seminar	1
Choose:	DRA 160 Movement for Actors or DRA 208 Acting for Theatre II	3

Performing Arts (PERA) (15 Credits)

Performing Arts Department
Advisors: Tracy Komarmy, Michael Naylor, Laurice Anderson

Electives	Complete 15 credit hours from: DRA 152, DRA 153, DRA 167, DRA 170, DAN 101, DAN 105, DAN 107, DAN 110, DAN 122, MUS 106, MUS140, MUS 146, MUS 180, MUS 210, MUS 233	15

Social Science (SOCS) (15 Credits)

Humanities Department
Advisor: Randy LaHote

ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
HST 201	United States History to 1877	3
HST 202	United States History Since 1877	3
Elective	Complete one course from: HST 121, HST 122, or HST 123	3

Writing and Literature (WRLT) (15 Credits)

Humanities Department
Advisor: Ruth Hatcher

Electives	Complete five courses from:ENG 160, ENG 170, ENG 181, ENG 200, ENG 211, ENG 212, ENG 213, ENG 222, ENG 223, ENG 224, ENG 270, ENG 271 (or choose from other ENG courses listed in the catalog).	15

International Studies (AAINS)

Associate in Arts Degree

This program prepares you to transfer to a four-year college or university where you will continue to prepare for a career in international relations or another field with an international dimension. The program gives you a foundation in foreign language and cultural studies while providing the flexibility to meet general education requirements for most four-year colleges.

Humanities and Social Sciences Division
Foreign Language Department

Advisors: Rosalyn Biederman, Randy LaHote, Juan Redondo, Elizabeth Thoburn

Articulation:
Meets the MACRAO transfer agreement plus EMU's for additional requirements. Students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:
Students must have a minimum COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better to enroll in a math course for AA degree. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements:
Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (29 Credits)

COM 101	Fundamentals of Speaking	3
PLS 112	Introduction to American Government	3
Choose:*	ECO 211 Principles of Economics I or SOC 100 Principles of Sociology	3
Electives	Area 1: Writing	6-7
Elective **	Area 3: Mathematics	4
Elective	Area 4: Natural Science (transfer students should select a lab course)	4
Electives	Area 6: Arts and Humanities. (At least one course must be from Group I.)	6

Major/Area Requirements (34 Credits)

ART 150	Monuments from Around the World	3
ENG 213	World Literature I	3
HUM 145	Comparative Religions	3
PLS 211	Introduction to Comparative Government	3
Choose:	GEO 100 World Regional Geography or GEO 103 Cultural Geography	3
Choose:	ANT 201 Introduction to Cultural Anthropology or ECO 280 International Economics	3
Electives	Complete four semesters of one foreign language (FRN 111, 122, 213, and 224) or (SPN 111, 122, 213, and 224)	16

Required Support Courses (3 Credits)

Choose:	CIS 110 Intro to Computer Information Systems or CPS 171 Introduction to Programming with C++	3-4

Minimum Credits Required for the Program: 66

Footnotes:

* *Choose ECO 211 as a pre-requisite for ECO 280 or choose SOC 100 as a pre-requisite for ANT 201*

** *Students transferring to EMU should see a counselor to select an appropriate math course. UM transfer students should choose MTH 182 or higher to complete requirements for the Mathematics & Symbolic Analysis distribution area.*

*** *Choose one course that meets the multi-cultural requirement at EMU (ART 143, ENG 181, ENG 214)*

Liberal Arts Honors Transfer to UM-LSA (AALAHT)

Associate in Arts Degree

This joint articulated program between WCC and University of Michigan (UM) prepares you, through an academically challenging curriculum, to transfer to UM's College of Literature, Science and the Arts (LSA). The program is open to students who meet both WCC and UM-LSA admissions requirements and includes tracks that prepare you for humanities, social science, pre-law, economics, math, natural science, or pre-medicine majors at UM. Successful completion of the WCC program guarantees junior-standing admission to the UM-LSAwhere you may complete a bachelor of arts, a bachelor of science, or a bachelor of general studies degree. Completion of a bachelor's degree program prepares you for careers in fields ranging from law, medicine, or business, to education or fine arts, or to pursue graduate level education.

Humanities and Social Sciences Division
Social Science Department

Advisor: Randy LaHote

Articulation:

This program has a transfer agreement with the University of Michigan-Ann Arbor, College of Literature, Science and the Arts. Copies of the agreement are availabe in the Counseling Office.

Program Admission Requirements:

Students applying to this program must meet the admissions requirements of both WCC and UM-LSA:

- A minimum high school grade point average of 3.0
- SAT score of 1100 or higher or ACT composite score of 24 or higher

Minimum high school work must include:

- Four years of English
- Three years of Math
- Two years of biology/physical science
- Three years of history/social studies
- Two years of one foreign language

Continuing Eligibility Requirements:

- To receive admission to the UM-LSA through this program agreement, students must complete their WCC coursework within three years with a minimum cumulative GPA of 3.25 in program courses.
- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

First Semester		**(15 Credits)**
PLS 112	Introduction to American Government	3
SPN 111	First Year Spanish I	5
Choose:	ENG 111 Composition I or ENG 122 Composition II	3
Choose:*	MTH 160 Basic Statistics or MTH 191 Calculus I	4-5

Second Semester		**(18 Credits)**
CPS 171	Introduction to Programming with C++	4
SPN 122	First Year Spanish II	5
Choose:	ENG 122 Composition II or ENG 225 Advanced Composition	3
Choose:	PSY 100 Introductory Psychology or HST 201 United States History to 1877	3
Choose:*	ENG 170 Intro to Literature: Short Story and Novel or MTH 192 Calculus II	3-4

Third Semester		**(16 Credits)**
BIO 101	Concepts Of Biology	4
COM 130	Introduction to Mass Communication	3
ECO 211	Principles of Economics I	3
SOC 205	Race & Ethnic Relations	3
SPN 213	Second Year Spanish I	3

Fourth Semester		**(16 Credits)**
ECO 222	Principles of Economics II	3
PHL 102	History of Philosophy	3
SPN 224	Second Year Spanish II	3
Choose:	BIO 102 Human Biology or BIO 103 General Biology II	4
Choose:	HST 202 United States History Since 1877 or ENG 211 American Literature I	3

Minimum Credits Required for the Program: 65

Footnotes:

**Choose MTH 160 and ENG 170 if you plan to go into Humanities, Social Science, or Pre-law. Choose MTH 191 and MTH 192 if you plan to go into Economics, Math, Science, or Pre-medicine.*

Math and Science (ASMSAS)

Associate in Science Degree

This program prepares you to transfer to a four-year college or university complete a bachelor's degree in biology, chemistry, computer science, math, or physics. The program will give you a solid foundation in math and science. Students should obtain program requirements and transfer equivalencies from the college to which they are transferring.

Math, Natural and Behavioral Sciences Division
See concentrations for the Department

Advisors: See the concentrations below to select an advisor

Articulation:

This program will fulfill MACRAO requirements if, in addition to the courses completed to meet General Education requirements, you complete one additional course in Arts & Humanities and two additional courses in Social & Behavioral Science. The concentrations in Computer Science and Mathematics include elective credit hours that can be used for this purpose. To use MACRAO, students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

- Students must have a minimum COMPASS Trigonometry score of 46 or complete (MTH 176 and MTH 178) or MTH 180 with a grade of "C" or better to begin the math sequence. Two years of high school algebra and one year of high school pre-calculus are recommended to prepare for this program.
- The chemistry, physics, and computer science concentrations require one semester of high school physics or PHY 105 or 111 with a "C" or better to enroll in PHY 211.
- A high school computer course or CIS 100 is required to enroll in CIS 110.
- The biology, chemistry, and physics concentrations require one year of high school chemistry or CEM 057 to enroll in CEM 111.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (29 Credits)

MTH 191	Calculus I	5
MTH 192	Calculus II	4
Choose:*	(BIO 101 and BIO 103) or (PHY211 and PHY 222)	8-9
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective	Area 5: Social Science	3
Elective	Area 6: Arts and Humanities	3

**The Biology concentration requires the biology sequence; the Mathematics concentration may use either sequence; all other concentrations require the physics sequence*

Required Support Courses (10 Credits)

CIS 110	Intro to Computer Information Systems	3
CPS 171	Introduction to Programming with C++	4
Choose:**	ENG 107 Technical Communication or ENG 122 Composition II	3

***The Chemistry/Pre-med and Physics concentrations require ENG 107; all other concentrations require ENG 122*

Program Concentrations (25 Credits)

Complete the requirements for one of the following concentrations. The same course may not be used to meet both a concentration requirement and other program requirements above. Please consult an advisor to select appropriate electives.

Minimum Credits Required for the Program: 64

Math and Science Concentrations

Biology/Pre-Medicine (BMED) (28 Credits)

Life Sciences Department
Advisors: David Shier, Esta Grossman

CEM 111	General Chemistry I	4
CEM 122	General Chemistry II	4
CEM 211	Organic Chemistry I	4
CEM 222	Organic Chemistry II	4
Choose:	BIO 227 Animal Physiology or BIO 228 Botany	4
Electives	Complete 8 to 9 credits from the following: BIO 102, BIO 111, BIO 208, BIO 215, BIO 216, BIO 227, BIO 228, BIO 237	8-9

Recommended general education courses for Area 5: PSY 100 or PLS 112

Chemistry/Pre-Medicine (CMED) (28 Credits)

Physical Science Department
Advisors: Kathy Butcher, Robert Hagood

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
Elective	Complete one additional chemistry course.	4

Computer Science (COMS) (25 Credits)

Computer Instruction Department
Advisors: Janet Remen, Roland Meade

CIS 238	PC Assembly Language	3
CPS 271	Object Features of C++	4
CPS 272	Data Structures with C++	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4

Electives	Complete two additional courses from Area 5 and/or Area 6 from Groups I and/or II (PLS 112 and PSY 100 are recommended)	6

Mathematics (MATH) (25 Credits)

Mathematics Department
Advisor: James Egan

MTH 160	Basic Statistics	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295	Differential Equations	4
Electives *	Complete three additional courses from Area 5 and/or Area 6, Groups I and/or II (PLS 112and PSY 100 are recommended)	9

Physics (PHYS) (28 Credits)

Physical Science Department
Advisors: Kathy Butcher, Robert Hagood

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
MTH 295	Differential Equations	4

Pre-Engineering Science Transfer (ASPET)

Associate in Science Degree

This program prepares you to transfer into an engineering program at a four-year college or universitywhere you will continue preparing for a career in one of the fields of engineering. Because requirements vary slightly from one engineering field to another, two pre-engineering options have been developed. A program advisor will help you determine which option best meets your individual needs. Before selecting general education courses, see a counselor or advisor for a transfer guide from the four-year college to which you are transferring.

Math, Natural and Behavioral Sciences Division
Physical Sciences Department
Advisor: George Kapp

Articulation:

The General Engineering Option will meet MACRAO if you complete ENG 122 as an elective and complete an additional course in Social and Behavioral Science. To use MACRAO, students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

- Students must have a minimum COMPASS Trigonometry score of 46 or complete (MTH 176 and MTH 178) or MTH 180 with a grade of "C" or better 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.
- One semester of high school chemistry or successful completion of CEM 057 is required to enroll in CEM 111
- One semester of high school physics or PHY 105 or PHY 111 with a "C" or better is required to enroll in PHY 211.

Continuing Eligibility Requirements:

Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (29 Credits)

CEM 111	General Chemistry I	4
CEM 122	General Chemistry II	4
MTH 191	Calculus I	5
MTH 192	Calculus II	4
Elective	Area 1: Writing	3-4
Elective	Area 2: Speech	3
Elective	Area 5: Social and Behavioral Science	3
Elective	Area 6: Arts and Humanities	3

Major/Area Requirements (26 Credits)

CPS 171	Introduction to Programming with C++	4
MTH 197	Linear Algebra	4
MTH 293	Calculus III	4
MTH 295 *	Differential Equations	4
PHY 211	Analytical Physics I	5
PHY 222 *	Analytical Physics II	5

Program Options (9 Credits)

Complete the required courses in either the General Option or the Chemical and Materials Engineering Option below. Check course prerequisites to determine the sequence for taking courses.

Minimum Credits Required for the Program: 64

Footnotes:

**It is recommended that you take MTH 295 (Differential Equations) before PHY 222 (Analytical Physics II). Therefore, you may want to take MTH 293 (Calculus III), the prerequisite for differential equations, during the Spring-Summer semester following the second semester. Differential equations would then be taken in the following fall semester.*

Pre-Engineering Science Transfer Options

Chemical and Materials Engineering Option (CME) (11 Credits)

CEM 211	Organic Chemistry I	4
CEM 222	Organic Chemistry II	4
ECO 211	Principles of Economics I	3

General Engineering Option (GEN) (9 Credits)

Choose:**	ENG 107 Technical Communication or ENG 122 Composition II or MET 100 Presentation and Computer Aided Drawing	3-4
Elective	Complete one additional course from Area 5: Social and Behavioral Science	3
Elective	Complete one additional course from Area 6: Arts & Humanities	3

***ENG 107 (Technical Drawing) is required for Civil, Mechanical, and Naval Engineering at the University of Michigan. Some engineering schools may require ENG 122 Composition II.*

Secondary Education (AASECO)

Associate in Arts Degree

This program prepares you to 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, that prepare students for the State-mandated basic skills tests. Requirements may vary among colleges so you should obtain the current curriculum from the college to which you are transferring and talk to an undergraduate advisor early in your studies. Curriculum and admission requirements are available on most colleges' websites.

Math, Natural and Behavioral Sciences Division
Behavioral Science Department

Advisors: Behavioral Sciences Department Faculty

Articulation:

- This program meets MACRAO plus EMU's additional four requirements. To use MACRAO, students must have their transcripts certified for MACRAO completion by the WCC Student Records Office.

Program Admission Requirements:

Students must have a COMPASS Algebra score of 46 or complete MTH 097 with a grade of "C" or better to enroll in MTH 160. At least one year of high school algebra is recommended.

Continuing Eligibility Requirements:

- Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.
- 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.

First Semester (16 Credits)

COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
PLS 112	Introduction to American Government	3
Choose:	ENG 181 African American Literature or ENG 214 Literature of the Non-Western World	3
Elective	Complete one course from: CIS 100, 110, CPS 120, or 171	3

Second Semester (16 Credits)

ENG 122	Composition II	3
PSY 100	Introductory Psychology	3
Elective	Complete one course from: ENG 160, 170, 211, 213, 223, 224, SPN 111, 122, FRN 111, 122, GRM 111, 122	3
Elective	Complete one course from: MTH 160, 181, 182, 191, or 197	4-5
Elective	Complete one course from: COM 102, ENG 225, BOS 207, SPN, 122, 213, FRN 122, or 213	3-5

Third Semester (16 Credits)

PSY 251	Education of Exceptional Children	3
Elective	Complete one course from: BIO 101, 102, CEM 105, 111, PHY 105 or 111	4
Elective	Complete one course from: HST 121, 122, 123, 201, or 202	3
Elective	Complete one course from: ANT 201, 202, ART 101, 143, 150, DRA 152, ENG 242, HUM 101, 102, 145, MUS 140, 180, PHL 101, 205, or 250	3
Elective *	Complete 3 credits in a major or minor area.	3

Fourth Semester (12 Credits)

EDU 201	Field Experience in Teaching and Learning	1
PSY 220	Human Development & Learning	4
Electives *	Complete a minimum of 7 credits in a major or minor area.	7

Minimum Credits Required for the Program: 60

Footnotes:

**See an advisor and obtain curriculum requirements for the college to which you are transferring to select courses that will apply to your major.*

Curriculum Organization

Business and Computer Technologies Division

Business Department
Disciplines:
Accounting (ACC)
Business Management (BMG)
Real Estate (RES)
Tax (TAX)

Business Office Systems Department
Disciplines:
Business Office Systems (BOS)

Computer Instruction Department
Disciplines:
Computer Information Systems (CIS)
Computer Networking (CNT)
Computer Science (CPS)

Drafting Department
Disciplines:
Architectural Drafting (ARC)
Computer Aided Drafting (CAD)
Industrial Drafting and Design (IDD)
Mechanical Engineering Technology (MET)

Electricity/Electronics Department
Disciplines:
Electrical & Computer Engineering (ECE)
Electricity/Electronics (ELE)
Computer Networking (CNT)

Internet Professional Department
Disciplines:
Internet Professional (INP)

Visual Arts Technology Department
Disciplines:
Graphic Design Technology (GDT)
Photography (PHO)
Video (VID)

Health and Applied Technologies Division

Allied Health Department
Disciplines:
Dental Assisting (DEN)
Pharmacy Technology (PHT)
Radiography (RAD)

Automotive Services Department
Disciplines:
Automotive Body Repair (ABR)
Automotive Services (ASV)
Auto Restoration Fabrication (ARF)
Power Equipment Technology (PET)

Construction Institute
Discipline:
Construction Management (CMG)

Culinary/Hospitality Management Department
Disciplines:
Culinary Arts (CUL)
Hotel Restaurant Management (HRM)

Industrial Technology Department
Disciplines:
Fluid Power (FLP)
Machine Tool Technology (MTT)
Numerical Control (NCT)
Robotics (ROB)

Nursing & Health Science Department
Disciplines:
Health Science (HSC)
Nursing (NUR)

Technical Education Department
Disciplines:
Apprenticeship (APP)
Construction Technology (CON)
Facility Management (FMA)
Heating, Ventilating, & Air Conditioning (HVA)
Journeyman Upgrade (JUG)
Quality Control Technology (QCT)
Trade Related Instruction (TRI)

United Association
Appreticeship Plumbers (AAP)
United Association Supervision (UAS)
United Association Training (UAT)

Welding & Fabrication Department
Disciplines:
Welding & Fabrication (WAF)

Humanities and Social Science Division

Academic Skills Department
Disciplines:
Academic Skills (ACS)

Educational Development
Disciplines:
Reading (REA)

English/Writing Department
Disciplines:
English/Writing (ENG)

Foreign Language Department
Disciplines:
French (FRN)
German (GRM)
Spanish (SPN)

GED Program

Humanities Department
Disciplines:
Art (ART)
Communications (COM)
Humanities (HUM)
Philosophy (PHL)

Performing Arts Department
Disciplines:
Dance (DAN)
Drama (DRA)
Music (MUS)
Yoga (YOG)

Social Science Department
Disciplines:
Anthropology (ANT)
Economics (ECO)
Geography (GEO)
History (HST)
Political Science (PLS)

Math, Natural, and Behavioral Sciences Division

Behavioral Sciences Department
Disciplines:
Child Care Professional (CCP)
Education (EDU)
Human Services Worker (HSW)
Psychology (PSY)
Sociology (SOC)

Life Sciences Department
Disciplines:
Biology (BIO)
Physical Education Activities (PEA)

Mathematics Department
Disciplines:
Mathematics (MTH)

Physical Sciences Department
Disciplines:
Astronomy (AST)
Chemistry (CEM)
Geology (GLG)
Physical Sciences (PHY)
Science (SCI)

Public Service Careers Department
Disciplines:
Criminal Justice (CJT)
Natural Resources (NTR)

Course Descriptions

Course Descriptions

Explanation of Terms

College Level Entrance Scores:

All 100 and 200 level courses (except when specified otherwise on the course description) require the minimum College Level Entrance Scores in reading and writing, or completion of the equivalent developmental courses with a grade of "C", "P" (pass), or "S" (satisfactory). Course or test pre-requisites listed on a course description (other than for reading and writing) are in addition to the College Level Entrance Scores. The minimum College Level Entrance Scores are as follows:

Reading:

COMPASS Reading score = 82 or ACS 108 with a "C" or better, concurrent enrollment is allowed

(Other accepted test scores: ASSET Reading score = 43, or ACT Reading score = 19, or SAT Reading = 460)

Writing:

COMPASS Writing score = 81 or ENG 091 with a "C" or better

(Other accepted test scores: ASSET Writing score = 46, or ACT Writing score = 20, or SAT Writing = 480)

Math:

Pre-requisite COMPASS Math scores are established individually for math courses and other courses with math pre-requisites. If a math course has a pre-requisite it will be listed on the course description.

Consent Required

This means that in addition to any pre-requisites that may be listed, you must get an instructor's signature to register for the course. This is a requirement for all co-op, field experience, internship, and practicum courses.

Co-requisites

Co-requisite courses must be taken during the same semester as the listed course. Your registration will not be processed if there is a co-requisite course for which you are not registered.

Core Elements

Each course description lists the Core Elements, if any, that the course fulfills toward meeting the Core Curriculum graduation requirements that were in effect from Fall 1993 through Spring/Summer 2000. If you began an associate degree program in any semester from Fall 1993 through Spring/Summer 2000, you have through Spring/Summer 2003 to complete your program using the 24 Core Curriculum Elements. Beginning in Fall 2003 you will be required to meet the new General Education Requirements as a condition for graduation. For a list of courses that meet Elements13 and 14, see Appendix B in the back of the Bulletin.

Level I Pre-requisites

These are preparatory courses or placement tests that must be successfully completed before students are allowed to enroll in a course. They are enforced by the registration system. Level I pre-requisite courses must be taken before the selected course and passed with the minimum grade listed (or a "D-" if no minimum is listed). When "concurrently" or "may enroll concurrently" appears next to a pre-requisite, it means that you will be allowed to register for the course if you register for the pre-requisite course at the same time. However, it is always preferable to complete pre-requisite courses first. College Level Entrance Scores are level I pre-requisites for 100 and 200 level courses, unless stated otherwise on the course description.

Level II Pre-requisites

These courses, placement tests, or conditions that are required before enrolling in a course are not enforced by the registration system but will be checked by the instructor on the first day of class. If you cannot demonstrate to the instructor that you have met the level II pre-requisites, you may be asked to drop the course. Level II pre-requisites should be passed with the minimum grade listed (or a "D-" if no minimum is listed).

Academic Skills ACS

See Reading (REA) for additional reading courses

ACS 000: ACS Learning Lab 0 Credit

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: None

The Academic Skills Learning Lab (LA 111) is available to all students enrolled in ACS courses. It is required for students enrolled in ACS 070, 107, 108, and 109. Students not enrolled in these courses may be referred for individual consultation or practice. The Learning Lab provides instruction and interactive practice in vocabulary and comprehension skills, study skills, speed reading, and problem analysis. Students are introduced to information retrieval using CD ROM software and the Internet. Students receive immediate feedback and learn to monitor their progress. For other reading courses, look under Reading (REA).

ACS 070: Vocabularyand Comprehension Skills 4 Credits

Level I Prerequisites: COMPASS Reading = 51 or ASSET Reading = 35 or (REA 050 or ENG 063 with a "C" or better)
Corequisites: ACS 000
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is designed to strengthen students' active reading skills and includes a college-level vocabulary program. In addition, students develop abstract reasoning skills (e.g. inferencing) in relation to textbook content. Emphasis is placed on test-taking, study skills, and an introduction to the Internet. Upon testing out, a student is prepared for enrollment in WCC's occupational programs and academic courses. Students must enroll for a co-required hour in the ACS Learning Lab. The standard grading scale is used. For other reading courses, look under Reading (REA).

ACS 101: Student Success Seminar 1 Credit

Level I Prerequisites: COMPASS Reading = 51 or ASSET Reading = 35 or REA 050 may enroll concurrently
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7

This is a college survival, college success course. It is recommended for all WCC students, particularly those entering college for the first time, returning after an absence, or interested in improving class performance. Topics include an introduction to the library (LRC), student support services, and good study habits (reading, writing, outlining, note taking, test-taking, and time management). Career and academic goal-setting also are addressed. For other reading courses, look under Reading (REA).

ACS 106: Speed Reading 2 Credits

Level I Prerequisites: COMPASS Reading = 82 or ASSET Reading = 43 or ACS 108 may enroll concurrently
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

Designed to improve reading rates, this course may double students' reading speeds (at a minimum) with no loss in comprehension. Students also learn a variety of techniques that enable them to vary their reading speed according to the material and their specific purpose. For other reading courses, look under Reading (REA).

ACS 107: College Study Skills & Speed Reading 3 Credits

Level I Prerequisites: Compass Reading = 70 or ASSET Reading 38 or ACS 070 with a "C" or better
Corequisites: ACS 000
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9

This course is designed to assist students with improving their study skills and with developing 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, skimming and scanning skills, speed reading, and test-taking skills. In addition to class time, students are required to spend one hour per week in the ACS Learning Lab. For other reading courses, look under Reading (REA).

ACS 108: Problem Analysis and Critical Thinking Skills 4 Credits

Level I Prerequisites: COMPASS Reading = 80 or ASSET Reading = 41 or ACS 107 with a "C" or better
Corequisites: ACS 000
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 10

This course is designed for advanced 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 diagrams, etc.), and 15th grade-level textbook selections are used for analysis. A co-required lab hour provides logical reconstruction exercises in the ACS Learning Lab. For other reading courses, look under Reading (REA).

ACS 109: Advanced Vocabulary 4 Credits

Level I Prerequisites: COMPASS Reading = 70 or ENG 063 with a "C" or better or ACS 107 or 108 may enroll concurrently
Corequisites: ACS 000
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is a course for advanced learners who wish to increase their knowledge and use of college-level vocabulary. Major areas of emphasis include the study of word derivations, context clues, dictionary skills, and vocabulary acquisition skills. Students must enroll for a co-required hour in the ACS Learning Lab. For other reading courses, look under Reading (REA).

Accounting ACC

ACC 100: Fundamentals of Accounting I 3 Credits

Level I Prerequisites: Compass Prealgebra = 37 or MTH 090 with a "C" or better.
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9

This course introduces students to the theory and practice of modern double-entry accounting systems and procedures. Emphasis is placed on journalizing and posting, adjusting and closing books and the preparation of financial statements for both service and merchandising businesses. The class is designed for the non-accounting major. This course is not designed for transfer to four-year colleges. This course was previously ACC 091.

ACC 101: Fundamentals of Accounting II 3 Credits

Level I Prerequisites: ACC 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7

A continuation of ACC 100, which includes notes, inventories, depreciation, accruals, and end of the year procedures with financial statements. The course addresses partnerships, corporations, statement analysis and interpretation, and is designed for non-accounting majors. This course is not designed for transfer to four-year colleges. This course was previously ACC 092.

ACC 111: Principles of Accounting I 3 Credits

Level I Prerequisites: COMPASS Algebra = 46 or (MTH 163, MTH 169, or MTH 181 with a "C" or better)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9

This is an introductory course in accounting principles and theory with emphasis on the accounting cycle, receivables and payables, depreciation, inventories, payroll, deferrals and accruals, systems and controls. It is required of all Accounting majors and Business Administration transfer students.

ACC 122: Principles of Accounting II 3 Credits

Level I Prerequisites: ACC 111
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7

A continuation of Principles of Accounting 111 covering partnerships, corporations, statement of cash flows, financial analysis and an introduction to managerial accounting. It is required of all Accounting majors and Business Administration transfer students. Students with experience equivalent to ACC 111 may contact the instructor for permission to waive the pre-requisite.

ACC 131: Computer Applications in Accounting 3 Credits

Level I Prerequisites: ACC 100 or ACC 111 (concurrent enrollment allowed)
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9 11

Accounting applications (spreadsheet, general ledger, accounts receivable, accounts payable, depreciation and payroll) are presented and mastered on the microcomputer in such a manner that no prior knowledge of microcomputers is required. This course does not teach computer programming, but it is intended to train students to become intelligent users of accounting software on the microcomputer.

ACC 174: ACC Co-op Education I 1-3 Credits

Level I Prerequisites: 2 courses in ACC discipline and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

ACC 213: Intermediate Accounting 3 Credits

Level I Prerequisites: ACC 122
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 8 9

This course is a continuation of the study of generally accepted accounting principles as they pertain to the valuation and classification of current assets, plant assets intangible assets, and current liabilities. Students with experience equivalent to ACC 122 may contact the instructor for permission to waive the pre-requisite.

ACC 220: Financial Planning, Budget, and Control 3 Credits

Level I Prerequisites: COMPASS Algebra = 46 or MTH 163 with a "C" or better
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 6

This course is intended for those students who are responsible for spending decisions and allocating company resources in pursuit of the organizational goals. The course explores the accounting and budgeting process and the use of reports generated from these processes to analyze, monitor, and control the monetary impact of business activity on the organization as a whole.

ACC 225: Managerial Cost Accounting 3 Credits

Level I Prerequisites: ACC 122
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9

Principles and procedures for measuring and controlling costs are discussed as well as cost-volume profit relationships, job order accounting, budgets, standard costs, relevant costs, and process accounting. This course is required of Accounting majors and is offered in the Winter Semester only. Students who have experience equivalent to ACC 122 may contact the instructor for permission to waive the pre-requisite.

ACC 274: ACC Co-op Education II 1-3 Credits

Level I Prerequisites: ACC 174
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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. Instructor consent is required to register for this course.

Anthropology ANT

ANT 201: Introduction to Cultural Anthropology 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 14 21 24

This course explores the way our species lives and has lived. It begins with the hunting and gathering level of cultural development and ends with the origin of the state. Contemporary peasants are also studied.

ANT 202: Introduction to Physical Anthropology 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 16 21

This course examines the emergence of the human species using materials from primate studies, archaeological findings and early humankind.

Architectonics ARC

ARC 099: Basic Architectural CAD 2 Credits

Level I Prerequisites: (COMPASS Reading=70 or ACS 070 concurrently) and (COMPASS Writing=81 or ENG 091 concurrently)
Level II Prerequisites: ARC 117
30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is a course in which the student learns the basic techniques to use CAD in the construction planning disciplines. This course is designed for the person who has never used CAD, intends to update skills to upgraded releases and eventually intends to use CAD as a tool to produce architectural documents. Featured is the AutoCAD software but additional CAD software as available may be used to complete the course assignments with instructor permission. Intended as a prerequisite for ARC drawing courses.

ARC 100: Specifications 1 Credit

Level II Prerequisites: ARC 117 or permission of instructor
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 8 18

An introduction is provided to building construction specifications, stressing the organization and preparation of specifications for construction contracts.

ARC 109: Site Layout 3 Credits

Level II Prerequisites: ARC 213 or permission of instructor
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 18

This lecture and field course deals with the principles of site layout of construction projects. Approved site plans, builders level transit, tape chain and preferred equipment are demonstrated and used.

ARC 111: Architectural Drawing I 6 Credits

Level I Prerequisites: ARC 117 (may enroll concurrently)
Level II Prerequisites: High School Drafting or ARC 099 or permission of instructor
45 lecture, 90 lab, 0 clinical, 0 other, 135 total contact hours
Fulfills Core Elements: 5 8 9 18 19

An introduction is provided to light frame construction and requirements including the preparation of working drawings for the construction of structures classified as Light Frame Structures.

ARC 117: Construction Materials 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 9

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 120: Mechanical & Electrical Systems for Buildings 3 Credits

Level II Prerequisites: ARC 111
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 7 9 15 18 19

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 6 Credits

Level I Prerequisites: (ARC 099 may enroll concurrently) and ARC 111
45 lecture, 90 lab, 0 clinical, 0 other, 135 total contact hours
Fulfills Core Elements: 5 7 20

The preparation of architectural presentation drawings from diagrammatic sketches, pictures, surveys and conference notes is included in this course. The student is taught to develop preliminary studies, presentation drawings and working drawings for an architectural project utilizing masonry construction. Students who have experience equivalent to ARC 099 may contact the instructor for permission to waive the pre-requisites.

ARC 150: Presentation Drawings and Models 4 Credits

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 18

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 174: ARC Co-op Education I 1-3 Credits

Level I Prerequisites: ARC 111 and ARC 117 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 210: Structure in Architecture 2 Credits

Level I Prerequisites: ARC 122 and (PHY 105 or PHY 111)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 5 7 19

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 6 Credits

Level I Prerequisites: ARC 122 or submit portfolio for review
Level II Prerequisites: ARC 210 may enroll concurrently or test out of course
30 lecture, 105 lab, 0 clinical, 0 other, 135 total contact hours
Fulfills Core Elements: 7 8

Major problems in architectural detailing are studied through the preparation of CAD drawings and details for a moderate sized building such as a college chapel with classrooms. The option to use hand drafting methods for drafting tasks is provided with instructor consent. Choice of software featured but not limited to AutoCAD Architectural Desktop, ArchiCad, DataCAD, and Micro Station Triforma.

ARC 218: 3D Presentation/CAD 3 Credits

Level I Prerequisites: ARC 099 or high school CAD or work experience
Level II Prerequisites: ARC 122
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

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 achitectural drawings are covered. Visual Reality/ Renderize Live, 3D Studio, or equivalent software is used.

ARC 219: Architectural Engineering and Construction CAD 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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 6 Credits

Level I Prerequisites: ARC 099 and (ARC 109 may enroll concurrently)
30 lecture, 105 lab, 0 clinical, 0 other, 135 total contact hours
Fulfills Core Elements: 1 5 7 8 9 11 12 18 19

Major problems in architectural drawing are studied through the preparation of programs and drawings for a large size building project such as a shopping center or multi-story structure. Choice of software features AutoCAD AEC, DataCAD, and Micro Station PC.

ARC 227: Estimating Construction Costs 3 Credits

Level I Prerequisites: ARC 213 may enroll concurrently
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9 18

This course provides an introduction to the field of estimating construction costs for building construction projects and includes advanced topics such as computer estimating software selection and researching methods and techniques employed by construction estimators. Analysis of quantitative survey methods of estimating materials, labor, equipment, overhead and profit are included and discussed.

ARC 274: ARC Co-op Education II 1-3 Credits

Level I Prerequisites: ARC 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

Art ART

ART 101: Drawing and Painting 3 Credits

Level I Prerequisites: No Basic Skills Prereqs.
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13

This class is a user-friendly introduction to art for students with no previous studio experience. Instruction is provided in the fundamentals of color and composition. This course is not intended to take the place of ART 111 or ART 114.

ART 102: Color 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 13

Color is not what it seems to be. Through a series of experiments using colored papers, students will investigate the elusive behavior of color. Students will develop sensitivity to color so that it can be used effectively in every area.

ART 111: Basic Drawing I 4 Credits

Level I Prerequisites: No Basic Skills Prereqs.
15 lecture, 75 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9 13

This course is an introduction to the central problems and issues of freehand drawing. Accurate representational drawing is emphasized through a series of projects concentrating on simple objects. The course is recommended for students who plan to continue in art at WCC or to transfer to another college or university.

ART 112: Basic Design I 4 Credits

Level I Prerequisites: No Basic Skills Prereqs.
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

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 at WCC or to transfer into other art programs.

ART 114: Painting I 4 Credits

Level I Prerequisites: No Basic Skills Prereqs.
0 lecture, 90 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

An analytical approach to the fundamental problems and issues of painting, with emphasis on composition and the articulation of volume in space.

ART 120: Portrait Painting and Life Drawing 4 Credits
Level I Prerequisites: No Basic Skills Prereqs.
0 lecture, 90 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7

Working from live models, students study anatomy, techniques in drawing, pastel painting and visual expression, multi-media, philosophy and envisioning. It is preferred, although not required, that students have some art background. Interest is critical.

ART 122: Basic Drawing II 4 Credits
Level I Prerequisites: ART 111, No Basic Skills prereqs
0 lecture, 90 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

Complex problems of drawing are explored with greater emphasis placed on individual solutions. Several new media are introduced.

ART 125: Painting II 4 Credits
Level I Prerequisites: ART 114, No Basic Skills prereqs
90 lecture, 0 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

Further exploration of the fundamental problems and issues of painting, with greater emphasis on individual development.

ART 130: Art Appreciation 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 10 13 14

An inquiry into the ways in which art reflects, extends and shapes experience. The course investigates art of the past and present, seeing in it a statement of our human condition. This is an academic course involving textbook, class discussions, short papers, and projects.

ART 140: Life Drawing 4 Credits
Level I Prerequisites: No Basic Skills Prereqs.
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 13

This class will provide instruction in basic approaches to drawing the nude. We will begin with quick gesture drawing, and move gradually toward longer poses. Emphasis is on analyzing the figure in terms of its simple, solid, underlying forms.

ART 143: Art and Culture of Afro-America 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14

This course prepares students to participate in and appreciate the arts (visual, dance, music, film, poetry, literature) of African and Afro-American people. Perspectives and definitions that differ from Western values and standards are presented. The anthropological approach is used to recognize the importance of history in understanding the present. Multi-media methods, skill development and aesthetic competence are emphasized.

ART 150: Monuments from Around the World 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 3 7 10 13 14 24

In this course various monuments around the world will be explored and analyzed for their significance as part of a particular civilization, religion, or culture. Specific rituals, traditions, myths and beliefs will be discussed as well as scientific, philosophical, and art historical implications for our contemporary world. A field trip will be included. Students will express themselves orally and in writing about different cultures and ideas. Emphasis is put on tolerance and the appreciation of difference and equality.

Astronomy AST

AST 100: Introductory Astronomy 1 Credit
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 15 17

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
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 10 15 17

This is a survey course of the solar system and the universe designed for both transfer and vocational students. No previous mathematics or science is required. Topics include: the sun, moon and planets; Ptolemaic and Copernican systems; seasonal changes in the sky and modern ideas growing from early beliefs in astrology.

Auto Body Repair ABR

ABR 111: Auto Body I: Repair Fundamentals 4 Credits
15 lecture, 105 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18 19

This course involves repairing damaged body panels, studying the working properties of automobile sheet metal, analyzing typical damage conditions, and understanding accepted repair procedures. Included is an introduction to basic welding skills used in auto body repair.

ABR 112: Auto Body II: Refinishing Fundamentals 4 Credits
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18

Methods and procedures used with automobile refinishing materials are covered in this course. Also included is information on using conventional finishes such as acrylic lacquers and enamels as well as modern basecoat/clearcoat, urethane, and tri-coat finishes.

ABR 113: Applied Body Welding & Estimation 4 Credits
Level I Prerequisites: ABR 111
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18 19

This course introduces the basics of welding skills used in auto body repair. It also reviews the use of flat-rate manuals to determine parts and labor costs in estimating damaged automobiles with an emphasis on procedures used to establish complete and accurate prices in the preparation of estimates.

ABR 123: Auto Body Repair Applications 4 Credits
Level I Prerequisites: ABR 111
0 lecture, 120 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18 19

This is a continuation of ABR 111. Lab work includes actual repairs to automobiles to develop basic bumping skills. Emphasis is placed on quality and excellent work habits. Included is the proper use of hydraulic equipment during the repair of collision damage.

ABR 124: Auto Refinishing Applications 4 Credits

Level I Prerequisites: ABR 112
15 lecture, 105 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18

This is a continuation of ABR 112. Lab assignments on actual automobiles provide an opportunity to improve skills in matching high metallic colors using modern spot repair and color blending techniques, as well as overall refinishing. Emphasis is placed on solving paint problems and the proper detailing necessary to achieve repairs that meet trade standards.

ABR 126: Fundamentals of Frame and Body Alignment 2 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 9 18

This course provides an opportunity to work with common types of body frame damage and the equipment used to make repairs. Laboratory assignments include use of frame gauges and portable body-frame straightening equipment to make a diagnosis and set up corrective hook-ups.

ABR 130: Custom Painting 4 Credits

Level II Prerequisites: ABR 112
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9

This course provides students with an understanding of the art of custom painting. Students work with the tools and techniques used in the field. The course covers the use of special effect colors such as pearls and candies. Students use air brushes, pinstripe brushes, and lettering brushes.Murals, graphics, and etching are also covered. Lab assignments on vehicles will provide an opportunity to improve skills.

ABR 134: Auto Graphics 2 Credits

Level I Prerequisites: ABR 112 and ABR 130
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 8 9

This class is a continuation of methods and procedures used in automotive custom painting. Lab assignments on actual cars provide an opportunity to develop skills in graphic application, color design coordination, special effect colors, and layout transfer.

ABR 174: ABR Co-op Education I 1-3 Credits

Level I Prerequisites: ABR 112 and ABR 113 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

ABR 219: Advanced Auto Body I: Major Repair 4 Credits

Level I Prerequisites: ABR 123 and ABR 124
15 lecture, 105 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 9 18 19

This course covers the use of hydraulic jacking equipment to repair damaged sheet metal and body shells. Advanced welding techniques and fine tuning MIG/TIG welders for use on aluminum panels are included. Lab work includes set-up of typical push or pull operations and straightening procedures used on collision damage.

ABR 224: Advanced Auto Body II: Auto Refinishing Fundamentals 4 Credits

Level I Prerequisites: ABR 123 and ABR 124
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course provides students with the skills to use paint repair applications on collision damaged vehicles. Included is theory of paint blending, and planning and set-up of single and multi-stage blend repairs. Emphasis is on basecoat/clearcoat finishes and tri-coat finishes. Students learn the characteristics of color and how to apply knowledge of color movement and tint to obtain blendable color matches. Lab assignments include set-up of paint mixing stations and plotting solid and metallic colors.

ABR 226: Advanced Auto Body III: Frame/Unibody Alignment 4 Credits

Level I Prerequisites: ABR 224
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7 8 9 18

This course covers the repair of structurally damaged conventional framed, unitized automobiles and light trucks. Included is a detailed study of body and frame construction, diagnostic procedures, repair techniques and structural parts replacement using conventional and computerized laser measuring equipment.

ABR 229: Advanced Auto Body IV: Major Repair Applications 4 Credits

Level I Prerequisites: ABR 219
40 lecture, 80 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course provides a detailed study of the automobile body that includes the use of hydraulic jacks, suspension and alignment tools, auto-electric equipment, and heating and air conditioning tools. Electrical theory, alignment and suspension theory, and application knowledge of air conditioning theory are covered. Lab assignments include full or partial panel replacement including the replacement of structural stationary glass. Work is done on collision damaged vehicles provided by the school or students' own vehicles.

ABR 274: ABR Co-op Education II 1-3 Credits

Level I Prerequisites: ABR 174 and Consent required
0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours
Fulfills Core Elements:None

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.

Auto Restoration & Fabrication ARF

ARF 112: Classic Engines 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course is for the automobile restoration enthusiast and prospective professional who wants to learn how to rebuild a vintage engine. The focus is on engines pre-dating emission control and electronic engine management technology. Engine tear-down, cleaning, inspection, measuring, sourcing, specifying, and obtaining quality machining services, inspection of replacement parts, and reassembly is emphasized. A variety of engine designs and materials are compared and contrasted. This course was previously ASV 112.

ARF 115: Classic Auto Restoration I 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 18

This course covers vehicle construction, as well as working properties of automotive sheet metal. Emphasis is on removal, replacement, and alignment procedures for bolted on trim, hardware, and body panels (exterior and interior). Types of welded joints used to repair or replace damaged panels are included with an emphasis on lead filling and metal finishing without the use of filler material. Reconditioning of metal parts through sand blasting and media blasting techniques will be studied. This course was previously ABR 115.

ARF 117: Classic Auto Restoration II 4 Credits

Level I Prerequisites: ARF 115
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This is a continuation of ARF 115. Lab work on vehicles being completely restored takes place. Complete exploration of the restoration process is made on individual as well as group and class projects. The use of manuals, literature, and the internet to locate replacement parts and panels as well as cost estimation is taught. Emphasis is on quality and workmanship. This course was previously ABR 117.

ARF 215: Classic Auto Restoration III 4 Credits

Level I Prerequisites: ARF 115 and ARF 117
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course focuses on restoration of interior and exterior trim and hardware including headliners, dash panels, seats, carpet, glass, hood ornaments, body side moldings, and bumpers. Students gain the skills to assemble a classic car properly with emphasis on details and quality. This course was previously ABR 215.

ARF 217: Classic Auto Restoration IV 4 Credits

Level I Prerequisites: ARF 215
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course focuses on advanced skills in automotive welding techniques. Students learn advanced skills in shaping metal to form the parts to replace original damaged parts on classic cars. Advanced projects are completed on the student's own vehicle or one provided by the school. This course was previously ABR 217.

Automotive Service ASV

ASV 120: Engine Performance Recertification 1 Credit

Level II Prerequisites: Michigan Certification in Engine Performance
16 lecture, 0 lab, 0 clinical, 0 other, 16 total contact hours
Fulfills Core Elements:None

This course is for mechanics who want to maintain their current Michigan Certification in the engine performance area. Recertification is granted if the class is passed. Students must have Michigan Certification in Engine Performance to enroll in this course.

ASV 141: Automotive Mechanics I 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 18

This is one of four courses required for the Automotive Technology Certificate. Students perform preventative maintenance procedures, basic engine systems repairs, basic electrical system testing, and chassis component inspections. Instruction stresses hands-on work and preparation for the State of Michigan Mechanics Exams.

ASV 142: Automotive Mechanics II 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This is one of four courses required for the Automotive Technology Certificate. This course teaches students suspension system service, drive line service, electrical troubleshooting techniques, and basic fuel systems testing. Instruction stresses live work and preparation for State of Michigan Mechanics Exams.

ASV 143: Automotive Mechanics III 4 Credits

Level I Prerequisites: ASV 141
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This is one of four courses required for the Automotive Technology Certificate. In this course, students learn to perform brake system service and basic emission testing. Students who have equivalent work experience may contact the instructor for permission to waive the prerequisites.

ASV 144: Automotive Mechanics IV 4 Credits

Level I Prerequisites: ASV 141
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This is one of four courses required for the Automotive Technology Certificate. This course teaches the student the diagnosis and repair of drive train systems including manual transmissions, axles and differentials, 4-wheel/all-wheel drive, and automatic transmissions. Students who have equivalent work experience may contact the instructor for permission to waive the prerequisites.

ASV 156: Electrical Systems Recertification 1 Credit

Level II Prerequisites: Michigan Certification in Electrical Systems
16 lecture, 0 lab, 0 clinical, 0 other, 16 total contact hours
Fulfills Core Elements:None

This course is for automotive mechanics who wish to renew their Michigan State certification in electrical systems. Recertification is granted by the state for passing the course. Students must already be certified in this area to register for the course. This course is graded as pass/no pass.

ASV 174: ASV Co-op Education I 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 177: Recertification in Brakes 1 Credit

15 lecture, 15 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course prepares students for the State of Michigan mechanics recertification exam in brakes. This course is graded as pass/no pass.

ASV 241: Engine Repair 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

Students develop skills and knowledge for understanding and repairing automobile engines. Using text, tools, manual, and automobiles in a laboratory setting, students perform service procedures on engines with a concentration on the upper half. The course provides the knowledge to help prepare for the State of Michigan and ASE (Automotive Service Excellence) Engine Repair Exams.

ASV 242: Automatic Transmissions 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

An application of hydraulic fundamentals to automatic transmission operation is provided in this course. Diagnosis of transmission problems is featured with emphasis on understanding basic functions. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 243: Manual Drive Trains and Axles 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is a course in the operating principles and repair procedures of manual driveline systems. Units of study include a wide range of concepts dealing with such areas as final drive systems, clutches, transmissions, and transaxles. Both front and rear-wheel drive systems as well as four-wheel drive units are studied. Diagnosis and repair procedures on actual vehicles is stressed. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 244: Suspension and Steering 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

Students learn the theory of wheel alignment and develop skills needed to diagnose and align all foreign and domestic cars. Using state-of-the-art balancers, students understand and perform wheel balance equal to the level accepted by the industry. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 245: Brakes 2 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

In this course students develop skills in diagnosing and repairing brake systems on a variety of working vehicles. Concentration is on factory techniques and accepted field practice. Instruction includes machining of drums and rotors, hydraulic system service, mechanical system inspection and service, and diagnosis and repair of anti-lock brake systems. Students are provided with the knowledge to help them prepare for the state of Michigan and the National Brakes examination. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 246: Electrical Circuits 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class involves the theory and application of automotive electronic circuits and accessories. It includes the construction and servicing of lighting systems, gauges, warning devices, windshield wipers, and solid state devices. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 247: Heating and Air Conditioning 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

Air conditioning now appears on 80% of all new cars produced. This unique accessory is explained in depth including theory of refrigeration, servicing procedures, and diagnosis techniques. Compressor service and distribution systems are studied. Laboratory experience is given in testing and servicing a variety of systems and problems. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 248: Engine Performance 2 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is designed to provide the student with skills in troubleshooting and repairing driveability problems with automobile computerized engine management systems (fuel, ignition, and emissions). Actual vehicles are used to demonstrate the use of computerized and digital diagnostic equipment. This course provides students with the knowledge to help prepare for the State of Michigan and ASE (Automotive Service Excellence) Engine Performance examinations. This is one of eight courses required for the Automotive Mechanics Advanced Certificate (CVAMA).

ASV 274: ASV Co-op Education II 1-3 Credits

Level I Prerequisites: ASV 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

Biology BIO

BIO 101: Concepts Of Biology 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 10 15 16 17

Basic principles and concepts of biology are surveyed in lecture and laboratory with emphasis on biological processes as well as practical applications. If followed by BIO 103, this course provides a comprehensive year sequence for biology majors. Taken alone, it serves as a good introduction to biology for non-science students.

BIO 102: Human Biology 4 Credits

45 lecture, 45 lab, 0 clinical, 45 other, 135 total contact hours
Fulfills Core Elements: 7 8 10 15 16 17

This course covers the basic structure and function of the human body, as well as human interactions with the larger biological community, including issues of health and disease, food use and labeling, and environmental pollution. Comparisons to other organisms highlight the ways in which we adapt to our world. Includes a laboratory portion involving the use of models, dissection, demonstrations, and actual medical equipment.

BIO 103: General Biology II 4 Credits

Level I Prerequisites: BIO 101 and (CEM 105 or CEM 111) with min. grade of C-, or consent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 6 7 8 10 15 16 17 18 19

The emphasis in this course is on analyzing the processes and mechanisms involved in biological systems including the cell, genetics, organisms and ecology/evolution. Topics are covered from an experimental point of view. This course, with BIO 101, provides a comprehensive survey of biological concepts and shows the interrelationship of topics covered from the molecular to the population level. This course is required for the Biology/Pre-medicine Program. Students who have taken one year of HS chemistry with a grade of C or better may have the Chemistry pre-requisite waived.

BIO 107: Introduction to Field Biology 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is an introduction to the biology of the outdoors for the beginning student. Subjects such as trees and shrubs, wild flowers, insects, various animals, pond and stream life, and different Michigan terrestrial and aquatic communities will be covered. An outdoor journal and other similar activities will be stressed.

BIO 111: Anatomy and Physiology 5 Credits

Level I Prerequisites: (BIO 101 or BIO 102 or High School Biology) min grade "C-" and (CEM 105 or High School Chemistry) min grade "C-"
60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours
Fulfills Core Elements: 7 8 10 11 12 15 16 17 18 19 20

This course provides students with an intensive, in-depth introduction to the structure and function of all human body systems, with examples of both normal and disease conditions relevant to health professionals. The emphasis on basic physiological principles also provides students with a good base for more advanced courses. Laboratory provides dissections and experiments.

BIO 147: Hospital Microbiology 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 10 16

This class provides a survey of the morphology, physiology and immunology of pathogenic organisms with emphasis on infection, aseptic, and sterilizing procedures.

BIO 174: Biology Co-op I 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

Co-op courses provide students with worksite skills and experiences in an approved, compensated position related to their chosen field of study. Together, with an instructor, an employer, and the Workplace Learning Center, the student determines work assignments and learning objectives to connect learning with career-related work experience. Co-op experiences are coordinated by the Workplace Learning Center in conjunction with WCC faculty and cooperating employers. Registration for cooperative education requires attendance at a Co-op Orientation and the instructor's prior approval.

BIO 200: Current Topics in Biology 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 15 16 17 18

In this course, students learn the basic aspects of scientific investigation, its strengths, and its limitations. Students apply their knowledge to critical assessment of current topics in biology, including such areas as medicine, ecology, genetics, industry, agriculture, and space biology. The course focuses on topics preselected by the instructor but also includes topics selected by students in the class.

BIO 208: Genetics 4 Credits

Level I Prerequisites: (BIO 101 or BIO 102 with a C-) and (CEM 105 or CEM 111 with C-)
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 8 9 10 15

Introduction to the basic principles of genetics and their application to viruses, bacteria, plants and animals, including humans. Classical and molecular genetics are covered, with emphasis on experimental and statistical evidence from which genetic mechanisms are deduced. Laboratory experiments demonstrate genetic principles. Students who have taken one year of HS Chemistry with a grade of C or better may have the pre-requisite waived.

BIO 215: Cell and Molecular Biology 4 Credits

Level I Prerequisites: CEM 111 and BIO 101, minimum grade of C-
Level II Prerequisites: consent of instructor
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9 10

Introduction to the chemistry and physiology of living cells, including cell metabolism, growth, and division, membrane permeability and excitability, movement and contractile elements, gene expression and protein synthesis. Properties common to all living things will be emphasized, as well as the importance of those properties in the human organism. Students will get hands on experience with techniques which demonstrate how cells are constructed and function.

BIO 220: Human Genetics — 3 Credits

Level I Prerequisites: BIO 101 with a min. grade of C- and Consent required
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 8 9 10 15

This course covers basic principles of heredity and their relationship to humans. Included are the genetic basis of sexual dimorphism, classical pedigree studies, medical genetics, modern molecular genetics, genetic engineering, and human population dynamics.

BIO 227: Animal Physiology — 4 Credits

Level I Prerequisites: BIO 103 with min. grade of C- or instructor consent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 15 17

Lecture, field, and laboratory investigation provide an intensive study of the classification, evolutionary relationship, structure, and function of the major animal groups. Included are the sponges, jellyfish, worms, mollusks, insects, arthropods, starfish and other echinoderms, fish, amphibians, reptiles, birds and mammals. Students who have experience equivalent to BIO 103 may contact the instructor for permission to waive the pre-requisite. The title of this course was changed from Zoology.

BIO 228: Plant Physiology — 4 Credits

Level I Prerequisites: BIO 103 with min grade of C-
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 10 15 17

In this class, field and laboratory investigations provide detailed study of plant structure and function. It is for students with a general interest in plants or to provide a basis for further work in botany or other programs. Students with experience equivalent to BIO 103 may contact the instructor for permission to waive the pre-requisite. The title of this course was changed from Botany.

BIO 237: Microbiology — 4 Credits

Level I Prerequisites: BIO 101, minimum grade of C- or instructor consent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 6 7 8 9 10 11 12 15 16 17 18

Micro-organisms and their activities are studied in lecture and laboratory. Students who have experience equivalent to BIO 101 may contact the instructor for permission to waive the pre-requisite.

BIO 258: Field Study of Trees and Shrubs — 1 Credit

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 17

Trees, shrubs, and vines are studied and identified in this course. The natural history of these plants is also introduced, including reproduction strategies, environmental interactions, and relevance to humans.

BIO 259: Field Study of Common Plants — 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 17

Non-woody higher plants are studied with emphasis on identification.

BIO 267: Winter Field Study — 1 Credit

0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 17

This course is a study of life out of doors in winter. Topics such as plant and animal identification, observation, adaptations, and interrelationships are discussed. This class is especially for students with no previous background in biology and/or students who enjoy being outdoors and are curious about nature.

Business Management — BMG

BMG 100: Investments — 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7

This course is designed to acquaint students with the basics of financial investments. Topics include: stocks, bonds, mutual funds, investment banking, financial statement analysis, the stock market, and other phases of financial investments and services.

BMG 106: Legal Basics in Business — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 10 22

This course is designed for those students wishing to learn about legal issues that arise in business. In one course, students learn to apply fundamental legal principles and rules in order to "redflag" situations of potential legal liability and make suggestions for reducing legal risks, particularly as they apply to legal issues concerning the student's chosen trade or profession. Students learn to use legal resources readily available in the community and explore the nature of the relationship between business ethics and law. Students are expected to make use of computer technologies to learn in both an individual and collaborative environment. This course is appropriate for those students pursuing a trade or occupational career as well as those seeking to transfer.

BMG 109: Introduction to Small Business and Entrepreneurship — 3 Credits

Level II Prerequisites: (CIS 099 or INP 100 with a "P")
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7

Students examine the fundamental operations of a small business to learn how these operations interface with external markets to create profits. Students are expected to work independently as well as in groups to apply concepts to analyze case situations. This course would be of interest to persons who desire to be successfully self-employed as well as those seeking to work effectively in a small business environment. It is recommended that students already possess basic skills in computer literacy that would include the ability to use a word processing program as well as to use the Internet to send and receive e-mail and locate information on the Web.

BMG 110: Credit Management — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 9

This is an introductory course in consumer and commercial credit practices, techniques, and regulations for most manufacturing and service industries. Students are shown how to develop credit policies and analyze pertinent credit data, collections, controls, and effects of bankruptcy.

BMG 111: Business Law I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9 10 11 22 23

This course involves text and case study of the general laws applicable to business, covering the nature of law, courts and court procedures, contracts, real and personal property, wills, trusts, and negotiable instruments. This course is the first of two courses in business law and is appropriate for students intending to transfer. This course, when taken with BMG 122, Business Law II, provides an in-depth study of legal issues affecting business. Students are expected to make use of computer technologies to learn in both individual and collaborative environments using the Internet.

BMG 122: Business Law II 3 Credits

Level I Prerequisites: BMG 111
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9 10 11 22 23

This course involves text and case studies of agency relationships (including employment), formation and operation of partnerships, formation and operation of corporations, security laws, sales agreements, consumer rights, secured transactions, bankruptcy, computer law and international law. This course, when taken with BMG 111, Business Law I, provides an in-depth study of legal issues affecting business. Students are expected to make use of computer technologies to learn in both an individual and collaborative environment using the Internet.

BMG 130: Investment Strategies 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 8 9 10

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 24

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 10 22

This course acquaints students with factors affecting the labor-management relationships, develops insights into the growth, objectives and methods of organized labor and the significant managerial problems involved in dealing with labor. Analysis is done of the legal and institutional framework for collective bargaining; the nature, content and problem areas of the collective bargaining process and other labor relations problems.

BMG 155: Business on the Internet 3 Credits

Level I Prerequisites: INP 100 or INP 150 or INP 220 or CIS 110 or score of Pass on INP Test
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 11 20

In this course, students examine how e-commerce is being conducted and managed, its major opportunities, limitations, issues, risks, and the special role that the customer plays in the development of e-commerce business models. The course includes hands-on experience with online technologies similar to those used in e-commerce. This course is of interest to those seeking entry-level positions in the field of web development as well as managers and professionals in any functional area of business. Only students who can use the Internet (e-mail and web browsing including experience using interactive technologies such as forms) should take this course. It is highly recommended that students take INP 150, INP 220, or have equivalent experience prior to registering for this course.

BMG 160: Principles of Sales 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9

Basic selling techniques are taught and practiced through textbook learning, video demonstrations and practical role-play activities. Emphasis is placed on "how to sell" in the business work environment. Skills learned are appropriate for a variety of sales positions and can be utilized in any industry. Students learn to be effective and sell by building telephone prospecting skills, preparing customer presentation calls, handling customer objectives, and closing a sale. Business etiquette and understanding the basics in commercial contracts are also addressed.

BMG 174: BMG Co-op Education I 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

BMG 200: Human Relations in Business 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 21

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 207: Business Communication 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 9 11 12

Oral, written, and non-verbal skills are developed for effective internal and external communications in business. Emphasis is placed on organization, style, clarity, accuracy, and conciseness as students p r e p a re reports, routine correspondence, resumes, and formal business presentations.

BMG 208: Principles of Management 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9

This course is an introduction to the concepts and theories of management. Emphasis is on the functions of management: planning, organizing, staffing, directing, and controlling, (including motivation, decision-making and communication).

BMG 209: Business Planning for Entrepreneurs 3 Credits

Level II Prerequisites: (CIS 099 or INP 100) with a "P" grade and BMG 292 min grade "C-" concurrent enrollment allowed
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9

Students learn to plan for successful business operations while examining some of the more common strategies for dealing with problems encountered in small business operations. Working as part of a team, students perform research and business planning for real companies referred to WCC by community providers of small business services. Students develop a business plan that when combined with the marketing plan prepared in BMG 292 (Market Planning for Entrepreneurs), will be reviewed by an outside panel of community experts. This course is suitable for the student who wants to become self-employed or is seeking to enhance their employment opportunities in a small business operation. In addition to computer literacy skills required of BMG 109 (Introduction to Small Business Operations), it is recommended that students be able to use a spreadsheet program.

BMG 210: Money, Banking and Financial Institutions 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7

This is a course in the functions of finance. The course offers a definition of money including its characteristics and component parts. It identifies how the money supply expands and contracts based upon the inter-workings of the financial system. Also discussed, is the effect of national and international financial practices on the consumer and business. Other topics include a comparison of the different types and purposes of various financial institutions, the Federal Reserve System, National Fiscal Policy, and how various monetary controls influence the supply of money, credit availability, forecasting interest rates, how to calculate investment yields and security prices, and stock market reactions based upon inflation and changes in the money supply. Banking and lending practices for business and consumers are emphasized and correlated to credit policies and examples of documentation forms. This course is recommended for business students.

BMG 215: Planning an E-Commerce Site for Business 3 Credits

Level I Prerequisites: BMG 155 and INP 210
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

In this course students create an e-commerce business web site using readily available commercial software packages in order to market a small item to graduating students of WCC. In the process, students prepare a competitive analysis of 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 pre-requisites.

BMG 220: Principles of Finance 3 Credits

Level I Prerequisites: ACC 101 or ACC 122
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7

This course surveys the basic concepts of finance that provide the foundation for successful real world financial management practices. Emphasis is on financial tools required to operate a business. Included is the role of the economy and its effect on interest rates, commercial banking practices, commercial credit, cash management, lending practices, financial statement analysis, time value of money, forecasting, budgeting, capital budgeting, sources of financing, lease vs. purchase, leverage, inventory controls, valuation of rates of return, investment banking, international finance, and bankruptcy. The course is intended to prepare students for advance studies in finance and practical application of financial principles.

BMG 230: Introduction to Supervision 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9

This supervision course introduces the roles and functions of the first-line manager and develops practical, operational management skills in the functional areas of planning, organizing, leading, and controlling.

BMG 240: Human Resources Management 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 9 10

This class covers basic human resources activities that must be managed in any organization. It covers employment techniques, wages and hours, job evaluation, training, employee performance reviews, collective bargaining, employment counseling and collateral benefits such as pensions and fringe benefits. It is recommended that students have a knowledge of the basic principles of management obtained through previous coursework or work experience.

BMG 250: Principles of Marketing 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9

This course is a study of our market-directed system with emphasis on the managerial level. Primary emphasis is on marketing strategy, planning in relationship to product, place, promotion and price. The concepts of economic fundamentals, marketing arithmetic, service and international marketing are incorporated.

BMG 265: Business Statistics 3 Credits

Level I Prerequisites: CIS 110 with a "C" and (MTH 181 with a "C" or better or COMPASS College Algebra = 46)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course introduces the concepts of statistics and their applications to business decisions. Topics include elements of probability, random samples, descriptive statistics, sampling distributions, point and interval estimation, hypothesis testing, and regression and correlation analysis. Emphasis is on collection and analysis of data needed to evaluate reported results of statistical studies and making sound business decisions.

BMG 272: Problem Solving 2 Credits
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 9

This course examines problem solving techniques and methods used in today's work place. Students gain experience in using both critical and creative thinking approaches to problem solving in both individual and team settings.

BMG 273: Managing Operations 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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: BMG 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

BMG 279: Performance Management 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 21

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
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 24

This is the final course in the Management Supervision program. Topics include financial analysis, forecasting, aggregate planning, and the process of project planning and implementation. Using project management software, students are able to plan and track projects that meet an organization's operational, human resource, and costs needs. In addition, students learn to communicate and collaborate with team members on projects across an organization.

BMG 292: Market Planning for Entrepreneurs 3 Credits
Level II Prerequisites: (CIS 099 or INP 100) with a "P" grade and BMG 109 min grade of "C-", concurrent enrollment allowed
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 9 11

Students use readily available community resources to develop a plan for marketing a product or service and managing customer relationships. Students learn to perform market research to identify a target market for a business and develop strategies for reaching and retaining that market at a competitive advantage. Product, pricing, promotion and distribution strategies that are commonly used in small businesses are examined. Students learn to manage customer relationships, including use of customer data files to support the market planning process. The marketing plan, when combined with the business plan prepared in BMG 209 (Business Planning for Entrepreneurs), will be reviewed by an outside panel of community experts. This course is suitable for students who want to become self-employed or are seeking to manage small business operations. In addition to computer literacy skills required of BMG 109 (introduction to Small Business Operations), it is recommended that students be able to use a spreadsheet program.

Business Office Systems BOS

BOS 101A: Introduction to Keyboarding 1 Credit
Level I Prerequisites: COMPASS testing not required.
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course is the first in a series of three keyboarding courses. Students learn to keyboard (type) by touch and develop speed, accuracy, and proper techniques on the alphabetic keys. This course is only offered in a self-paced lab with open entry/open exit registration. Students may register at any time during the semester, but coursework must be completed by the end of the semester.

BOS 101B: Intermediate Keyboarding 1 Credit
Level I Prerequisites: COMPASS testing not required.
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

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 at least 20 words per minute. Students increase speed and accuracy and learn number and symbol keys. Students are evaluated and may be placed in 101A based upon the results of a keyboarding skills assessment test. This course is only offered in a self-paced lab with open entry/open exit registration. Students may register at any time during the semester, but coursework must be completed by the end of the semester.

BOS 101C: Advanced Keyboarding 1 Credit
Level I Prerequisites: COMPASS testing not required.
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

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 at least 30 words per minute. Students increase their speed and accuracy and learn number and symbol keys. Students are evaluated and may be placed in 101A or 101B depending on the results of a keyboarding skills assessment test. This course is only offered in a self-paced lab with open entry/open exit registration. Students may register at any time during the semester, but coursework must be completed by the end of the semester.

BOS 102: Document Formatting 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7

Students who enroll in this course should be able to keyboard accurately at a minimum speed of 30 words per minute. Students learn to prepare and format complex business documents including long reports, business letters with special features and advanced tables. Specialized documents such as itineraries, executive summaries, and minutes of meetings are also covered. Correct keyboarding techniques, accuracy, and speed are improved.

BOS 107: Clerical Methods and Procedures 4 Credits

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9

In this course, students perform a variety of general office duties including the processing of office mail, the handling of telephone and faxing service, and filing rules and procedures. Proofreading and editing skills are covered. In addition, students learn job-hunting procedures and prepare for employment in the clerical field through an understanding of the changing business world.

BOS 130: Office Financial Applications 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7

The ten-key computer pad as well as Excel and electronic business calculators are used to solve a variety of business problems which include payroll, with serious attention given to efficient operation, verifying techniques, and programming. Emphasis on the use of business mathematics makes this course useful for both business and personal applications.

BOS 157: Word Processing Applications I 2 Credits

Level I Prerequisites: (COMPASS Reading = 70 or ACS 070 concurr. enrollment allowed) and (COMPASS Writing = 81 or ENG 091concurr. enrollment allowed)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9 11 20

This course teaches word processing and document preparation concepts using Microsoft Word 2000 in a Windows operating system. Skills include formatting and editing documents, using grammar and thesaurus functions, preparing headers and footers, preparing footnotes and endnotes, using file management procedures, preparing labels and envelopes, and merging letters. Applying word processing concepts and functions to business environments is stressed. This course is also offered in a self-paced format. When combined with BOS 257, all MOUS core and expert competencies are covered. Students should be familiar with Windows and have keyboarding skills at 25 wpm.

BOS 174: BOS Co-op Education I 1-3 Credits

Level I Prerequisites: 8 credits in BOS discipline with a 2.0 GPA and Consent Required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11 12

This course teaches database concepts and applications using Microsoft Access 2000 in a Windows operating system. 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. This course is also offered in a self-paced format. All MOUS core competencies are covered. Students should be familiar with Windows and have keyboarding skills at 25 wpm.

BOS 183: Spreadsheet Software Applications 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 5 7 11

This course teaches spreadsheet concepts and applications using Microsoft Excel 2000 in a Windows operating system. Skills and concepts include creating, formatting and editing a worksheet; entering formulas and using Excel functions; preparing charts; creating templates, workbooks, and Web pages; creating and using macros; sorting and filtering worksheet databases; and creating data maps and pivot tables. Applying spreadsheet concepts and functions to business environments is stressed. This course is also offered in a self-paced format. All MOUS core competencies are covered. Students should be familiar with Windows and have keyboarding skills at 25 wpm.

BOS 206: Scheduling and Internet Office Applications 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course provides an introduction to the operational and technical aspects of microcomputer communications using Microsoft Outlook and Netscape Communicator. Topics covered include sending and receiving e-mail; electronic scheduling: organizing appointments, meetings, and events; maintaining an address book; and using the internet for common business tasks.

BOS 207: Presentation Software Applications 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course teaches presentation software concepts and applications using Microsoft PowerPoint 2000 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. This course is also offered in a self-paced format. All MOUS core competencies are covered. Students should be familiar with Windows and have keyboarding skills at 25 wpm.

BOS 208: Desktop Publishing for the Office 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9 11 12

This course provides a practical 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 documents for the Web is covered, and students are introduced to image-editing techniques. Good design techniques are applied to produce documents that communicate effectively in a business environment. Students taking this course should have basic knowledge of Windows based computers and keyboarding proficiency.

BOS 210: Medical Transcription 3 Credits

Level I Prerequisites: HSC 101
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 3 9 11 19

This beginning 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 220: Medical Transcription II 4 Credits

Level I Prerequisites: HSC 101 and BOS 210
60 lecture, 0 lab, clinical, other, total contact hours
Fulfills Core Elements:None

This is the second course in medical transcription. Students continue to develop speed and accuracy in transcribing a variety of dictated medical reports. Emphasis is on learning the terminology and applying it to eighteen medical specialties. Practices, anatomy, tests, and abbreviations relating to these specialties will be covered. Dictation includes a variety of dialects and progresses in difficulty as students gain experience. Proofreading, the use of a variety of resources, and the correction of dictation errors is stressed throughout the course.

BOS 223: Medical Office Procedures 3 Credits

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

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 private insurance using the proper coding system. Students must complete a minimum of 4 practice hours in addition to regular lecture and lab hours.

BOS 224: Medical Office Insurance and Billing 4 Credits

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 9 11 12

This course is for those interested in a career in the medical office as a medical assistant, insurance, or biller/coder. The course will cover the fundamentals of health insurance and their requirements for claim form processing. Learners will use billing reference manuals and coding books to accurately abstract information necessary to produce acceptable forms in a timely manner for Blue Cross/Blue Shield, government-sponsored programs, and major commercial carriers. Case studies and exercises will be used to practice completing forms both manually and electronically.

BOS 225: Advanced Document Preparation 3 Credits

Level I Prerequisites: BOS 257
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 8 9 11

This course is designed to provide practical study and advanced training in using Office 2000. Emphasis is placed on developing insights into the responsibilities of the information processing center including staff, personnel qualifications, and human relations. The course also includes information processing alternatives, equipment and needs surveys, organization and implementation of information processing, and management and control of information processing functions.

BOS 250: Administrative Office Systems and Procedures 4 Credits

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 2 3 9 11 18 19 20

This capstone course for the Administrative Assistant and Medical Administrative Assistant Technology programs covers many functions that have been changed by technology. Emphasis is placed on the expanding duties of an administrative assistant including time management, business composition, human relations skills, and information retrieval for the business office. Continued importance is placed on verbal, nonverbal, and written communications. Office planning, environment, etiquette, and protocol are other topics covered, and a variety of specialized office documents are prepared.

BOS 257: Word Processing Applications II 2 Credits

Level I Prerequisites: COMPASS Reading = 70 or ACS 070 concurrently COMPASS Writing = 81 or ENG 091 concurrently
Level II Prerequisites: BOS 157
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9 11 20

This course is a continuation of BOS 157. Advanced word processing and document preparation concepts and skills using Microsoft Word version 2000 in a Windows operating system are covered. Skills include formatting graphics; web publishing; preparing tables of content, indexes, outlines, and online forms; tracking changes; using templates, styles, and macros; creating WordArt objects; and applying desktop publishing concepts and functions to business documents. This course is also offered in a self-paced format. When combined with BOS 157, all MOUS core and expert competencies are covered.

Chemistry CEM

CEM 057: Introductory Chemistry 3 Credits

Level I Prerequisites: (COMP Writing=81 or ENG 091 min grade of "C", concurrent enrollment allowed) and (COMP Reading =70 or ACS 070 min grade of "C", concurrent enrollment allowed)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course offers a basic exposure to chemistry. Students with no back-ground in high school science or algebra, or students wishing to improve their chemistry background should take this course before taking CEM 105 or CEM 111. Introductory Chemistry Laboratory (CEM 058) should be taken concurrently.

CEM 058: Introductory Chemistry Lab 1 Credit

Level I Prerequisites: CEM 057 with min grade of "C" or concurrent enrollment allowed
0 lecture, 45 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

Designed to accompany CEM 057, this course provides an experience with basic chemical laboratory practices and procedures.

CEM 105: Fundamentals of Chemistry 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 15

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: high school chemistry or CEM 057 with a "C" or better
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 15

This course covers the major topics in chemistry. Laws of chemical combination, states of matter, atomic and molecular structure, bonding, and other basic principles are covered. It is for students in a professional or preprofessional curriculum.

CEM 122: General Chemistry II 4 Credits

Level I Prerequisites: CEM 111 and (MTH 169 or COMPASS Algebra score = 66) all courses with a "C" or better
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 11 12 15

This course covers four major topics in chemistry: kinetics, chemical thermodynamics, chemical equilibrium, and electrochemistry. Laboratory work includes qualitative and quantitative analysis.

CEM 140: Organic Biochemistry 4 Credits

Level I Prerequisites: CEM 105 or CEM 111 min grade of "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 15

An introduction to both organic chemistry and biochemistry for nursing and other health services students. Major topics covered are the structure and functional groups of organic compounds, structures of biological molecules, mechanism of enzyme-catalyzed reactions, equilibria involved in the exchange and transport of oxygen and carbon dioxide, acid-base balance, and bioenergetics.

CEM 211: Organic Chemistry I 4 Credits

Level I Prerequisites: CEM 122 min grade of "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 15

This course provides students with the background in nomenclature of organic chemistry, stereochemistry, the preparation and reactions of aliphatic and aromatic compounds. Students also practice the preparation and handling of organic compounds in the laboratory. This is the first course in a two semester sequence.

CEM 218: Analytic Chemistry 4 Credits

Level I Prerequisites: CEM 122 min grade of "C"
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 4 5 6 7 9 15

Techniques for the separation and quantitative determination of chemical substances by gravimetric, volumetric, and instrumental methods are learned and practiced in this course.

CEM 222: Organic Chemistry II 4 Credits

Level I Prerequisites: CEM 122 and CEM 211 min grade of "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 7 9 15

This course provides a continued exploration of nomenclature, stereochemistry, preparations and reactions of organic compounds including spectroscopic analysis in the laboratory. Students apply the techniques used in CEM 211 to the synthesis and analysis of complex organic compounds. Laboratory work includes hands-on spectroscopic analysis (IR, GC, and NMR) of products and unknowns. This is the second course in a two semester sequence of organic chemistry.

Child Care Professional CCP

CCP 100: The Exceptional Child 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9

This course presents an overview of the major categories of exceptionality identified among children from birth through age twelve. Methods for identifying and working with children in child care settings and regular education classrooms are explored. Working as part of an interdisciplinary team and partnering with parents is a major focus. Resources, exceptional children, their families, and the professionals who work with them are stressed. It is recommended that students take CCP 101 prior to this course.

CCP 101: Child Development 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 16 21

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 103: Establishing Programs for Children 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7

The philosophy and theory of programs in child care are examined. Traditional, open, Montessori, High Scope, Piaget Based, Head Start, parent involvement and kindergarten programs are explored. Observations of area child care centers are frequently assigned.

CCP 104: The Basics of Child Care 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course introduces care givers to the childcare profession. The focus is on the knowledge and skills needed to care for children in group care settings. Topics covered include professionalism, the business of child care, health and safety, nutrition and food handling, child development, guidance and discipline, parent/provider relationships, and community resources. The course is equivalent to the 15 hour Child Care Futures Basic Training Course conducted by the Michigan 4-C Association and its local affiliates.

CCP 107: Math & Science Activities for Children 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7

Integrated curriculum workshops introduce the theory of math and science experiences for children. Topics include: learning to observe and teach the science and math around us every day; making materials, collecting resource files and practical application of ideas to be used in the child care setting. Community resources are explored. It is recommended that students take CCP 101 prior to this course.

CCP 108: Expressive Arts for Children 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13

This course covers a wide range of expressive arts experiences for children from infancy to adolescence in group settings including music, creative movement, visual arts, and dramatic play. The role of the adult in facilitating creativity and self-expression is emphasized. Materials, equipment, methods, and activities are introduced and their developmentally appropriate application is stressed. It is recommended that students take CCP 101 prior to this course.

CCP 109: Language and Communication for Children 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7

Designed for child care professionals, this course examines the development of language in children. Consideration is given to non-verbal communication and cultural differences. Basic methods, activities and materials for language arts and language development are introduced and their application in the child care setting is addressed. It is recommended that students take CCP 101 prior to this course.

CCP 110: Social and Emotional Development 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 21

This course provides a multi-cultural approach to the study of personality development during the first six years of life. The characteristics and needs that emerge with each developmental stage are explored. Methods, suggestions and practical guides for meeting these needs in the child care setting are emphasized. It is recommended that students take CCP 101 prior to this course.

CCP 111: Management of Child Care Programs 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 5

Practical aspects of daily operation of a child care program are presented: administrative forms and record keeping, state and federal regulations that affect daily operations, policies and procedures. Licensing regulations and accreditation standards are stressed.

CCP 113: Health, Safety and Nutrition for Child Care 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 9 16

Best practices in health, safety and nutrition are presented. Students develop specific competencies in these areas including establishing and maintaining a healthy, safe child care program, planning nutritional meals and snacks, and teaching children and their parents about health, safety and nutrition. Communicable diseases, government funded child/family food and nutrition programs, playground and toy safety, and resources for the child care provider are included.

CCP 118: Beginning Child Care Seminar 1 Credit

Level I Prerequisites: CCP 101 concurrent enrollment allowed
Corequisites: CCP 119
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

The role of the child care provider is examined in relationship to personal career goals. Curriculum planning, use of objectives or key experience, child observation and assessment, room arrangement and daily routine are introduced as ways to implement program philosophy. Developmentally appropriate practice is examined. Specific strategies and techniques for fostering early childhood development are emphasized. Establishing a safe and healthy learning environment and child guidance are major components of the course.

CCP 119: Beginning Child Care Practicum 2 Credits

Level I Prerequisites: CCP 101 concurrent enrollment allowed
Corequisites: CCP 118
0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours
Fulfills Core Elements:None

This course provides supervised teaching experience with young children in a licensed child care center. Students must take this course with CCP 118, Beginning Child Care Seminar. Students implement strategies and techniques learned in the Beginning Child Care Seminar and in Child Development. Students are expected to meet a level of competence in specific child care and teaching skills. Emphasis is placed on implementing developmentally appropriate practice. Students prepare activities for children and assume a role as a member of the teaching team. Students are required to meet with the CCP Program Advisor for consent to register for this course. Students are placed with a qualified supervising teacher in a licensed child care center either at WCC or off campus.

CCP 122: Child Development Credentialing I 4 Credits

Level I Prerequisites: (COMPASS Reading = 70 or ACS 070 concurrently) and (COMPASS Writing = 81 or ENG 091 concurrently)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

This course is designed to provide part of the formal training for students working toward their Child Development Associate Credential. During this course, students cover eight of the thirteen functional areas of the Child Development Associate (CDA) Competency Standards. Students participate in group seminar discussions and work on assigned observations and portfolio projects. Students must be 18 years of age and have a high school diploma or GED to register for this course.

CCP 123: Child Development Credentialing II 4 Credits

Level I Prerequisites: CCP 122 and (COMPASS Reading = 80 or ACS 107 concurrently and (COMPASS Writing=81 or ENG 091)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

This course is a continuation of CCP 122 for students working toward their Child Development Associate Credential. Five of the thirteen functional areas of the Child Development Associate (CDA) Competency Standards are covered. Students participate in group seminar discussions and work on assigned observations and portfolio projects.

CCP 124: CDA Assessment Preparation 1 Credit

Level I Prerequisites: Consent required
Corequisites: CCP 134
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course helps CDA candidates prepare for credential renewal or initial direct assessment. Students seeking the Child Development Associate credential for the first time should have completed 124 hours of approved instruction and 480 hours of approved experience with children. Students seeking CDA recredentialing receive assistance with their professional development plan and preparation for reassessment. Instructor consent is required to register for this course.

CCP 132: Child Development Practicum I 1-2 Credits

Level I Prerequisites: Consent required
Corequisites: CCP 122
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

This course provides a supervised field experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: safe and healthy learning environment, physical and cognitive communication. Students are required to work in a licensed child care center with infants and toddlers or preschoolers or licensed family child care home, or in a home visitor program during regular hours of operation. Observations will be completed at the work site using standards for the Child Development Associate national child care credential.

CCP 133: Child Development Practicum II 1-2 Credits

Level I Prerequisites: Consent required
Corequisites: CCP 123
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

This course provides a supervised field experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: creative, self, social, guidance, and families. Students are required to work in a licensed child care center with infants and toddlers or preschoolers or licensed family child care home, or in a home visitor program during regular hours of operation. Observations will be completed at the work site using standards for the Child Development Associate national child care credential.

CCP 134: Child Development Practicum III 1 Credit

Level I Prerequisites: Consent required
Corequisites: CCP 124
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

This course provides a supervised field experience for CDA candidates. Students are expected to demonstrate competence in the CDA functional areas: safe, healthy, learning environment, physical, cognitive, communication, creative, guidance, self, social, and families. Students are required to work in a licensed child care center with infants and toddlers or preschoolers or licensed family child care home, or in a home visitor program during regular hours of operation. Observations will be completed at the work site using standards for the Child Development Associate national child care credential.

CCP 200: Working with Parents 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course explores the many facets of parent and staff involvement in the child care setting. Topics include: various forms of parent participation, ways of increasing positive communication with parents, cultural differences and goals of parents, and planning parent involvement programs. Emphasis is given to the preparation, mechanics and techniques for the individual parent/teacher conference and parent meetings. This course should be taken during the last semester of the program or after 50 credits have been completed. It is recommended that students take CCP 101, 118 and 119 prior to this course.

CCP 218: Advanced Child Care Seminar 1 Credit

Level I Prerequisites: Consent required
Corequisites: CCP 219
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 1 3 7 9

Students learn about the role of the head child care provider, plan and evaluate extended sequences of activities for young children, and analyze and evaluate practice for developmental appropriateness. Students must meet with the CCP program advisor the semester before enrolling to confirm eligibility and select the appropriate work. This course should be taken during the last semester of the program or after 50 credits have been completed.

CCP 219: Advanced Child Care Practicum 2 Credits

Level I Prerequisites: Consent required
Corequisites: CCP 218
0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours
Fulfills Core Elements: 1 3 7 9

Students take increasing responsibility in the child care setting and assume the role of head child care provider for a minimum of two weeks. Students develop activities and learning materials suitable for young children, implementing developmentally appropriate practice in the work place. Students are placed in licensed group child care settings. Student must meet with Program Advisor prior to enrolling in the course to arrange placement. This course should be taken during the last semester of the program or after 50 credits have been completed.

CCP 220: Care and Development of Infants and Toddlers 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3

The development of infants and toddlers is studied. Emphasis is placed on stages of development in physical cognitive and social/emotional areas and developmentally appropriate practice in child care. Developmental issues related to health and safety, nutrition, toilet training, and child guidance are considered. Parent issues discussed include pregnancy, adjustment to parenting and working parents of infants and toddlers. Observation in infant./toddler group care settings is required. It is recommended that students take CCP 101 prior to this course.

CCP 230B: Heads Up! Reading - Part B 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course surveys the research-based principles and practices for providing children from birth through age five with a strong foundation in early reading and writing within a developmentally appropriate child care or early education program. The major goal is to prepare early childhood teachers and caregivers to enhance early literacy outcomes and increase their teaching skills.

Communications COM

COM 101: Fundamentals of Speaking 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9 10

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 polish organization 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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9 10

This interactive course offering will explore the principles of communication as it pertains to personal and workplace relationships. The communication process between two people is dynamic and often misunderstood. Handling criticism and defensiveness in others is an important skill in coping with today's sometimes hostile world. Conflict management will be explored.

COM 130: Introduction to Mass Communication 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 22

This survey course investigates the mass media from historical, economic, and social viewpoints. Major emphasis is placed on the history, theory, and criticism of the broadcast media. The course attempts to create a more "critical consumer" of mass media.

COM 142: Oral Interpretation of Literature 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 13 14

Students practice performance techniques necessary to effectively communicate by delivering interpretations of prose, poetry and oral histories in class and in public. Performance theory is directly applied to assignments. Special emphasis is placed on how to approach the interpretation of literature vocally and nonverbally in an effort to bring the literature to life for an audience. Highly recommended for any student wishing to enhance public communication skills, poise and understanding of literature.

COM 183: Advanced Public Speaking 3 Credits

Level I Prerequisites: COM 101
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 10

Students strengthen their ability to prepare and deliver dynamic speeches using today's computer generated graphics and other presentation skill techniques. Being organized to prevent information overload and displaying enthusiasm for the presentations are keys to success in public speaking.

COM 200: Family Communication 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 14

Students learn to promote healthy communication skills with the family in everyday life. This course examines the ways in which members of family systems interact in order to develop, sustain and manage their relationships. Today, family issues are at the forefront of national concerns, particularly in governmental, educational, and religious arenas. This communications course may also transfer as a psychology or sociology credit.

Computer Aided Drafting CAD

CAD 101: Introduction to AutoCAD 2 Credits

15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 11 12

This course provides an introduction to the use of AutoCAD software (CAD program candidates should choose CAD 111). This course was previously IND 216.

CAD 103: Introduction to 3D CAD 2 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is a software based course designed to teach the student 3D Solid Based software. The user will learn how to create solid model parts using various modeling techniques. From the solid model, the student will learn how to create solid assemblies, assembly drawings and detail drawings. This course is not part of the CAD Certificate or the CAD A.A.S. programs. This course was previously IND 217.

CAD 111: CAD I—Detailing 6 Credits

60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course is an introduction to the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of material specifications, drawing numbering systems, tabulated drawings, auxiliary views, sectioning, screw threads and fasteners. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of assembly and detail drawings, and parts lists for various manufacturing disciplines. AutoCAD software will be featured.

CAD 111A: CAD IA Detailing 3 Credits

Level I Prerequisites: Consent required
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

The purpose of this course is to offer apprentices and other qualified individuals an introduction to the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of the isometric, oblique, orthographic projection sketches and drawing, auxiliary views, sectioning and dimensioning practices. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of detail drawings. AutoCAD software is featured.

CAD 111B: CAD IB Detailing 3 Credits

Level I Prerequisites: Consent required
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

The purpose of this course is to offer those who have completed CAD 111A and other qualified individuals a continuation of instruction in the graphical language of industry using sketching and CAD. This course examines standard drafting practices in the application of material specifications, drawing numbering systems, tabulated drawings, screw threads, and fasteners. Emphasis is placed on dimensioning, tolerancing, and the use of CAD for the preparation of assembly and detail drawings, and parts listed for various manufacturing disciplines. AutoCAD software is featured. Students who have equivalent work experience may contact the instructor for permission to waive the pre-requisite.

CAD 113: CAD II—Drafting and Layout 6 Credits

Level II Prerequisites: CAD 111 min grade of "C-"
60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course covers practices and procedures for creating assembly and detail drawings from given layouts using CAD. An introduction to principles of design is included with emphasis on the use of standard parts catalogs and 3D models. Students with experience equivalent to CAD 111 may contact the instructor for permission to waive the pre-requisite.

CAD 115: Descriptive Geometry 4 Credits

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 9

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: (CAD 111, CAD 113, and CAD 115) min grade of "C"
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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: Parametric Modeling 4 Credits

Level I Prerequisites: CAD 111 and CAD 113
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 9 11

This course introduces the student to the basics of parametrics-based solid modeling using SolidWorks. The student will learn how to develop a constraint network by using geometric constraints and equations to control wireframe. From the wireframe, students will create solid models and surfaces using various techniques such as extrude, revolve, loft and sweeps. The student will learn how to apply various local operations to solid models such as draft, shell, chamfers and fillets. The student will learn how to modify and manipulate the part history and output the solid models as drawings and rendered images. This course was previously IND 221.

CAD 213: Mechanisms 4 Credits

Level I Prerequisites: CAD 111 and CAD 113
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

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 who have equivalent work experience may contact the instructor for permission to waive the pre-requisite.

CAD 215: Geometric Dimensioning and Tolerancing 3 Credits

Level I Prerequisites: CAD 113 (concurrent enrollment allowed)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 9

This course covers the language of Geometric Dimensioning and Tolerancing (GD&T) as governed by the ASME Y14.5M, 1994 Dimensioning and Tolerancing Standard. This application based course covers the rules, practices, and symbology that is outlined in the national standard. Specifically, students learn how to set up a datum reference framework, apply the 14 geometric controls, and analyze the obtained tolerances gained from applying GD&T. This course was previously IND 123. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

CAD 217: Mechanical Design 6 Credits

Level I Prerequisites: CAD 211 and CAD 213
60 lecture, 60 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

Students study the development of a product from concept design and layout stages to the preparation of working drawings. Emphasis is on the preparation of a good solid model construction and layout drawings incorporating a maximum of commercially available components, fastening techniques. The final output of the design will be presented as finished assembly and detail drawings in accordance with latest ANSI/ASME standards. Manufacturability and economy of the product will be a criteria for final assessment.

CAD 274: CAD Co-op Education II 1-3 Credits

Level I Prerequisites: CAD 174 min. grade of "C" and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two Co-op courses.

CAD 280: The Basics of Part Modeling 3 Credits

Level II Prerequisites: Industry experience or completion of post secondary CAD training
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

Students learn fundamental concepts and applications of the I-DEAS Master Series (SDRC) tool set. The course specifically focuses on the creation and modification of a 3D part or model. Students learn to navigate through the extension user interface, work with various sketch planes and reference geometry, create wireframe sketches, constrain those wireframe sketches through the use of geometric constraints and model dimensions, and then extrude or revolve those sketches into 3D solid parts. Use of the I-DEAS data management system is also covered.

CAD 282: Constructing Assemblies 2 Credits

Level II Prerequisites: Industry experience or post secondary training
32 lecture, 0 lab, 0 clinical, 0 other, 32 total contact hours
Fulfills Core Elements:None

Students learn to build and manage solid model assemblies using I-DEAS Master Series (SDRC). The course includes creating and modifying an assembly hierarchy, setting and modifying assembly constraints, analyzing assembly properties, manipulating assembly displays, and diagnosing and repairing problem assemblies.

CAD 284: Part Modeling II 3 Credits

Level I Prerequisites: CAD 280
40 lecture, 0 lab, 0 clinical, 0 other, 40 total contact hours
Fulfills Core Elements:None

Students build upon fundamental skills learned in Part Modeling I. The course includes how to create and modify solid parts using I-DEAS' sweep, loft, and variation sweep tools. Other topics include how to use the various sketchpads and planes to build associativity into a part, how to troubleshoot, diagnose, and repair poorly constructed parts, and how to build a part using the general construct operator and shell tools. Students also learn how to access and research I-DEAS' extensive database.

CAD 286: Part Modeling III 2 Credits

Level I Prerequisites: CAD 280 and 284
32 lecture, 0 lab, 0 clinical, 0 other, 32 total contact hours
Fulfills Core Elements: None

This course is a continuation of Part Modeling II and Constructing Assemblies. Students learn to design for ease of assembly employing the top down and bottom up approaches, to create a solid part using open part modeling techniques and to create and modify surfaces using specific surface operations. Also included is how to import and export I-DEAS' data, remaster parts, compare parts, and use design groups in the process of creating creditable designs.

CAD 290: Working Details 2 Credits

32 lecture, 0 lab, 0 clinical, 0 other, 32 total contact hours
Fulfills Core Elements:None

This course introduces students to a new I-DEAS' interface and functionality. Skills covered include creating detail and layout drawings from solid parts and assemblies; creating standard views, section views, and auxiliary views as defined by ASME/ANSI standards; creating and editing dimension, geometric tolerances, and notes; and creating and editing a bill of materials, layer, and other ASME/ANSI related symbols. Also covered is how to use the Command Option Area and plot drawings.

CAD 292: Free Form Surfacing 2 Credits

32 lecture, 0 lab, 0 clinical, 0 other, 32 total contact hours
Fulfills Core Elements: None

In this course students learn to create free form surfaces using the ICEM surfacing package. Students create three-dimensional simple and complex surfaces that are typically used in the construction of the outer surfaces (class 1) of a car or airplane.

Computer Information Systems CIS

CIS 099: Computer Literacy 1 Credit

Level I Prerequisites: COMPASS testing not required.
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course teaches all competencies required by the Washtenaw Community College Computer and Information Literacy associate degree graduation requirement. If students have not met this requirement by passing the Computer and Information Literacy test, they may meet it by completing this course and passing the final exam. Competencies covered include but are not limited to basic word processing, file management, information evaluation, and email. Basic computer concepts such as operating systems, hardware and software, networks, and legal and security issues are also taught.

CIS 100: Introduction to Software Applications 3 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 11 12 18 19 20

This class covers basic computer literacy, an introduction to Windows desktop, the fundamentals of productivity software (currently using Office 2000) and experience using the Internet. No previous computer training is required. Class format includes hands-on work on the computer.

CIS 101: Basic Computer Skills for Hospital Professionals 2 Credits

15 lecture, 15 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11 12 18 19 20

This course introduces health care professionals to computers: the principles of how they work and essential vocabulary, with hands-on practice in the software most useful in health care work in hospitals.

CIS 110: Introduction to Computer Information Systems 3 Credits

Level II Prerequisites: A working knowledge of applications software or enroll in CIS 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 11 12 18 19 20

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. Students who do not have these skills may enroll in CIS 100 concurrently with CIS 110.

CIS 117: Windows Operating System 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9 11 12

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 2000 Professional is currently used in the course. The course includes content previously included in CIS 116 and CIS 117.

CIS 121: Linux/UNIX Fundamentals 3 Credits

Level I Prerequisites: CIS 100 or CIS 110 or CPS 120 with min grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 11 19

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. Students with experience equivalent to CIS 110 may contact the instructor for permission to waive the pre-requisite.

CIS 174: CIS Co-op Education I 1-3 Credits

Level I Prerequisites: 2 courses in the CIS discipline with min grade of "C" and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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. Consent of the instructor is required to register for this course.

CIS 175: Beginning Java Programming 4 Credits

Level I Prerequisites: COMP Algebra=66 or MTH 169 min grade of "C"
Level II Prerequisites: CIS 100 or CIS 110 or CPS 120 (min grade of "C")
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is designed to provide an introduction of Java Basics to students who have no previous programming experience. The content of this course includes an introduction to language basics, object oriented concepts, string manipulation, I/O (input/output), GUI (graphical user interface) concepts, and event handling. The focus will be on programming concepts and simple examples. Students passing this course can move onto CIS 275 to receive an intense presentation of Java Programming designed to prepare them for Java certification.

CIS 204: Linux Installation and Configuration 3 Credits

Level I Prerequisites: CIS 121 min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the first of four courses on the Linux operating system. Students learn to configure and install several versions of Linux. Students should have a basic understanding of UNIX/Linux commands and structure to succeed in this course. This course is designed to help prepare students for Linux Certification Exams. Students who have experience equivalent to CIS 121 may contact the instructor for permission to waive the pre-requisite.

CIS 206: Linux System Administration 3 Credits

Level I Prerequisites: CIS 204 with min. grade of "C" or permission of instructor
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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. Individuals with experience equivalent to CIS 204 may contact the instructor for permission to waive the pre-requisite.

CIS 208: Linux Networking 3 Credits

Level I Prerequisites: CIS 206 min. grade of "C". Individuals with equiv. experience, see instructor for waiver.
45 lecture, 0 lab, clinical, other, total contact hours
Fulfills Core Elements: None

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. Students who have experience equivalent to CIS 206 may contact the instructor for permission to waive the pre-requisite.

CIS 210: Linux Security and Privacy 3 Credits

Level I Prerequisites: CIS 208 min. grade of "C." Individuals with equiv experience may see instructor for waiver.
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the fourth in a series of four courses on the Linux operating system. Linux security, ethical considerations, and privacy issues are discussed. Practical application of security theory is taught through lab exercises. Students should be familiar with common Linux distributions, system administration, and networking to succeed in this course. This course is designed to prepare students for Linux Certification Exams. Students with experience equivalent to CIS 208 may contact the instructor to waive the pre-requisite.

CIS 221: UNIX Tools and Scripts 3 Credits

Level I Prerequisites: CIS 121 min. grade of "C" or permission of instructor
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 11 12 19

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. Students with experience equivalent to CIS 121 may contact the instructor for permission to waive the pre-requisite.

CIS 238: PC Assembly Language 3 Credits

Level II Prerequisites: CPS 171 or CPS 185 min grade of "C" or proficiency with any programming language
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 11 18

This is a first course in PC assembly language. The organization of the 80x86 microprocessor is examined to aid in the study of the instruction set. Topics include various character/numeric conversions, twos and tens complement arithmetic, string and bit manipulation, the calling of assembly language routines from other assembly programs as well as from high level language programs, and the use and modification of DOS and BIOS interrupt routines. Prerequisites will be checked the first day of class.

CIS 265: Programming the Web 3 Credits

Level II Prerequisites: INP 150 min. grade of "C" or basic knowledge of HTML
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 9 11 12

This course is intended for students who have a knowledge of problem solving techniques as applied to programming languages and a basic knowledge of HTML. Topics covered include creating HTML forms, Common Gateway Interface (CGI), programming using Perl (process data from the form), basic JavaScript for verifying form data, and the setup of a simple Web server.

CIS 266: Web Programming Using Active Server Pages 4 Credits

Level II Prerequisites: CIS 265 and (CPS 171 or 185) min. grade of "C" or equivalent industry experience
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is intended for students who understand CGI (common gateway interface). VBScript (Visual Basic Script) is used in server side scripting to process form data from the browser. The Application, ObjectContext, Request, Response, Server and Session objects along with their Properties, Collections, Methods, and Events will be discussed. Other related topics including ADO (ActiveX Data Objects) database access will be covered. Prerequisites will be checked on the first day of class.

CIS 269: Java Certification Preparation 4 Credits

Level II Prerequisites: CPS 271 or CPS 290 or CIS 175 min grade "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course provides an intense presentation of the fundamentals of the Java programming language to students who already have a good knowledge of C++ (or have taken CIS 175). The goal of the course is to prepare students to pass the Sun Java Certification exam. Content includes language basics, object oriented concepts, threads, exceptions, string manipulation, I/O (input/output), GUI (graphical user interface) concepts, event handling, and collection classes.

CIS 270: Advanced Perl Programming 3 Credits

Level II Prerequisites: CIS 265 min. grade of "C" or basic knowledge of PERL
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is a continuation of Programming the Web (CIS 265). This course focuses on using Perl to provide Web Server side programming support. Topics to be covered include Perl Objects, Handling Errors and Signals, Perl Modules, Form processing, CGI, Web Servers, and other related technologies.

CIS 274: CIS Co-op Education II 1-3 Credits

Level I Prerequisites: CIS 174 with min grade of "C" and consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 275: C Programming Language 4 Credits

Level I Prerequisites: CPS 171 or CPS 185 min. grade of "C".
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This is an introductory course in the C programming language. The intended audience is experienced programmers. Most features of the C language are discussed so that students who successfully complete the course are capable of versatility in using C. Emphasis is placed on structured programming techniques and sound documentation. Students with experience in computer programming may contact the instructor for permission to waive the pre-requisite.

CIS 277: Java for Programmers 3 Credits

Level II Prerequisites: CPS 171 or CPS 185 min. grade of "C" or proficiency in a programming language
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course covers the basics of Java, including creating a simple applet and application, object oriented programming concepts, objects and classes in Java, managing inheritance, and simple Java I/O. Students consider practical issues, common problems and solutions in applet development, string handling, program attributes, accessing system resources, error handling, threads, and creating a user interface. Prerequisites will be checked on the first day of class.

CIS 278: Advanced Java Programming 3 Credits

Level II Prerequisites: CIS 269 or CIS 275 min grade "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course covers some of the key Java 2 Enterprise Edition (J2EE) concepts. The main focus will be on Java Servlets, Java Server Pages (JSP), Java Bean Fundamentals and Java Database Connectivity (JDBC). Additional topics covered can include Remote Method Invocation (RMI), Java E-mail, SQLJ (an implementation of the SQL database query language in Java), and JSP tag libraries. Students taking this class should have a good knowledge of Java Fundamentals, and some knowledge of simple HTML and simple SQL.

CIS 279: XML Programming 4 Credits

Level II Prerequisites: CIS 269 and INP 150 min. grade of "C" or equivalent industry experience
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

In this course, XML related programs are developed in Java and Javascript. XML concepts (DTD, CSS, XSL, DOM) are also covered. Students must have a working knowledge of Java and HTML to succeed in this course. Javascript and Dynamic HTML concepts are taught based on the prerequisite knowledge of Java and HTML.

CIS 282: Relational Database Concepts & Applications 3 Credits

Level II Prerequisites: CPS 120 or CPS 171 min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 11 12

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 the course was changed from Small Systems Database.

CIS 286: UNIX Systems Administration 4 Credits

Level I Prerequisites: CIS 121 min grade of "C" or consent of the instructor
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 2 7 8 9 11 19

Concepts and technical knowledge of operating systems, utilities and control languages are presented with hands-on experience using the UNIX operating system. Topics covered include startup and shutdown, user accounts, security, automating routine tasks, managing system resources, file systems, back-ups, devices, and networking. Students with equivalent industry experience may contact the instructor for permission to waive the pre-requisite.

CIS 288: Systems Analysis and Design 3 Credits

Level II Prerequisites: CPS 171 or 185 with min. grade of "C" or equivalent industry experience
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 9 11 19

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, program testing and installation procedures, principles of software development monitoring, structured walkthroughs and other programmer communication, and producing software development specifications. Prerequisites will be checked on the first day of class.

CIS 289: Project Leadership and Design Tools 3 Credits

Level II Prerequisites: CIS 288 min. grade of "C" or equivalent industryexperience
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course will combine technical, communications and project leadership topics to provide a comprehensive exposure to overall project management. It will prepare the experienced programmer, analyst and business analyst for a project leadership role. Prerequisites will be checked on the first day of class.

CIS 290: Microcomputer System Support 4 Credits

Level II Prerequisites: 20 credit hours in the APMSS program
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 9 11 12 18 19

This is the final course in the Microcomputer System Support program. Students gain problem solving skills, practice user training techniques, and consolidate knowledge required for serving as a Microcomputer Systems Support Technician. Prerequisites will be checked on the first day of class.

CIS 291: Introduction to Oracle SQL/ and PL/SQL 4 Credits

Level II Prerequisites: CIS 282 min. grade of "C" and proficiency in a programming language
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9 11 18

Students are introduced to Structured Query Language (SQL) and PL/SQL functions. They learn how to create and maintain database objects and how to store, retrieve, and manipulate data. They also learn how to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications. Further topics include PL/SQL procedures, functions, and packages. Using both the Procedure Builder and the SQL Plus environments, students learn how to create and manage PL/SQL program units and database triggers. Prerequisites will be checked on the first day of class.

CIS 292: Introduction to Oracle Developer 3 Credits

Level II Prerequisites: CIS 291 min. grade of "C" or completion of an equiv Oracle course or proficiency in SQL & PL/SQL
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 9 11 18 19 20

This course is an introduction to Developer/2000 technology. Students learn to navigate through the Developer/2000 interface using features such as the Object Navigator and VGS (Virtual Graphics System), which includes the Layout Editor and Menu options. Students build and test interactive applications consisting of one or more Developer/2000 forms modules. Working in a GUI (graphical user interface), participants build a complete forms application. Prerequisites will be checked on the first day of class.

CIS 293: Advanced Oracle Developer 4 Credits

Level II Prerequisites: CIS 292 min. grade of "C" or equivalent course or experience (see course description)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9 11 18

This course builds on skills learned in CIS 292 in the use of Developer/2000 technology. Students learn to manage projects using Project Builder, to design and build menu modules, use function keys and record groups, create programming modules, and manage data to produce reports. Students create advanced multiple-form applications and reports with various formats and styles. Students should have knowledge of basic Forms and proficiency in SQL and PL/SQL to register for this course.

CIS 294: Information Systems Planning 3 Credits

Level II Prerequisites: CIS 289 min. grade of "C" or equivalent industryexperience
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course will explore the many issues related to managing technical resources, people, machines, and systems. It prepares the experienced analyst or project leader for the role of IS manager. Prerequisites will be checked on the first day of class.

CIS 296: Oracle Architecture and Administration 3 Credits

Level II Prerequisites: CIS 291 min. grade of "C" or proficiency in SQL and knowledge of PL/SQL
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the second of five courses in the Oracle Database Administration program (CPODA). Students build on the skills learned in CIS 291 in the creation of SQL queries and PL/SQL functions and are introduced to basic Oracle database administration concepts. Students learn how to create a database, manage an instance, manage data storage, and manage security. This course prepares students to take Oracle 8i Database administration exam number 1Z0-023.

CIS 297: Oracle Backup and Recovery 2 Credits

Level II Prerequisites: CIS 296 min. grade of "C" or equivalent course or industry experience
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: None

This is the third of five courses in the Oracle Database Administration program (CPODA). Students learn how to troubleshoot, design, and implement backups and recoveries of Oracle databases. This course prepares students to take Oracle 8i Backup and Recovery exam number 1Z0-025. Prerequisites will be checked on the first day of class.

CIS 298: Oracle Performance and Tuning 3 Credits

Level II Prerequisites: CIS 296 min. grade of "C" or equivalent course or industry experience
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the fourth of five courses in the Oracle Database Administration program (CPODA). Students are introduced to Oracle database tuning concepts and learn how to manage memory and disk input/output, optimize sorts, and minimize contention. This course prepares students to take Oracle 8i Performance Tuning exam number 1Z0-024.

CIS 299: Oracle Network Administration 1 Credit

Level II Prerequisites: CIS 296 min. grade of "C" or equivalent course or industry experience
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course is the fifth of five courses in the Oracle Database Administration program (CPODA). Students learn about Oracle network administration and about Oracle Net8 architecture, configuration, and troubleshooting. This course prepares students to take Oracle 8i Network Administration exam number 1Z0-026.

Computer Networking Technology CNT

CNT 201: Administering Microsoft Windows 2000 Professional 3 Credits

Level II Prerequisites: ELE 225A or CNT 206 with a min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the first course in a series of four that prepares students for the Microsoft Certification, Microsoft Certified System Administrator (MCSA). This course is also required for WCC's Computer Network Operating Systems I certificate. The course gives students a strong foundation in installing, configuring and administering Windows 2000 professional as a client operating system within an overall network structure. Installing W2K, configuring file systems, security, networking protocols, and network printing are all emphasized. Performance tuning and troubleshooting are covered with emphasis on the boot process and application support. A basic understanding of Windows 2000 Professional and networking principles are required.

CNT 206: Internetworking I - Fundamentals 4 Credits

Level II Prerequisites: ELE 155, ELE 216A, and ELE 225A
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the first of four courses in the Computer Networking Academy I program (CVCNT) and is part of the CISCO networking curriculum at the college. This course 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. Students must complete the Computer Systems Technology Certificate (CTCSTC) or must have equivalent experience to register for this course. This course was previously CNT 200.

CNT 211: Administering Microsoft Windows 2000 Server 4 Credits

Level II Prerequisites: CNT 201 min grade of "C", concurrent enrollment allowed
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the second course in a series of four that are part of the preparation program for the Microsoft Certification, Microsoft Certified System Administrator (MCSA). This course is required for WCC's Computer Network Operating Systems I certificate. The course is designed to give students a foundation in installing, configuring and administering Windows 2000 Server as the main component within an overall Microsoft network structure. Networking activities are emphasized with an over-the-network Windows 2000 installation as well as Active Directory and Network Protocol installation and configuration.

CNT 216: Internetworking II - Routers 4 Credits

Level I Prerequisites: CNT 206
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the second of four courses in the Computer Networking Academy I program (CVCNT) and is part of the CISCO networking curriculum at the College. This course prepares students for a portion of the CISCO Certified Network Associate (CCNA) certification examination. Students gain the knowledge and skills to install, configure, update, and troubleshoot network routers. Students also solve common routing problems. This course was previously CNT 225.

CNT 221: Implementing a Microsoft Windows Network Infrastructure 3 Credits

Level I Prerequisites: CNT 211
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This is the third course in the Computer Networking Operating Systems I program. It also prepares students for the Microsoft Certification, Microsoft Certified System Administrator (MCSA). This course provides the experience needed to install, manage, monitor, configure, and troubleshoot DNS, DHCP, Remote Access, Network Protocols, IP Routing, and WINS in a Windows 2000 network infrastructure. In addition, students learn to manage, monitor, and troubleshoot Network Address Translation and Certificate Services.

CNT 222: Managing a Microsoft Windows 2000 Network Environment 4 Credits

Level II Prerequisites: (CNT 201 and CNT 211) min grade "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is a "capstone" course for the Microsoft Certification, Microsoft Certified System Administrator (MCSA). The functions of Windows 2000 Server used to manage a network made up of Windows Servers and Workstations are covered. Topics from previous networking courses are addressed in this course from an "integrated" viewpoint.

CNT 226: Internetworking III - Switches 4 Credits

Level I Prerequisites: CNT 216
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the third of four courses in the Computer Networking Academy I program (CVCNT) and is part of the CISCO networking curriculum at the College. This course prepares students for a portion of the CISCO Certified Network Associate (CCNA) certification examination. The course also provides students with the knowledge and skills necessary to install, configure, update, and troubleshoot switched Local Area Networks (LANs) and Virtual Local Area Networks (VLANs). Other skills include migration from RIP to IGRIP, IGRP configuration, routing of Novell IPX, and security viathe implementation of Access Control Lists. This course was previously CNT 235.

CNT 231: Administering Microsoft Windows 2000 Directory 4 Credits

Level II Prerequisites: CNT 211 min grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the first course in the Computer Network Operating System II certificate. Students get a strong foundation in installing, configuring and administering Windows 2000 Active Directory, Microsoft's implementation of a directory service for medium to large networking environments. The structure and components of Active Directory, preliminary planning required to implement it and actual installation and configuration are covered. This is followed with maintenance and monitoring, specifically looking at administrative functions such as adding users, groups and organizational units.

CNT 236: Internetworking IV - WANs 4 Credits

Level I Prerequisites: CNT 226 or CNT 235
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the fourth of four courses in the Computer Networking Academy I program (CVCNT) and is part of the CISCO networking curriculum at the College. This course provides students with the knowledge and skills necessary to install, configure, update, and troubleshoot a variety of broadband networks including Frame Relay, Integrated Services Digital Network, and Asynchronous Transfer Mode. This course was previously CNT 245.

CNT 241: Designing a Windows 2000 Directory Services Infrastructure 4 Credits

Level I Prerequisites: CNT 231 min grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the second course in the Computer Networking Operating Systems II program. This course is designed to instruct students in the design of a Directory Services architecture using Windows 2000 Active Directory. The course prepares students to complete the Windows 2000 Certification Examination 70-219. Students will learn to analyze business requirements and translate those requirements into an Active Directory database.

CNT 246: Advanced Routing Configuration 4 Credits

Level II Prerequisites: CNT 236 or CNT 245
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the first of four courses in WCC's Computer Networking Academy II Advanced Certificate. This course prepares students for a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to configure various routing protocols such as IGRP, EIGRP OSPF and BGP. In addition, students learn how to configure routers to enhance network security. This course was previously CNT 255.

CNT 251: Designing Windows Security 3 Credits

Level I Prerequisites: CNT 241 min grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the third course in the Computer Networking Operating Systems II program. Students learn to identify security risks associated with managing resource access and data flow on the network and describe how Windows 2000 features are used to secure a network and its resources. The student will learn to plan a Windows 2000 administrative structure that facilitates secure and verifiable user account management, define security requirements for Windows 2000 based domain controllers, application servers, file and print servers and workstations, and design end-to-end security for the transmission of data between hosts on the network. The student will also learn how to design a strategy for securing access for non-Microsoft clients within a Windows 2000 based network, design a strategy for securing local resources accessed by remote users and designa strategy for securing local resources accessed by remote offices.

CNT 256: Remote Access Networks 4 Credits

Level I Prerequisites: CNT 246
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This is the second of four courses in WCC's Computer Networking Academy II Advanced Certificate. This course prepares students to complete a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to configure various remote access technologies including backup to permanent WAN connections, optimizing traffic on dedicated WAN connections, and scaling IP addresses. This course was previously CNT 265.

CNT 261: Designing a Windows Network Infrastructure 4 Credits

Level I Prerequisites: CNT 251 min grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the fourth course in the Computer Networking Operations Systems II program. Students learn to analyze the business requirements for a network infrastructure and design a network infrastructure that meets these requirements. Network infrastructure elements include network topology, routing, IP addressing, name resolution such as WINS and DNS, virtual private networks, remote access, and telephony service.

CNT 266: Multi-Layer Switching 4 Credits

Level I Prerequisites: CNT 256 with min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the third of four courses in WCC's Computer Networking Academy II Advanced Certificate. This course prepares students for a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to configure, supervise, manage, and troubleshoot various Virtual Local Area Networks (VLANs). This course was previously CNT 275.

CNT 271: Migrating from NT4 to Windows 2000 4 Credits

Level I Prerequisites: CNT 251
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

In this course students learn to migrate domains from Windows NT 4 to Windows 2000 and to perform domain restructures. A migration can include only an upgrade, only a restructure, or both an upgrade and a restructure.

CNT 276: Network Troubleshooting 4 Credits

Level I Prerequisites: CNT 266
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the fourth and final course in WCC's Computer Networking Academy II Advanced Certificate. This course prepares students for a portion of the CISCO Certified Network Professional (CCNP) certification examination. It also provides students with the knowledge and skills necessary to troubleshoot a wide variety of LAN and WAN configurations. This course was previously CNT 285.

CNT 281: Installing Clustering Services 3 Credits

Level I Prerequisites: CNT 231
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

In this course students learn to install, configure, and administer clustering services using a Microsoft Windows 2000 Advanced Server.

Computer Science CPS

CPS 120: Intro to Computer Science 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is an introduction to computer science for those planning to take advanced courses in the computer field. This course is recommended for those planning to take programming courses. Students write, enter, compile, and execute simple computer programs. This course is intended to bridge the gap between a basic computer literacy course and advanced courses. Students who have equivalent experience may contact the instructor to request permission to waive the pre-requisites.

CPS 171: Introduction to Programming with C++ 4 Credits

Level I Prerequisites: Compass Algebra = 66 or MTH 169 min grade of "C"
Level II Prerequisites: CIS 100 or CIS 110 or CPS 120 (min grade of "C")
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9 11 12 18 19 20

This is an introduction to programming using the C++ language. Students should have basic experience using a computer but no prior programming is required. (Experienced programmers should consider CPS 290.) 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 who have computer experience equivalent to CIS 100 or 110 may contact the instructor for permission to waive the CIS pre-requisite.

CPS 185: Introduction to Visual Basic Programming 4 Credits

Level I Prerequisites: COMPASS Algebra = 66 or MTH 169 min grade of "C"
Level II Prerequisites: CIS 100 or CIS 110 or CPS 120 min grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 11 19

This is an introductory course in the essential principles of using the Microsoft Visual Basic Programming System for Windows. Subjects covered include creating the interface (forms, tools, controls, objects, setting properties), writing code (including some programming fundamentals such as variables, arrays, controlling execution), printing, reading from and writing to files, debugging, and creating distribution disks. Students with experience equivalent to CIS 100 or 110 may contact the instructor for permission to waive the CIS pre-requisite.

CPS 271: Object Features of C++ 4 Credits

Level I Prerequisites: CPS 171 with a min. grade of "C" or equivalent industry experience
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course continues the study of C++ begun in CPS 171. (Experienced programmers should consider CPS 290.) 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: CPS 271 or 290 with min. grade of "C" or equivalent industry experience, see instructor for waiver
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is the third of a sequence of C++ courses, following CPS 171 and CPS 271. The course covers more advanced computer science features as implemented in C++. Topics include testing, verification and complexity of algorithms, recursion, advanced data structures, class libraries, and techniques for team design of large programs.

CPS 275: Linux/Unix System Programming 3 Credits

Level II Prerequisites: CPS 271or 290 with a min. grade of "C" or equivalent industry experience
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

In this course students learn about client-server programming on Linux/Unix. Topics include makefiles, libraries, debuggers, file I/O, process creation and management, interprocessor communication (pipes, shared memory, sockets, semaphores and message queues).

CPS 276: Web Programming Using Apache, MySQL, and PHP — 4 Credits

Level I Prerequisites: CIS 277 and CIS 175 and CPS 171 and CPS 185 with min grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course covers web server programming and database access from the web. Students taking this class should have knowledge of SQL (the Structured Query Language), HTML (the Hypertext Markup Language), and a programming language such as C++ , Visual Basic, Java or Perl. Students will learn to work with the Apache web server in a Unix environment. Web applications that will access a MySQL database will be developed with the PHP programming language. To achieve an efficient and secure solution for accessing databases from the web, the students will learn and utilize the following concepts: cookies, persistent database connections, and secure sockets.

CPS 285: Advanced Visual Basic Programming — 4 Credits

Level II Prerequisites: CPS 185 with a min. grade of "C" or equivalent industry experience
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 11 12 18 19 20

This course is a continuation of the CPS 185 Visual Basic course, and is intended for student with a basic understanding of Visual Basic. Among the topic to be addressed in this course are: Database Access, OLE, Windows API calls, Active-X controls, Error Checking and Internet access within our Programs including Client/Server applications, creating help files, and packaging an application.

CPS 290: Object-Oriented Programming — 4 Credits

Level II Prerequisites: Proficiency in a programming language
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 8 9 11 12

This course presents techniques and methodologies for designing computer programs, including an introduction to object-oriented design using C++. Limitations of traditional methods and the advantages of the object-oriented method are discussed. Topics include structured programming, program testing and verification, encapsulation, inheritance, polymorphism, streams, templates, exceptions, and extensibility of code. Students design and write programs using C++. Students should have a thorough understanding of programming using a programming language, but knowledge of C++ is not a prerequisite.

CPS 293: Windows Programming with C++ and C# — 4 Credits

Level II Prerequisites: CPS 271 or CPS 290 min. grade "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course provides an introduction to application development for Microsoft Windows using C++ and C#. The Microsoft Foundation Classes (MFC) will be used in the C++ portion of the course to develop Graphical User Interface (GUI) programs. The C# language will be introduced assuming that students already have a good understanding of C++. The C# language will provide students with a foundation to understand the Microsoft ".NET" architecture.

CPS 295: Advanced Visual C++ Windows Programming — 4 Credits

Level II Prerequisites: CPS 293 with a min. grade of "C" or proficiency in Visual C++ programming
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course provides in-depth exposure to, and experience with, advanced topics of Microsoft Foundation Class's (MFC) Windows programming. Students should be familiar with Microsoft Visual Studio 97 (including class wizard, resource and dialog editors, Visual C++ and the debugger) and have a working knowledge of basic MFC programming techniques. Advanced topics include sockets, threads, COM servers and containers, ActiveX automation, interprocess communication and synchronization (including semaphores, events, and flags), DAO, ODBC, ADO, DLLs, metafile, multi-media and registry programming.

Construction Management — CMG

CMG 130: Construction Site Safety and MIOSHA Regulations — 3 Credits

Level I Prerequisites: COMPASS Algebra=66 or MTH 169
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course covers both the application of safe work practices and the MIOSHA (Michigan Occupational Safety and Health Act) standards as they apply to construction site safety. MIOSHA standards, HAZMAT, and an investigation into the philosophical, social, economic, and technological bases for safety. Students will develop a model construction site safety plan.

CMG 150: Introduction to Construction Management — 3 Credits

Level I Prerequisites: COMPASS Algebra=66 or MTH 169
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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 — 4 Credits

Level I Prerequisites: CMG 150 min. grade "C"
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

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 200: Construction Systems — 4 Credits

Level I Prerequisites: CMG 170 min. grade "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course covers structural systems, associated non-structural components, and consideration appropriate to mechanical, electrical, plumbing, and support equipment.

Construction Technology CON

CON 100: Residential Blueprint Reading 3 Credits

Level I Prerequisites: MTH 039 or COMPASS Prealgebra=24
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This introductory course in construction blueprint reading emphasizes the development of visualization skills and the study of symbols and conventions commonly encountered in interpreting residential blue prints. Sketching skills and techniques are developed and smaller scale construction projects are studied.

CON 104: Construction I 3 Credits

Level I Prerequisites: MTH 039 or COMPASS Prealgebra=24
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the first course in a series of four that covers trade orientation, personal safety, hand tools, portable power tools, stationary power equipment, blueprint reading, rigging, and job site safety.

CON 105: Construction II 5 Credits

Level I Prerequisites: CON 104
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course is the second in a series of four courses that lead to a mastery certificate in residential construction. Topics covered include foundations and flatwork, introduction to concrete and reinforcing materials, concrete forms, and handling and placing concrete. Students who have equivalent work experience may contact the instructor for permission to waive the pre-requisite.

CON 124: Introduction to Painting & Decorating 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the first in a series of courses that cover residential and light commercial painting. The concepts of coatings, materials, surface preparation, and application techniques are introduced.

CON 126: Residential Painting Materials and Methods 3 Credits

Level I Prerequisites: CON 124 with min. grade of "C-"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the second course in the Residential and Light Commercial Painting series. This course introduces the concepts of surface identification, hand and mechanical surface preparation, protection of adjacent surfaces, surface improvement, and abrasive reconditioning.

CON 128: Wall Covering and Decorating Techniques 3 Credits

Level I Prerequisites: CON 126 with min. grade of "C-"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the third course in the Residential and Light Commercial Painting Series. The concepts of paint applications and techniques, special applications, material handling and storage, and site and equipment maintenance are covered.

CON 174: CON Co-op Education I 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 204: Construction III 4 Credits

Level I Prerequisites: CON 105
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course covers framing concepts such as floor systems, roof systems, and windows and exterior doors. Lecture/discussion sessions are supplemented with appropriate video, CD-ROM, and lab activities as determined by the instructor. Basic concepts in structural support, sound control, insulation, and mechanical systems considerations are covered. Window and door styles are also covered. In addition, conventional framing and truss roof systems are discussed. Students who have equivalent work experience may contact the instructor for permission to waive the pre-requisite.

CON 205: Construction IV 4 Credits

Level I Prerequisites: CON 204
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course is the final course in a series of four. Topics include stair construction, interior finish systems, exterior finish systems, roofing applications, and gutters and downspouts. This is a lecture/lab course and hands-on opportunities to practice skills are determined by the instructor. Students who have experience equivalent to CON 204 may contact the instructor for permission to waive the pre-requisite.

Criminal Justice CJT

CJT 100: Introduction to Criminal Justice 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 20 22 23

This course provides an in-depth look at the Criminal Justice System including law enforcement, courts and corrections. Individuality and the purpose of each division is studied. The student is provided with a sound understanding of the basic functions of each component.

CJT 110: Emergency Telecommunication 5 Credits

Level I Prerequisites: Consent required
80 lecture, 0 lab, 0 clinical, 0 other, 80 total contact hours
Fulfills Core Elements:None

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 21 22

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 22

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 22 23

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9 22

This course examines principles of constitutional, federal and state laws as applied to law enforcement. Topics include: adjectival law, the law of evidence; role of the police, prosecutor, defense counsel, judge and jury; the judicial process; criminal procedure in various courts; law of arrest and search and seizure; and constitutional restraints.

CJT 209: Criminal Law 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7

This course is designed in order for either lawyer or layman to broaden understanding of the various agencies involved in the administration of criminal law. The more important law enforcement functions from arrest to executive pardon are emphasized.

CJT 221A: Law Enforcement - Investigations 13 Credits
Level I Prerequisites: Consent required
Level II Prerequisites: MCOLES Test
195 lecture, 0 lab, 0 clinical, 0 other, 195 total contact hours
Fulfills Core Elements: 7 9 15 21 22

This course is part of the basic law enforcement training program, also known as the Police Academy. The curriculum, established by the Michigan Commission on Law Enforcement Standards (MCOLES), includes physical conditioning, defensive tactics, firearms training, and first aid as well as subjects requiring extensive reading, writing, and note-taking skills. Students successfully completing the Academy are eligible for an examination administered by MCOLES for certification as a law enforcement person. This section covers, in particular, all aspects of police investigations. Drug screening and a criminal background check are required as part of the admission procedure. Students must have completed 45 program credit hours, be eligible for graduation, and be admitted to the Police Academy to register for this course.

CJT 221B: Law Enforcement - Skill Areas 13 Credits
Level I Prerequisites: Consent required
Level II Prerequisites: MCOLES Test
Corequisites: CJT 221C
165 lecture, 126 lab, 0 clinical, 0 other, 291 total contact hours
Fulfills Core Elements: 9 15 16 22

This course is part of the basic law enforcement training program, also known as the Police Academy. The curriculum, established by the Michigan Commission on Law Enforcement Standards (MCOLES), includes physical conditioning, defensive tactics, firearms training, and first aid as well as subjects requiring extensive reading, writing, and note-taking skills. Students successfully completing the Police Academy are eligible for an examination administered by MCOLES for certification as a law enforcement person. This course covers, in particular, all the physical aspects of policing. Drug screening and a criminal background check are required as part of the admission procedure. Students must have completed 45 program credit hours, be eligible for graduation, and be admitted to the Police Academy to register for this course.

CJT 221C: Law Enforcement Training - Community Policing & Communication 4 Credits
Level I Prerequisites: Consent required
Level II Prerequisites: MCOLES Test
Corequisites: CJT 221B
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9

This course is part of the basic law enforcement training program, also known as the Police Academy. The curriculum, established by the Michigan Commission on Law Enforcement Standards (MCOLES), includes physical conditioning, defensive tactics, firearms training, and first aid as well as subjects requiring extensive reading, writing and note-taking skills. Students successfully completing Police Academy are eligible for an examination administered by MCOLES for certification as a law enforcement person. Drug screening and a criminal background check are required as part of the admission procedure. This section of the Academy covers interactions with community members in non-criminal situations where communication and understanding is of primary importance. Students must have completed 45 program credit hours, be eligible for graduation, and be admitted to the Police Academy to register for this course.

CJT 223: Juvenile Justice 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 7 8 21

The major emphasis of this course is on problems of law enforcement related to juvenile crime. Major topics covered include theories of juvenile delinquency, work of youth agencies, legislative involvement and new approaches to the prevention of juvenile crime.

CJT 224: Criminal Investigation 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 15

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
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 7 10

This course provides a unifying experience and evaluation of criminal justice systems, policies and practices. Preparation of a concluding research paper is required for this course. The focus is on analytical thought processes and problem solving.

Culinary Arts CUL

CUL 100: Introduction to Hospitality Management 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 5 7

This course is designed to give students an overview of the hospitality industry and opportunities in the industry today. It is an introduction to the study of the business organization and functions of management. On-site tours of the hospitality industry will be coordinated.

CUL 110: Sanitation and Hygiene 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9 15

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 114: Baking I 3 Credits
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements:None

This course is designed to introduce students to basic theory, practices, and production techniques required to produce quality baked good items such as yeast raised breads, quick breads, cookies, pies, and hi-ratio cakes. Emphasis is placed on time management, safe food handling, storage, and proper utilization of ingredients and equipment.

CUL 115: Pastry I **3 Credits**
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7

The student learns to produce contemporary pastries that would appear on the menus of the finer restaurants of the world. Emphasis is placed on the basics of baking and progressing to the fine art of pastry production. Lectures, demonstrations, and practical applications include petite fours and French pastry, puff pastry and pate choux specialties, gateaus and tortes, ice cream production and plated desserts.

CUL 118: Principles of Nutrition **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 16

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
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements:None

This course introduces the student to the principles of quantity food production, fabricating techniques and recipe conversions, costing, product identification and classical culinary skills. Students will also learn how to operate and care for equipment, along with maintaining a safe and sanitary environment. When taken with CUL 121, CUL 120 is equivalent to the previously offered CUL 111.

CUL 121: Introduction to Food Preparation Techniques **3 Credits**
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements:None

This course emphasizes the skills necessary to produce a la carte food preparation and presentation in a full service restaurant. This beginning production course will also examine the development of standards in food preparation, portion control, sanitation, receiving and storage of inventory, as well as the proper use in preparation and service. When taken with CUL 120, CUL 121 is equivalent to the previously offered CUL 111.

CUL 124: Baking II **3 Credits**
Level I Prerequisites: CUL 114
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7

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 who have experience equivalent to CUL 114 may contact the instructor for permission to waive the pre-requisite.

CUL 125: Pastry II **3 Credits**
Level I Prerequisites: CUL 115 or CUL 124
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7

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 130: Beginning Cake Decorating **1 Credit**
7 lecture, 23 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course is designed to teach students proper preparation and frosting techniques. Students learn the decorating techniques required to produce and design borders, side garlands, message inscriptions, buttercream flowers, and wedding cake construction.

CUL 131: Wedding Cake Design **1 Credit**
7 lecture, 23 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course is designed to teach students the finer techniques of cake decorating. Students learn to cover a cake in rolled fondant, create lace pieces, ruffles, borders, and make beautiful gum paste flowers. Students are encouraged to demonstrate creativity in the production of cakes for competition and decorative show pieces.

CUL 140: Bakery Management and Merchandising **2 Credits**
Level I Prerequisites: 15 credit hours in the Baking & Pastry program
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

Students understand and develop merchandising techniques through analysis of current competitive practices used in bakeries. They prepare bakery products and promotional projects such as newspaper ads, brochures, press releases and the basics of arranging display cases. Proper control of processing frozen dough products and the theory and application of no-time doughs and mixes used in commercial bakeries are covered, along with management principles and practices of the industry.

CUL 150: Food Service Management **3 Credits**
Corequisites: CUL 151
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements: 1

Students demonstrate service and supervisory techniques necessary in the operation of a full-service restaurant. Guest speakers, tours, and classroom discussions follow the lab, covering issues of guest service, financial accounting, responsible beverage service, and human relations principles related to the front of the house management. Students have the opportunity to receive certification for Techniques of Alcohol Management (TAM) and Race for Life (CPR).

CUL 151: Food Service Marketing **3 Credits**
Corequisites: CUL 150
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements:None

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 1-2 Credits
Level I Prerequisites: 15 credit hours in the Baking & Pastry program and consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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: Garde Manger 3 Credits
Level I Prerequisites: CUL 111 or (CUL 120 and CUL 121)
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7

Students demonstrate classical cold food preparation and presentation techniques as they relate to buffet display. Students will learn the methods related to the preparation of pates, gallantines, terrines, mousse, charcuterie, buffet salads, brines, cures, and ice sculptures. Students who have experience equivalent to CUL 111 or CUL 120 and CUL 121 may contact the instructor to waive the pre-requisite.

CUL 220: Organization/Management of Food Systems 3 Credits
Level I Prerequisites: CUL 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9

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
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7 9 18

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: CUL 230 and CUL 231
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

This course is a culmination of experiences for the advanced student. Focus will be placed on competitive skills in food design, presentation, organization, timing, and cooking methods used in hot and cold food competition. In addition, students have the chance to demonstrate their creativity and design skills through ice sculpture.

CUL 228: Layout and Equipment 3 Credits
Level I Prerequisites: CUL 111 or (CUL 120 and CUL 121)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 7 9 18

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 who experience equivalent to CUL 111 or CUL 120 and CUL 121 may contact the instructor for permission to waive the pre-requisite.

CUL 230: Quantity Food Production 3 Credits
Level I Prerequisites: CUL 111 or (CUL 120 and CUL 121)
Corequisites: CUL 231
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements: 5 7 8 18

This course builds on basic preparation and production techniques learned in CUL 120 and CUL 121. Quantity Food Production 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 will demonstrate organization, management, and production skills.

CUL 231: A La Carte Kitchen 3 Credits
Level I Prerequisites: CUL 111 or (CUL 120 and CUL 121)
Corequisites: CUL 230
23 lecture, 90 lab, 0 clinical, 0 other, 113 total contact hours
Fulfills Core Elements: 5 7 18

This course gives students the opportunity to advance and refine their skills in quality food production. Food preparation focuses on restaurant "cooked to order" cooking. Emphasis is placed on time, organization, portioning, and teamwork.

CUL 250: Principles of Beverage Service 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 5 7

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.

Dance DAN

DAN 101: Beginning Modern Dance I 1 Credit
Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course introduces dance as a creative art form. Basic movement vocabulary is taught along with body placement, alignment and simple tools for composing dance studies.

DAN 102: Beginning Modern Dance II 1 Credit
Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: DAN 101 with grade of "C" or better
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course continues in more depth the use of basic movement vocabulary by applying the technique to more complex dance phrases and is paced faster than DAN 101.

DAN 103: Beginning Tap Dance I 1 Credit
Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

In this course, students learn basic tap dance vocabulary which is incorporated into traditional steps and dance routines. Rhythmical enjoyment is emphasized.

DAN 104: Tap Dance II — 1 Credit

Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: DAN 103 with grade of "C" or better
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

In this course, students learn basic tap dance vocabulary which is incorporated into traditional steps and dance routines. Rhythmical enjoyment is emphasized.

DAN 105: Beginning Jazz Dance I — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This dance form originated in Africa and has evolved through American social and stage dance. The movement is rhythmical, bold, percussive, and expansive. Basic jazz vocabulary is taught along with body alignment. This course helps to improve overall body control, agility, and coordination.

DAN 106: Beginning Jazz Dance II — 1 Credit

Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: DAN 105 with grade of C or better
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This is a course designed for students with jazz dance background who want to work on proficiency of jazz movement and stylized dancing. Students who have experience equivalent to DAN 105 may contact the instructor for permission to waive the pre-requisite.

DAN 107: Beginning Ballet I — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course provides basic ballet movement vocabulary by associating the French ballet terms with the appropriate execution. Balance, body alignment, flexibility, and overall body control can be developed in this course and students learn how to view performances.

DAN 108: Beginning Ballet II — 1 Credit

Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: DAN 107 with grade of C or better
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course introduces more complex ballet movements and turns. Students who want to improve their proficiency at the barre, centre, and through the space find this course appropriate. Students who have experience equivalent to DAN 107 may contact the instructor for permission to waive the pre-requisite.

DAN 110: Afro-American Dance I — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13 14

This course introduces the basic movements used in American boogie, jazz, Dixieland, modern and Latin dance. The focus of the class is to identify these movements and relate them to their ancestral African and African/American dance heritage.

DAN 111: Popular Dance Forms — 1 Credit

0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course is an overview of popular dances. Club dancing, line dancing, partner and solo dancing are a few examples of the dances that will be studied. This class also presents contemporary popular social dances.

DAN 122: Ballroom Dance I — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

Students learn the basics of good social dance so they can feel comfortable in any dance situation. They learn how to lead, follow, and dance the most popular and most useful dances: fox trot, waltz, swing, cha-cha, rumba, polka and hustle. Designed for those with limited or no experience or for those who wish to review the basics.

DAN 123: Dance Exercise I — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: None

Designed for students who are looking for a slower paced dance exercise course, this choreographed program of stretching and simple dance routines set to various types of music, helps trim and recondition the body while providing an excellent starting or re-entry point for a fitness program. Students are encouraged to develop a total fitness program. Discussion of nutrition and the learning of simple relaxation techniques are also a part of this class where no prior dance or exercise experience is required.

DAN 130: Dance for Musical Theatre — 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: None

This course is designed to familiarize students with basic movement and music vocabulary as applied to dance in musical theatre. Students should complete a beginning level dance course before taking this course.

DAN 180: Dance Appreciation: The World of Dance — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 14

This is an introduction to dance and movement of many of the world's cultures. After learning the socio-cultural relevance of each dance style, students will be encouraged to express themselves through basic movement exercises patterned after the culture being studied. Owing to the nature of dance, a high emphasis will be placed on video and experiential learning and presentation.

DAN 200: Advanced Performance-Dance — 2 Credits

Level II Prerequisites: DAN 101, DAN 105, and DAN 107 with a "C" or better
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course provides the experienced dancer with the tools and language of choreography. Using these tools the student will create and present dance works. Production aspects will be introduced and utilized.

DAN 210: Afro-American Dance II — 1 Credit

Level I Prerequisites: DAN 110, Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13 14

This class is designed to further students' dance vocabulary using basic African/Afro-American movements employed in the boogie, jazz, hip-hop, modern and Latin dance. Emphasis is on building confidence through the use of movement combinations; traditional African/Afro-American movement; exploring solo creation, and learning at least one Afro-American dance. Students who have experience equivalent to DAN 110 may contact the instructor for permission to waive the pre-requisite.

DAN 222: Ballroom Dance II — 1 Credit

Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: DAN 122
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

Students perfect the basics of good social dance so they can excel in any dance situation. They learn advanced patterns in fox trot, waltz, swing, cha-cha, rumba, polka and hustle. They are introduced to tango, mambo and samba. It is designed for those who have previous ballroom dance experience.

DAN 223: Dance Exercise II — 1 Credit

Level I Prerequisites: DAN 123, Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements:None

This course is designed for students who are looking for a medium paced dance exercise course. This choreographed program of stretching and simple dance routines, set to various types of music, helps trim and recondition the body while providing an excellent maintenance or re-entry point for a fitness program. Discussion of nutrition and the learning of simple relaxation techniques are also a part of this class. No prior dance exercise is required, though a moderate level of fitness is suggested. Students who have experience equivalent to DAN 123 may contact the instructor for permission to waive the pre-requisite.

Dental Assisting — DEN

DEN 039: Dental Assistant Review — 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course provides the opportunity for a prospective candidate for a dental assistant credentialing exam to review course materials, gain knowledge about test taking, take a simulated exam, and examine areas of need prior to taking a credentialing exam. The course is open to graduates of the Dental Assisting program and practicing dental assistants.

DEN 102: Infection Control — 1 Credit

7 lecture, 15 lab, 0 clinical, 0 other, 22 total contact hours
Fulfills Core Elements:None

This is a study of microbiology, types of diseases and their transmission, and the application of OSHA guidelines to dentistry. Students gain practical experience in the operation of all disinfectant and sterilization equipment and techniques. This course aids students in the preparation for the Dental Assistant National Board examination in Infection Control.

DEN 106: Biomedical Science for Dental Assistants — 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 16

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

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 16

This is an introductory course in head and neck anatomy. It covers skull and facial bones, masticatory muscles, oral anatomy - hard and soft tissues, anatomical nomenclature, tooth development and morphology, tooth surface annotation, cavity classification, occlusion and malocclusion.

DEN 108: Dental Radiography — 1 Credit

Level I Prerequisites: DEN 102, 106, and 107 with min. grade of "C" and Admission to Dental Assisting Program
12 lecture, 0 lab, 36 clinical, 0 other, 48 total contact hours
Fulfills Core Elements: 7 18

The principles, techniques, safety precautions, and operation of various types of radiographic film and equipment are studied. Students must be admitted to the Dental Assisting Program to register for this course.

DEN 109: Oral Hygiene — 1 Credit

Level I Prerequisites: (COMPASS Reading = 70 or ACS 070 concurrently) and (COMPASS Writing =81 or ENG 091 concurrently)
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 16

This course is designed to give dental assisting students a basic awareness of preventive dentistry. Etiology, prevention and control of dental caries, and oral hygiene instruction is emphasized. Students must be admitted to the Dental Assisting Program (CFDAC) or receive instructor permission to register for this course.

DEN 110: Basic Clinical Dental Assisting — 4 Credits

Level I Prerequisites: DEN 102 with a 2.0 or higher
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course is an orientation to dental assisting. It provides an overview of the history of dentistry, professional organizations, ethics, and the role of the modern dental health team. Students are introduced to the dental operatory, equipment and basic procedures, and the application of OSHA (Occupational Safety and Health Administrations) guidelines used in four-handed dentistry.

DEN 112: Dental Materials — 4 Credits

Level I Prerequisites: DEN 102 and DEN 106 with a 2.0 or higher
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 7

This course is designed to give dental assisting students theoretical knowledge of the uses and properties (chemical and physical) of the most commonly used dental materials. Students will gain laboratory and clinical experience in the manipulation, practical application, and safe use of common dental materials in accordance with OSHA guidelines.

DEN 119: Dental Nutrition 1 Credit

Level I Prerequisites: Admission to the Dental Assisting Program
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 16

This course is designed to give dental assisting students a basic awareness of nutrition in dentistry. The etiology, prevention, and control of dental caries through nutrition and diet analysis are emphasized. Students must be admitted to the Dental Assisting Program or receive instructor permission to register for this course.

DEN 120: Oral Diagnosis Theory 1 Credit

Level I Prerequisites: DEN 102, DEN 106, and DEN 107 with 2.0 or higher
8 lecture, 24 lab, 0 clinical, 0 other, 32 total contact hours
Fulfills Core Elements: 7 16

This theoretical course provides students with the knowledge and techniques used to obtain diagnostic data and the methods of recording this data.Students gain practical experience in common charting techniques and record management in different specialty areas of dentistry.

DEN 128: Dental Radiography Practicum 1 Credit

Level I Prerequisites: DEN 108 with 2.0 or higher
0 lecture, 45 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 18

Students gain experience in exposure methods, processing methods, and mounting techniques.

DEN 129: Oral Pathology and Dental Therapeutics 2 Credits

Level I Prerequisites: DEN 102, DEN 106, and DEN 107 with 2.0 or higher
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 16

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 130A: Oral Diagnosis/Clinical Practicum I 0.5 Credit

Level I Prerequisites: DEN 102, 106, 107, 108, 109, 110, 112 and HSC 131A with a 2.0 or higher
0 lecture, 0 lab, 0 clinical, 60 other, 60 total contact hours
Fulfills Core Elements: 7 16

This course provides students with actual clinical application of all previous knowledge as they gain clinical experience in the WCC Dental Clinic. Students have the opportunity to assist during basic preventive and operative procedures, monitor and record vital signs, apply OSHA guidelines, sterilize instruments, and manage records. This course is graded on a Pass/No Pass grading system. Students who hold a current CPR card from ARC or AHA should contact the instructor to waive the pre-requisite for HSC 131A.

DEN 130B: Oral Diagnosis/Clinical Practicum II 0.5 Credit

Level I Prerequisites: (DEN 102, 106, 107, 108, 109, 110, 112, and HSC 131A) with min. grade of 2.0
0 lecture, 0 lab, 0 clinical, 60 other, 60 total contact hours
Fulfills Core Elements: 7 16

This course provides students with actual clinical applications of all previous knowledge as they gain clinical experience in clinics such as the U of M Dental School. Students have the opportunity to assist during basic preventive and operative procedures, monitor and record vital signs, apply Occupational Safety and Health Administration (OSHA) guidelines, sterilize instruments, and manage records. This course is graded on a Pass/No Pass grading system. Students who hold a current CPR card from ARC or AHA should contact the instructor to waive the pre-requisite HSC 131A.

DEN 131: Principles of Dental Specialties 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 18

This course provides a study of advanced clinical procedures used in dental specialties. Latest concepts in each specialty are presented by dental specialists from the community.

DEN 202: Advanced Clinical Practice 3 Credits

0 lecture, 0 lab, 0 clinical, 280 other, 280 total contact hours
Fulfills Core Elements:None

Students actively participate in a variety of clinical settings. The course is structured according to students' area of interest and geographic access in dentistry. Students become acquainted with a number of office routines, procedures, equipment, and patient and staff relationships. This courses graded on a Pass/No Pass grading system.

DEN 204: Advanced Functions 3 Credits

Level I Prerequisites: Consent required
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

This course is designed to provide dental assisting students with knowledge and skill in performing intra-oral functions identified in the ADA Composite Handout. In Michigan, the legal duties of the Registered Dental Assistant are outlined in the rules of the Michigan State Board of Dentistry, Rule #330. Students must have a current CPR card and a grade of 2.0 in all dental courses or pass the DANB exam to register for this course. Consent of the instructor is required.

DEN 212: Dental Practice Management 4 Credits

Level I Prerequisites: CIS 100
52.5 lecture, 22.5 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7 11

This course is an introduction to the dental business office. It is the study of systems of management used in dentistry, interpersonal communications (written and verbal), basic concepts of third party payment, machines and computer utilization. Students gain actual computer experience in word processing, database, and spreadsheet programs. Students develop skills in interviewing and writing letters of application and a resume. Students who can have experience equivalent to CIS 100 may contact the instructor for permission to waive the pre-requisite.

DEN 230: Alternative Dental Assisting Education Project **9 Credits**
Level I Prerequisites: Passing score on DANB exam
30 lecture, 16 lab, 600 clinical, 0 other, 646 total contact hours
Fulfills Core Elements:None

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 the Dental Assistant National Board Examination. In this course the dental assistant will demonstrate hands on skills that cannot be tested in a written examination. Student will validate clinical, laboratory, radiographic, and business office skills in their offices of employment. This course is graded on a Pass/No Pass grading system.

Drama DRA

DRA 152: Acting for the Theatre I **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9 13

This class is an introduction to acting through improvisation and the presentation of monologue scenes, poetry, and original text. It covers analysis and application of the performance skills needed in stage theatrical performance, including voice projection, character development and analysis, emotional expression, and staging. These skills are emphasized in a studio class setting where students frequently perform in class for each other and receive coaching and direction from the instructor. This course will appeal to anyone interested in developing their acting, presentation, and/or communication skills. All skill levels are welcome.

DRA 160: Movement for Actors **3 Credits**
Level II Prerequisites: DRA 152, DAN 101, and DAN 102 min Grade "C-"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course introduces and familiarizes students with basic stage movement and techniques to increase movement vocabulary.

DRA 167: Theatre Production **2 Credits**
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14

This is a course in which, through tours of area theaters, workshop participation and supervised participation in a campus or off-campus production. The student is exposed to or gain practical experience in one or more of the various phases of the theatre arts: stage managing, lighting design, lighting execution, scenery, publicity, house management and properties. Specific duties to be arranged with the instructor/director.

DRA 170: Stratford Theatre Festival **2 Credits**
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14

Students will travel to Stratford, Ontario to attend plays presented at the Stratford Theatre Festival. The course will appeal to those with an interest in many 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 208: Acting for Theatre II **3 Credits**
Level I Prerequisites: DRA 152 min grade of "C-"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 9 13

This course is a continuation of DRA 152, focusing on the further study and practice of acting techniques, including the performance of poetry, prose, spoken word, monologues, scenes, personal narrative and improvisation.

DRA 209: Acting for Musical Theatre **2 Credits**
Level I Prerequisites: DRA 152 & MUS 204 & MUS 209 (concurrent enrollment allowed in MUS 209) min grade of "C-" for all courses
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

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 concurrently (in the same semester).

DRA 220: Playwriting **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

Students develop playwriting skills and techniques by critiquing published one-acts and through exercises on character, monologue, dialogue and conflict. During the course, students will write a ten to fifteen page play, which will be workshopped by the class. Avenues of production will be discussed for these plays, and when possible, staged readings of some plays will be performed in New Voices Rising at WCC.

Economics ECO

ECO 211: Principles of Economics I **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 10 21 23 24

This is the first half of basic principles of economics. Emphasis is on macroeconomic concepts of national income, fiscal and monetary policy and problems of unemployment, inflation and economic growth. This course is required of all Business Administration transfer students.

ECO 222: Principles of Economics II **3 Credits**
Level I Prerequisites: ECO 211
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 10 21 23 24

This is the second half of Principles of Economics 211. Emphasis is on microeconomic concepts of demand, supply and problems relating to prices and resource allocation. Students who have experience equivalent to ECO 211 may contact the instructor to waive the prerequisite.

ECO 280: International Economics 3 Credits

Level I Prerequisites: ECO 211
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 21 23 24

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.

Education EDU

EDU 201: Field Experience in Teaching and Learning 1 Credit

Level I Prerequisites: PSY 100
Corequisites: PSY 222
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements:None

This is a field experience for students who are enrolled in PSY 222 Human Development and Learning. Through structured experiences in a variety of community settings, students will have the opportunity to examine their beliefs and attitudes about working with children from differing backgrounds, ability levels, and developmental levels. This course will be first offered in Fall 2003.

Electrical & Computer Engineering ECE

ECE 100: Introduction to Engineering and Computers 2 Credits

Level II Prerequisites: Admiss. to Electrical & Computer Engineering Program (ASECE)
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course offers an introduction to the engineering profession with an emphasis on electrical and computer engineering. Engineering ethics, professionalism, and the honor code are also discussed. Students are introduced to digital logic. Laboratory work includes email and Internet applications and an introduction to Excel spreadsheet, Excel Solver, Microsoft Word, and Pspice logic simulation software. Students work in teams on assigned term projects.

ECE 210: Circuits 4 Credits

Level I Prerequisites: MTH 192 and PHY 222 (both with a "C" or better)
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course covers fundamental laws, electrical elements and sources, energy, and power. DC analysis of linear circuits, node and mesh analysis, operational amplifiers and op-amp circuits, Thevenin and Norton theorems, sinusoidal steady-state response and the phasor concept are also discussed. In addition, students learn about introductory concepts on complex frequency, average power in AC circuits, maximum power transfer in circuits and design projects.

ECE 270A: Computer Fundamentals 4 Credits

Level I Prerequisites: ECE 100
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course covers the basic concepts of computer interfacing, sensing, and control integrated with software concepts. Students are introduced to structured programming and C++. Students also learn about computer hardware and software installation and serial communication.

ECE 273: Digital Systems 4 Credits

Level I Prerequisites: ECE 100
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

This course offers an introduction to digital logic. Topics include numbers and coding systems, Boolean algebra with applications to logic systems, Karnaugh and Quine-McCluskey minimization, combinational logic design, flip-flops, sequential network design, and design of digital logic circuits.

Electricity/Electronics ELE

ELE 040: Residential Wiring 2 Credits

0 lecture, 45 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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 095: Electrical Blueprint Reading 2 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 18

This is an introductory level course in reading basic electronic/electrical manufacturing drawings to determine if the hardware complies with the engineering design requirements. Students learn to identify the basic graphical symbols used in electrical/electronic manufacturing drawings. The basic types of technical information contained in each category of manufacturing drawing is studied.

ELE 111: Electrical Fundamentals 4 Credits

Level I Prerequisites: COMPASS Algebra = 46 or MTH 097A
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 6 7 17 20

A basic electricity course that includes both DC and AC circuits. The course has been designed for those students who need an understanding of electrical principles and applications but do not need the theoretical or mathematical depth required for circuit design. Lab exercises deal with many of the practical applications of electricity along with learning to use test equipment for the purpose of circuit diagnosis and troubleshooting.

ELE 118: MS DOS for Technicians 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course introduces students to the use of MS DOS commands and utilities used in the installation and maintenance of computer hardware and networks. Through hands-on experiences, students will examine DOS command syntax and respond to DOS error messages. Students will learn efficient techniques for managing disk drives, files, and directory structures. In addition, students will create and use batch files to automate routine configuration and maintenance tasks. Before taking this course, students should be able to demonstrate basic computer literacy or complete CIS 117.

ELE 134: Motors and Controls 4 Credits

Level II Prerequisites: ELE 111 or ELE 123B or equivalent
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 18 19

Topics include DC motors and generators, alternators, AC motors and typical controls for DC and AC motors. This is a hands-on course with heavy emphasis on laboratory exercises. The prerequisites will be checked by the instructor on the first day of class.

ELE 137: Switching Logic 4 Credits

Level I Prerequisites: COMPASS Algebra = 46 or MTH 097A
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 9 15

This is a beginning course in digital switching logic. Students learn the devices and circuits used to build computers and other digital control equipment. Lecture topics include data codes, digital logic gates and circuits, ladder logic diagrams, and the use of programmable logic controllers (PLCs). Laboratory topics stress breadboarding logic circuits and programming logic circuits using PLCs.

ELE 150: PC Hardware Concepts and Troubleshooting 4 Credits

Level II Prerequisites: CIS 100 or equivalent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 10 11 18 19

Students examine the internal hardware components of PC systems with emphasis on upgrading, troubleshooting, reassembly and disassembly. Topics include operating systems, disk, floppy and CD-ROM drive technology, read-only memory, random-access memory, Basic Input Output Services and devices, monitors, device drivers and computer numbering systems. Emphasis is placed on how these devices work and interact with the rest of the system. Students in the Computer Systems Technology Certificate program must take ELE 118: DOS for Technicians, either before or concurrently with this course, or be able to demonstrate basic computer literacy.

ELE 155: Advanced Computer Concepts and Troubleshooting 4 Credits

Level II Prerequisites: ELE 150 or equivalent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9 11 18 19

This course builds on students' knowledge of computer troubleshooting and takes you through more advanced problems and how to solve them. Through hands-on experiences, students will improve their understanding of and develop specific skills for solving the tough stuff—dead PCs, memory errors, interrupt conflicts, and paralyzed hard drives—to name a few. In addition, you will learn advanced techniques for configuring and troubleshooting the Microsoft Windows operating system. Prerequisites will be checked by the instructor on the first day of class.

ELE 174: ELE Co-op Education I 1-3 Credits

Level I Prerequisites: (ELE 111 and ELE 137) or ELE 150 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

ELE 204: National Electrical Code 4 Credits

Level II Prerequisites: ELE 111 or equivalent
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7 9

This course covers the use of the National Electrical Code as a tool to plan the safe installation of electrical equipment in residential, commercial, and industrial locations. Students calculate required numbers of branch circuits; select sizes of conductors, raceways, fuses, circuit breakers, and boxes; and plan motor circuits, services, and feeders. Other topics include: cardio-pulmonary resuscitation and other safety issues, grounding, GFCI, kitchen circuits, motor controls, local codes, and code changes. Recommended for industrial controls students and those interested in becoming licensed journeypersons or master electricians. Prerequisites will be checked by the instructor on the first day of class.

ELE 211: Basic Electronics 4 Credits

Level II Prerequisites: ELE 111 or equivalent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9

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 216A: Modem Hardware Installation, Configuration & Troubleshooting 2 Credits

Level II Prerequisites: ELE 150 or equivalent
22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 11 18

This course is designed for the beginning user and for those without a technical background. It provides the basic knowledge and skills required to install and operate modem hardware for PCs. Lecture and laboratory topics include the installation, configuration and troubleshooting of modem hardware and software for PCs. Also covered are various communications standards and protocols and PC hardware interfacing to the Internet and bulletin boards and file transfers using modems. Prerequisites will be checked by the instructor on the first day of class.

ELE 220: Modems, Peripherals and Intro to Networking 4 Credits

Level I Prerequisites: ELE 150 and ELE 155
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This is a lecture and laboratory course in the basic knowledge and skills required to install, troubleshoot and operate modems, printers and network hardware for PC's. Topics include an introduction to the theory and practical aspects of Local Area Networks and the installation, configuration and troubleshooting of modems, printers and network hardware for PC's. Also covered are various standards, network architectures and protocols.

ELE 224: Introduction to PLC's 4 Credits

Level II Prerequisites: ELE 137 or equivalent
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 11 18 19

This is a beginning course in programmable logic controllers (PLCs). The course introduces students to the Allen Bradley SLC-500 and PLC-5, A.I. Series, and RSLogix software. Topics include standard relay-type instructions, timers, counters, sequencers, move instructions, and arithmetic operations. This is a hands-on course intended for students in the electronics controls and robotics programs. It is also for electricians, technicians,and engineers who wish to upgrade their skills. Prerequisites will be checked by the instructor on the first day of class.

ELE 225A: Network Installation and Troubleshooting 2 Credits

Level II Prerequisites: ELE 150 or equivalent
22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 11 18

This is a lecture and laboratory course in the theory and practical aspects of Local Area Networks. Major lecture discussions are directed toward network architectures, hardware, operating systems, installation and troubleshooting. Prerequisites will be checked by the instructor on the first day of class.

ELE 254: PLC Applications 4 Credits

Level II Prerequisites: ELE 224 or equivalent
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This is an advanced course which features the Allen-Bradley SLC-500, PLC 5, A.I. Series, and RSLogix software. Topics include conceptual understanding and troubleshooting of PLC systems which utilize data manipulation instructions, program control instructions, data communications, remote I/O, analog I/0, block transfer, and PID process controls. PLC based motion control is also discussed. This course is intended for industrial electronics students, technicians, industrial electricians, and engineers who need to upgrade their skills in the area of PLC applications. Prerequisite will be checked on the first day of class.

ELE 274: ELE Co-op Education II 1-3 Credits

Level I Prerequisites: ELE 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 275: Switching Systems 4 Credits

Level I Prerequisites: ELE 205 (concurrent enrollment allowed)
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 6 7 9 11 19

The theory, operation and maintenance of analog and digital telephone switches is studied. Topics include switch programming, diagnostic procedures, and system trouble shooting. Customer-owned switching systems are emphasized.

ELE 299: Customer Relations 2 Credits

21 lecture, 0 lab, 0 clinical, 0 other, 21 total contact hours
Fulfills Core Elements: 7 9

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
Fulfills Core Elements:None

The Writing Center provides three services. First, students enrolled in English 040, 050, 051, 091, 100, and 111 receive additional practice and/or assignments in developing writing skills in the lab. The practice method and assignments vary from course to course. Second, students can receive help on any writing project from the Center staff. Third, Macintosh computers are available so students may word-process their papers.

ENG 010: Writing Practicum 1 Credit

Level I Prerequisites: Consent required
0 lecture, 15 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course provides individualized instruction. Students may be referred to this course by their instructor to remove a specific deficiency in their writing. Students may enroll in this course to improve writing or receive help in completing writing assignments for English classes or other courses requiring writing. Satisfactory/unsatisfactory grading is used.

ENG 020: English as a Second Language I 8 Credits

Level I Prerequisites: Consent required
120 lecture, 0 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course is designed for students who do not speak or understand spoken or written English. The course covers survival language necessary for minimum functioning in the community. Satisfactory/unsatisfactory grading is used.

ENG 021: English as a Second Language II 8 Credits

Level I Prerequisites: ENG 020
120 lecture, 0 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This class is designed for students who have had some exposure to and/or instruction in English. The course emphasizes survival language. Satisfactory/unsatisfactory grading is used.

ENG 023: High Beginning ESL Reading & Listening — 4 Credits

Level I Prerequisites: ENG 021 or (ESL COMPASS Reading=38 and ESL COMPASS Writing =42 and ESL COMPASS Listening=42)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class is designed as a continuation of ENG 021 and is for students who have had some exposure to and/or instruction in English. This course goes beyond minimal survival English toward communication of daily living. Reading and listening are emphasized. This class can be taken concurrently with ENG 024. Grading follows the satisfactory/unsatisfactory system. This course is the first half of the previous course ENG 022.

ENG 024: High Beginning ESL Grammar & Communication — 4 Credits

Level I Prerequisites: ENG 021 or (ESL COMPASS Reading=38 and ESL COMPASS Writing =42 and ESL COMPASS Listening=42)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class is designed as a continuation of ENG 021 and is for students who have had some exposure to and/or instruction in English. This course goes beyond minimal survival English toward communication of daily living. Grammar and communicative competence are emphasized. This class can be taken concurrently with ENG 023. Grading follows the satisfactory/unsatisfactory system. This course is the second half of the previous course ENG 022.

ENG 028: Beginning ESL Reading — 4 Credits

Level I Prerequisites: ((ESLCOMP Reading=65 and ESLCOMP Listening=67) or (ENG 022 or 023)) and ((ESLCOMP Grammar=63) or (ENG 022 or 024))
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is designed to lay the foundations for reading improvement needed by ESL students. Emphasis is placed on reading for personal 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. On the recommendation of the instructor, this course may be completed in three semesters as ENG 028A, 028B, and 028C. Satisfactory/unsatisfactory grading is used. Students may be placed in this course on the recommendation of the instructor.

ENG 030: Intermediate ESL Grammar — 4 Credits

Level I Prerequisites: ((ESLCOMP Reading=65 and ESLCOMP Listening=67) or (ENG 022 or 023)) and ((ESLCOMP Grammar=63) or (ENG 022 or 024))
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

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. On the recommendation of the instructor, this course may be completed in two semesters as ENG 030A and ENG 030B. Students may be placed in this course on the recommendation of the instructor.

ENG 033: Intermediate ESL Reading — 4 Credits

Level I Prerequisites: ((ESLCOMP Reading=65 and Reg. COMP Reading=36) or ENG 028) and (ESLCOMP Listening=67 or ENG 022 or 023) and (ESLCOMP Grammar=63 or ENG 022 or 024)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course is designed to further develop independent reading comprehension skills for ESL students through reading authentic texts including novels and textbook selections. Emphasis is placed on vocabulary development, active reading strategies, variable reading rates, silent reading and comprehension. On the recommendation of the instructor, this course may be completed in three semesters as ENG 033A, 033B, and 033C. Students must demonstrate a reading level at or above the eight grade level. Satisfactory/unsatisfactory grading is used.

ENG 035: English Pronunciation and Conversation — 3 Credits

Level I Prerequisites: ((ESLCOMP Read=65 and Reg. COMP Read=51) or ENG 028 or 033 can be taken concurr.) and (ESLCOMP Listen=67 or ENG 022 or 023) and (ESLCOMP Gramm=84 or ENG 030 can be taken concurr.)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This intermediate pronunciation and conversation class is for learners of English as a second language. Students practice using English to agree, disagree, invite, and compare. Grammar and vocabulary are reviewed as they relate to the conversations. Some outside reading is required. Satisfactory/unsatisfactory grading is used. The pre-requisites may be taken before or concurrently with this course.

ENG 037: Intermediate ESL Writing — 4 Credits

Level I Prerequisites: ((ESLCOMP Read=65 & Reg. COMP Read=51) or ENG 028 or 033 can be taken concur.) and (ESLCOMP Listen=67 or ENG 022 or 023) and (ESLCOMP Gramm=84 or ENG 030 can be taken concurr.)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class is designed to help students internalize both the grammar and vocabulary that they have been studying by using it to produce well-formed sentences and paragraphs. Writing as communication is emphasized. Satisfactory/unsatisfactory grading is used. The pre-requisites may be taken before or concurrently with this course.

ENG 050: Basic Writing I — 4 Credits

Level I Prerequisites: COMPReading=51 or REA 050 may enroll concurrently
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class is the first course for inexperienced writers. It helps students to gain confidence writing formal English sentences and paragraphs. This course uses the satisfactory/unsatisfactory grading system. Students who want to register for additional credits may take MTH 039, MTH 054, MTH 062, or MTH 090, as appropriate, and/or REA 050 concurrently with this course.

ENG 051: Basic Writing II 4 Credits

Level I Prerequisites: ENG 050 and (COMPReading=51 or REA 050 may enroll concurrently)
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course meets along with an ENG 050 class but has more advanced writing lab assignments. Grading is based on the satisfactory/unsatisfactory system.

ENG 060: Advanced ESL Grammar 4 Credits

Level I Prerequisites: ((ESLCOMP Read=65 & Reg. COMPRead=51) or ENG 033 concur. enroll allowed) and (ESLCOMP Listen=82 or ENG 035 concur. enroll allowed) and (ESLCOMP Gramm=84 or (ENG 030 and (037 concur. enroll allowed)))
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This class is a continuation of ENG 030. More sophisticated forms are studied, including subject/verb inversion, reduced clauses, and complex verb phrases.Special attention is given to the appropriate use of the forms studied. This class uses the pass/no pass grading system. On the recommendation of the instructor, this course may be completed in two semesters as ENG 060A and ENG 060B.

ENG 064: Advanced ESL Reading 4 Credits

Level I Prerequisites: (ENG 033 or (RegCOMP Read=51 & ESLCOMP Read=65)) & (ENG 035 or ESLCOMP Listen=82 concur enroll allowed) & (ENG 060 or ESLCOMP Grammar=94 concur enroll allowed)
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is designed to prepare ESL students for academic readings. Students will develop appropriate vocabulary, reading strategies, and study skills, which will enable them to succeed in occupational and academic classes at the 100 level. This class uses the Pass/No Pass grading system. This course is the first half of the previous course ENG 063.

ENG 065: Advanced ESL Speaking and Listening 3 Credits

Level I Prerequisites: ESLCOMP Listening=83 and Reg COMP Reading=51 and ENG 060 concurr. enroll allowed
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This class is designed to prepare students for active participation in college classes. Understanding lectures, taking notes in class, and participating in class discussion are covered. This course is graded on a Pass/No Pass grading system. Placement in this course may be made by an ESL instructor.

ENG 067: Advanced ESL Writing 4 Credits

Level I Prerequisites: (ESLCOMP Listen=82 or ENG 035 concurr. enroll allowed) & (ESLCOMP Grammar=94 or ENG 060 concurr. enroll allowed) & (Reg Comp Read=70 or ENG 064 concurr. enroll allowed)
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

Students learn to write paragraphs in Academic English. Academic vocabulary, rhetorical structure of English prose, and the writing process are emphasized. This class prepares ESL students for full participation in classes with native speakers. This course is the second half of the previous course ENG 063.

ENG 085: Review of English Grammar 3 Credits

Level I Prerequisites: (COMPASS Writing = 40 or ENG 051) and (COMPASS Reading = 51 or REA 050)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course reviews basic English grammar. It helps students to write sentences more precisely and effectively as well as to understand the principles of our grammatical system. This is not an appropriate course for ESL students. It may be taken prior to or in conjunction with any writing course or a foreign language.

ENG 091: Writing Fundamentals 4 Credits

Level I Prerequisites: (COMPASS Writing = 40 or ENG 051) and (COMPASS Reading = 51 or REA 050)
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 3 7

This course focuses on strengthening the writing skills required of a worker, citizen, or college student. The emphasis in on developing and organizing ideas in long paragraphs and short essays in preparation for college-level writing courses.

ENG 100: Communication Skills 4 Credits

Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 2 3 7 8 9 10

Students receive practice in a variety of writing assignments relevant to their program area. Assignments include letter writing for a variety of situations (e.g., job application, complaint, commendation, courtesy), memos written in response to situations students are likely to encounter on the job, resumes fitted to the student's particular background (work and educational experience), and other writing forms. During the first week of class, students must demonstrate a writing proficiency at the college level. Students must select a writing lab section with this course.

ENG 101: Journalism I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 3 7 8 10

This course is an introduction to understanding the demands and effects of journalism in print media. Techniques of finding, writing, and presenting both news and feature stories are emphasized. Students are expected to find and write various types of stories. They will also be introduced to typical newsroom structure and organization, as well as issues of ethics in journalism.

ENG 107: Technical Communication 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 3 7 8 9 10

This course covers the same topics as in ENG 100 with an emphasis on longer, more complex assignments which simulate work situations. As an introduction to more advanced courses in Technical Communication, this course is a requirement for the Scientific and Technical Communication degree program.

ENG 111: Composition I **4 Credits**
Corequisites: ENG 000
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 2 3 7 8 9 10

This course focuses on developing skills in critical reading, logical thinking, and written composition (from paragraphs to expository essays and documented papers). Reading materials serve as a basis for papers and classroom discussions. Students write both in class and outside themes frequently. Methods of organization and development are emphasized. During the first week of class, students must demonstrate a writing proficiency at the college level.

ENG 115: Scriptwriting for Media **3 Credits**
45 lecture, 0 lab, 45 clinical, 45 other, 45 total contact hours
Fulfills Core Elements:None

In this course students explore basic writing techniques and formats used in scriptwriting programs for a variety of media and purposes. Media formats may include video, television, film, and Internet broadcast for purposes that may be documentary, promotional, commercial, informational, or narrative. This course is a requirement for the Digital Video Film Production program.

ENG 122: Composition II **3 Credits**
Level I Prerequisites: ENG 111 min grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 7 8 9 10

This course is a continuation of ENG 111 and further develops critical reading and logical thinking skills. Students will write argumentative essays using a variety of formats. The research paper is emphasized.

ENG 140: Horror and Science Fiction **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 13 14

This course is a study of science fiction and horror in literature with emphasis on literary, historical, psychological, and social relevance. Short stories, novels, films, and/or nonfiction related to both genres are analyzed and discussed. Specially designated sections may focus on horror, science fiction, subgenres, or major authors.

ENG 160: Introduction to Literature: Poetryand Drama **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 13 14

This course is designed to give an understanding of literature through writing assignments, close reading and discussion of selected works of poetry and drama. Students are encouraged to evolve criteria for assessing the value of literary works.

ENG 170: Introduction to Literature: Short Story and Novel **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 13 14

Students explore short stories and the novel as they provide blueprints for living, self-discovery and recreation. Each student is helped in strengthening reading and writing skills. Readings and discussion consider the cultural relevance of writings, the structural design, and the effect upon the reader. Students are encouraged to evolve criteria for assessing the value of literary works. Special, designated sections of ENG 170 emphasize popular literature, mystery, westerns or images of women in literature.

ENG 181: African American Literature **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 13 14

This course provides a critical analysis of the African-American experience in the world of literature through reading, class discussion and writing assignments. It is an introduction to contemporary African-American literature, letters and thought, as well as a survey of the great works of Afro-American fiction.

ENG 185: Grammar and Usage **3 Credits**
Level I Prerequisites: written test score TOEFL = 500 or computerized test score TOEFL = 173
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7

In this course, students formalize their knowledge of the structure of English. They learn to respect the internal grammar of native speakers and to separate the issues of grammar and usage. Students examine some of the complex problems faced by speakers of English. Placement in this course may be made by an ESL instructor.

ENG 199: Scientific/Technical Communication Internship **1-3 Credits**
Level I Prerequisites: ENG 107 and ENG 108 and Consent required
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 3 7 20

In this course, the student integrates theory and practice by working in an area of professional interest in the technical communication field under the dual supervision of a professional technical communicator and instructor of Scientific and Technical Communication. Students spend 3-18 hours per week in a work setting and one hour per week in conference with the instructor. Note: The college cannot guarantee an internship, since assignment with an employer is required.

ENG 200: Shakespeare **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 7 8 13 14

This course provides introductory reading and discussion of the varieties of Shakespeare's plays: comedy, history, tragedy and dramatic romance. All periods of Shakespeare's work are represented. Wherever possible, the opportunity to view performances, either live or on film, is made available.

ENG 208: Advanced Technical Communication I **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 9 11

In this course, students write professional documents and learn the documentation creation process from beginning to end, including conducting a formal document needs analysis, drafting a detailed project plan and schedule, and producing and testing the document. Working in groups and individually, students will have an opportunity to revise existing documents and create original work for their portfolios. This is a required course in the Scientific and Technical Communication Program and the Internet Professional Program.

ENG 209: Advanced Technical Communication II 3 Credits

Level I Prerequisites: ENG 208
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 3 7 9 11

In this hands-on course, students write and design technical documents for online delivery. Using the latest technology, students design effective online help systems, convert hard copy documents to online formats, and convert existing online help files to HTML formats. This is a required course in the Scientific and Technical Communication program.

ENG 211: American Literature I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 8 13 14 22

The nation's literature from its beginnings to the Civil War are discussed, stressing the major authors of the period. The course relates trends of the period to contemporary problems and readings.

ENG 212: English Literature I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 13 14

The course studies English literature from its origins through the 18th Century. Readings stress the major works and authors from Beowulf to Swift.

ENG 213: World Literature I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 8 13 14

World Literature 213 and 224 is a sequence that attempts an approach to the eternal values of man through literary masterpieces written from the time of ancient Greece to the present.

ENG 214: Literature of the Non-Western World 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 10 13 14 24

This course is a survey of major world literature outside the body of traditional Western European and American literature usually studied in college classes. Typically, the course covers selections from African, Asian, and Near Eastern literature. This course includes an introduction to each culture and explores how the literature reflects that culture.

ENG 222: American Literature II 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 13 14 22

This course is the second half of a two-semester sequence (see ENG 211). It covers the period from the Civil War to the present and relates trends of the period to problems and writings occurring after the Civil War. Major fiction of the period including poetry, drama, short stories and novels as well as literary, social, political and economic trends are part of discussions. Some designated sections focus on contemporary American Literature. Some writing is required.

ENG 223: English Literature II 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 13 14

This course is a continuation of ENG 212. It involves a study of representative writers of the Romantic, Victorian, Modern, and Contemporary periods.

ENG 224: World Literature II 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 8 13 14

This course is a continuation of ENG 213. It explores some of the great literary experiences of the Western tradition since the Renaissance and attempts to show how they have contributed to present cultural heritage.

ENG 225: Advanced Composition 3 Credits

Level I Prerequisites: ENG 122 min grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 7 8 10

The purpose of this course is to help students improve critical thinking, research, and writing — especially persuasive writing — skills introduced in English 111 and English 122. Paper topics emphasize students' field of interest. Students may contact the instructor for permission to waive the pre-requisite.

ENG 240: Children's Literature 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 8 14

This course is a survey of prose, poetry and illustrated books suitable for the preschool, elementary, and early adolescent child. This course is required of students entering elementary education; also for library studies or work, teacher's aide program, nursery and day care work and as general education for parents.

ENG 241: Adolescent Literature 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 3 7 8 14

This course is a survey of prose, poetry and some non-fiction suitable for adolescent readers. It is recommended for students entering upper elementary and high school teacher training programs; also for library science students and as a general education for parents.

ENG 242: Multicultural Literature for Youth 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is a survey of prose, poetry and illustrated books exploring the experience of minority youth in American society suitable for the preschool through early adolescent child. The course is strongly recommended for practicing early childhood, elementary and secondary teachers as well as for students preparing to enter these fields; also for media or library studies work, childcare work and a general education for parents.

ENG 245: Career Practices Seminar 2 Credits

Level I Prerequisites: ENG 100 or ENG 111 min. grade of "C"
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 1 2 3

In this course, students explore the career options available in their chosen fields. Topics include developing career and job-hunting plans, hiring practices, resume preparation, interviewing skills and relationships with colleagues.

ENG 260: Journal Workshop I **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 13

This workshop is for emotionally mature, self-directed people committed to growth and discipline in their writing and in their lives. It offers in-class writing as a means to self-discovery and expression. Students explore movement and continuity of their lives while exploring creative and healing power of symbols. There is a choice of many ways to use writing: biography, mind exploration, growth work, creative expansion, problem solving, renewing faith, celebrating life, affirming commitments. Journals remain confidential. The course may transfer to some colleges. Contact the transfer college to confirm course equivalency.

ENG 261: Journal Workshop II **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 13

This is a continuation of ENG 260, for students who have already completed 260, and who wish to continue to develop their skills and produce additional written work.

ENG 270: Creative Writing I **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 13

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**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 13

Students work on individual writing projects such as a novel, short stories, poetry, film/TV/play scripts in a workshop setting.

Facility Management FMA

FMA 101: Facility Management I **2 Credits**
Level I Prerequisites: (COMPPrealg=24 or MTH 039) and (COMPRead=70 or ACS 070 concurr enrollment allowed) and (COMPWrit=81 or ENG 091 concurr enrollment allowed)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course covers the fundamental principals involved in engineering and building structures. Topics include building design and construction, construction materials, structural systems, the building envelope, roofing systems, interior systems, paint and wall covering systems, plumbing, and HVAC.

FMA 103: Facility Management II **2 Credits**
Level I Prerequisites: (COMPPrealg=24 or MTH 039) and (COMPRead=70 or ACS 070 concurr enrollment allowed) and (COMPWrit=81 or ENG 091 concurr enrollment allowed)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This is a continuation of FMA 101. Topics include operation and maintenance of electrical systems, lighting principles, vertical transport systems, energy management, cleaning management, landscaping and parking, fire protection systems, security, and building operations management administration.

FMA 105: Facility Management III **2 Credits**
Level I Prerequisites: (MTH 039 or COMPASS Prealgebra = 24) and (COMPASS Reading = 70 or ACS 070)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: None

This course focuses on development and improvement of communication skills with senior management. The concepts of strategic planning and management, corporate finance and capital investment, management information systems, resource maximization, and physical asset management are introduced.

FMA 107: Technologies for Facility Management 2 Credits
Level I Prerequisites: (MTH 039 or COMPASS Prealgebra = 24) and (COMP Reading = 70 or ACS 070)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course provides an in-depth study of the technology commonly used in facilities and the skills needed to maximize its use. Maintaining control of new technologies and enhancements and the evaluation of impact of present services and assessment are learned. Topics include facilities technology defined, technology in business operations, telecommunications systems, high support special space, and implementing facility management technology.

FMA 109: Facilities Planning and Project Management **2 Credits**
Level I Prerequisites: (MTH 039 or COMP Prealgebra = 24) and (COMP Reading = 70 or ACS 070)
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course provides an in-depth study of the skills needed to manage a project from start to finish. Topics include identification and rating of user needs, classification of facility projects, design development and review, project implementation, and reporting techniques.

Fluid Power FLP

FLP 111: Fluid Power Fundamentals **4 Credits**
Level I Prerequisites: (COMPReading=70 or ACS 070 concur. enrollment allowed) & (COMPWriting=81 or ENG 091 concur. enrollment allowed)
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 18 19

This is a beginning course in fluid power that deals with the basic principles of hydraulics and pneumatics. Directional valves, pressure controls, flow controls, actuators, and basic pump theory are studied. ANSI and ISO symbols are used to design simple circuits. Disassembly of components and assembly of circuits make up the lab experiences.

FLP 174: FLP Co-op Education I **1-3 Credits**
Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

FLP 213: Hydraulic Controls 3 Credits

Level I Prerequisites: FLP 111
Corequisites: FLP 214
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 8 9 10 18 19

FLP 213 parallels FLP 214 concentrating on the controls used in hydraulic circuits. The course further develops the concepts of directional, pressure, and flow controls covered in FLP 111. Print reading is emphasized, with the addition of modular valves such as cartridge valves and stack valves. Ladder logic and timing diagrams describing the sequencing of events within a control circuit are also covered. Lab time is an integral part of the course.

FLP 214: Basic Hydraulic Circuits 3 Credits

Level I Prerequisites: FLP 111
Corequisites: FLP 213
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 8 9 18 19

FLP 214 parallels FLP 213, concentrating on a variety of hydraulic circuits. This course further develops the concepts of directional, pressure, and flow controls covered in FLP 111. Troubleshooting with hydraulic prints is emphasized, using conventional valving, servo and proportional valves, and modular valves such as cartridge valves and stack valves. Ladder logic and timing diagrams describing the sequencing of events within a control circuit are also covered. Lab time is an integral part of this course.

FLP 225: Fluid Power Motion Control 3 Credits

Level I Prerequisites: FLP 213 and FLP 214
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 5 7 8 18 19

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: FLP 111
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 18 19

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: FLP 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

French FRN

FRN 109: Beginning Conversational French 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

This is a basic French course, mainly conversational in approach, which assumes no previous knowledge of the language. It is chiefly for persons interested in foreign travel through a basic knowledge of spoken and written French. It may also be taken as a preview for students entering the first-year of college French studies or students already enrolled in the first year French course. This course does not satisfy four year college language requirements. This course was previously FRN 120.

FRN 110: Intermediate Conversational French 2 Credits

Level I Prerequisites: FRN 109 or FRN 120 or one semester of college French
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 13 14 24

This course emphasizes the use of spoken French in every day context. Students work on improving aural/oral skills. By semester's end, students should feel comfortable creating with language in the present, past, and future tenses. This course does not satisfy four year college language requirements. This course was previously FRN 121.

FRN 111: First Year French I 5 Credits

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

This is a beginning and transferable course in French which emphasizes the aural-oral approach. Classroom work and language laboratory sessions assist the student in establishing and perfecting basic conversational tools in the language.

FRN 122: First Year French II 5 Credits

Level I Prerequisites: FRN 111
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

This is a continuation of FRN 111. Continuing classroom work and language sessions help the student to acquire basic conversational tools of the language as well as basic informational aspects of the French culture.

FRN 213: Second Year French I 3 Credits

Level I Prerequisites: FRN 122
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14 24

The goals for this course are the acquisition of extensive French lexicon and a comprehensive knowledge of advanced French grammar. Both areas are thoroughly tested and improved by a series of writing and oral assignments. Students who have experience equivalent to FRN 122 may contact the instructor for permission to waive the prerequisite.

FRN 224: Second Year French II **3 Credits**
Level I Prerequisites: FRN 213
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14 24

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 who have experience equivalent to FRN 213 may contact the instructor for permission to waive the pre-requisite.

Geography GEO

GEO 101: World Regional Geography **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 17 20 24

This global survey course covers the world by regions emphasizing the contemporary relationships between developed nations and developing nations. It evaluates how geophysical elements, climates, location, vegetation, and resources interact with culture, economic and political aspects which in turn relates to environmental problems and the accelerating growth of the global population. This course was previously GEO 100.

GEO 103: Cultural Geography **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 24

This course examines the world-wide patterns and characteristics of some of man's major economic activities (agriculture, industry, trade and commerce), on-going processes (urbanization, population growth and movement), institutions (language, religion and the nation-state), and current concerns (health and nutrition).

GEO 212: Geography of the US and Canada **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 17

This course examines the geography of the United states and Canada on a region-by-region basis, identifying the specific characteristics of each region and exploring the relationships among the various regions.

Geology GLG

GLG 100: Introduction to Earth Science **4 Credits**
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 3 7 15 17

This course provides practical training in earth science including work with soils, minerals, rocks, glaciers, volcanism, plate tectonics, meteorology, oceanography, and astronomy. Students take a one-day glacier geology field trip.

GLG 103: Field Geology **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 17

Students examine the processes that have formed and are forming the landscape by studying formations at local sites. Emphasis is placed on environmental impact on the landscape and waters of Washtenaw County.

GLG 104: Weather **3 Credits**
22.5 lecture, 22.5 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 17

Atmospheric processes and phenomena that produce the day-to-day weather changes experienced throughout the world are studied. Emphasis is placed on empirical observation of cloud types, development, and movement. Weather map interpretation and analysis including elementary weather forecasting techniques are presented. Field trips are included. GLG 104 is normally offered only in the spring term.

GLG 109: Common Rocks **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 17

The identification of rocks and minerals is accomplished through laboratory and field studies. Emphasis is placed on Michigan specimens. This course is intended for teachers, students interested in becoming teachers, or interested in rocks and minerals.

GLG 110: Geology of the National Parks and Monuments **2 Credits**
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 2 5 17

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**
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7 15 17

The physical features and processes of the earth are studied. Plate tectonics along with the interpretation of topographic maps and the study of common rocks and minerals are included. A three day field trip is required with food and housing expenses the responsibility of the student.

GLG 125: Historical Geology **4 Credits**
Level I Prerequisites: GLG 100 with min grade of "C"
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 7 15 17

The development of North America as a typical continent is presented including the formation of mountains, the evolution of life, and the identification of fossils. Several field trips are taken. A three day field trip is required with food and housing expenses the responsibility of the student. Students who have experience equivalent to GLG 100 may contact the instructor for permission to waive the pre-requisite.

GLG 202: Earth Science for Elementary Teachers **3 Credits**
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 15 17

This course presents the content and methodology necessary for success in teaching earth science in the elementary school. It includes laboratory activities, laboratory projects, lesson planning and student presentations. Content topics include rocks and minerals, volcanism, mountain building, dinosaurs, and weather. Methodology topics include behavioral objectives, lesson plans, presenting lessons, and student-centered approaches.

GLG 219: Field Studies in Geology 1-4 Credits

0 lecture, 0 lab, 0 clinical, 240 other, 240 total contact hours
Fulfills Core Elements: None

In this course students learn about geology through field experiences either on or off campus. Sometimes travel is involved. Students learn the geology and the geologic history of a given locale, read and/or construct maps, and identify field rocks and fossils. Topics vary in scope, place, and design each semester. Examples include learning the geology of the Grand Canyon by rafting through it for a week or determining the mass, volume and density of the largest boulder on campus. Some semester topics require that students be in good health. Pre- and post-course meetings are held in addition to the field study activities. Students are responsible for their own travel expenses, fees, personal health and life insurance, and any other expenses when the semester topic requires it. Students may be asked to sign appropriate risk and release forms.

GLG 289: Dinosaurs for Educators 3 Credits

Level I Prerequisites: GLG 202
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is designed for future and present teachers to review definitions, old myths and new dinosaur theories. Dinosaur bones and other fossils will be used to understand the evolution, extinction and behavior of dinosaurs. Students will evaluate dinosaur related products, write lesson plans, make a presentation and learn how to clean and prepare dinosaur bones. Field trips are required.

German GRM

GRM 109: Beginning Conversational German 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

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: GRM 109 or GRM 120 or one semester of college German
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

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

75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

This is a beginning and transferable course in German which emphasizes the aural-oral approach. Classroom work and language laboratory 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: GRM 111
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

This is a continuation of GRM 111. Continuing classroom work and language laboratory sessions emphasize the aural-oral approach. Class conversations, short readings, and lab 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

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 11 18

This is an introduction to evolution/principles of typography with concentration on typeface identification, copyfitting, and layout formulation. Assignments investigate lettering as a design element in graphic design and advertising. Students should have proficiency using Mac PCs or take GDT 105 prior to enrolling in this course.

GDT 101: History of Graphic Design 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 20

This course surveys historical and contemporary styles and influences in graphic design through the ages.

GDT 105: Introduction to Mac Graphics 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 11

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

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9 13

This course covers methods in visual communication, ideation, visual perception and problem solving techniques. Exercises explore word-picture-abstract design, visual thinking and communication theories.

GDT 117: Introduction to PageMaker 2 Credits

Level I Prerequisites: GDT 105
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is an introduction to the fundamental tools and techniques of the page layout software application Adobe PageMaker. Working in a laboratory setting, students are escorted through the basic features of the current version of the software and execute tutorial exercises and industry related projects. Students who have experience equivalent to GDT 105 may contact the instructor for permission to waive the pre-requisite.

GDT 118: PageMaker II 2 Credits

Level I Prerequisites: GDT 117
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is a continuation of skill building in using the page layout software Adobe PageMaker?. Students are guided through more advanced features of the current software version, completing tutorial exercises and publication production projects. Students who have experience equivalent to GDT 117 may contact the instructor for permission to waive the pre-requisite.

GDT 125: Introduction to QuarkXPress 2 Credits

Level I Prerequisites: GDT 105
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is an introduction to the fundamental tools and techniques of the page layout software QuarkXPress. Working in a computer laboratory setting, students are escorted through the basic features of the current version of the software, completing tutorial exercises and publication production projects. This course is a requirement in the GDT-Design program. Students who have experience equivalent to GDT 105 may contact the instructor for permission to waive the pre-requisite.

GDT 126: QuarkXPress II 2 Credits

Level I Prerequisites: GDT 125
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is a continuation of skill building in using the page layout software QuarkXPress. Students are guided through more advanced features of the current software version, completing tutorial exercises and publication production projects. This course is a requirement for the GDT-Design program.

GDT 127: QuarkXPress for Print Publishing 4 Credits

Level I Prerequisites: GDT 105 with "C-" or better, or a high school or college Mac-based course or instructor permission
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course covers the fundamental tools and techniques for print publishing with the page layout software, QuarkXPress. Lectures, demonstrations, exercises, and publication projects introduce students to basic software tools and the current version of the software. This course is a requirement for the GDT-Design program. GDT 127 is replacing GDT 125/126 in the GDT curriculum.

GDT 137: Introduction to Illustrator 2 Credits

Level I Prerequisites: GDT 105
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is an introduction to the fundamental tools and techniques of the vector-based drawing software application Adobe Illustrator. Working in a laboratory setting, students are escorted through the basic features of the current version of the software and execute tutorial exercises and industry related projects. This course is a requirement for the GDT-Design and GDT-Illustration programs. Students who have experience equivalent to GDT 105 may contact the instructor for permission to waive the pre-requisite.

GDT 138: Illustrator II 2 Credits

Level I Prerequisites: GDT 137
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

This course is a continuation of skill building using the vector-based drawing software application Adobe Illustrator. Students are guided through the more advanced features of the current software version, completing tutorial exercises and vector drawing projects. This course is a requirement for the GDT-Design and GDT-Illustration programs. Students who have experience equivalent to GDT 137 may contact the instructor for permission to waive the pre-requisite.

GDT 139: Illustrator Graphics 4 Credits

Level I Prerequisites: GDT 105 with "C-" or better or a high school Macintosh-based course or instructor permission
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course covers the fundamental tools and techniques of the vector drawing software, Adobe Illustrator. Lecture, demonstrations, exercises and projects introduce students to basic software tools and the current version of the software. This is a requirement in the GDT-Design and GDT-Illustration programs. GDT 139 is replacing GDT 137/138 in the GDT curriculum.

GDT 140: Photoshop Graphics 4 Credits

Level I Prerequisites: GDT 105 with a "C-" or better, or high school or college Mac-based course or instructor permission
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

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. This course is a requirement in the GDT-Design, GDT-Illustration, and Digital Video/Film Production programs. GDT 140 is replacing GDT 141/142 in the GDT curriculum.

GDT 141: Introduction to Photoshop 2 Credits

Level I Prerequisites: GDT 105
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11 18

This is an introduction to the fundamental tools and techniques of the image-editing software Adobe Photoshop. Students are guided through the basic features of the current version of the software, completing tutorial exercises and image retouching/editing projects. This course is a requirement in the GDT-Design and GDT-Illustration programs. Students who have experience equivalent to GDT 105 may contact the instructor for permission to waive the pre-requisite.

GDT 142: Intermediate Photoshop 2 Credits

Level I Prerequisites: GDT 141
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11 18

This course is a continuation of skill building using the image-editing software Adobe Photoshop. Students are guided through more advanced features of the current software version using tutorial exercises and completing faster imaging projects. This course is a requirement in the GDT-Design and GDT-Illustration programs. Students who have experience equivalent to GDT 141 may contact the instructor for permission to waive the pre-requisite.

GDT 150: Design for the Internet 4 Credits

Level I Prerequisites: (GDT 140 or GDT 142 or PHO 127) Min. grade of "C-"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course provides a thorough introduction to the process of designing and constructing web sites. Students complete exercises and projects using current industry standard web authoring and image editing software. Graphic design principles and methodologies are used to construct a web site and post it on the World Wide Web. Knowledge of vector drawing software is recommended. This course is a requirement in the GDT-Design program.

GDT 174: GDT Co-op Education I 1-3 Credits

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

GDT 201: Technical Graphics 4 Credits

Level I Prerequisites: (GDT 138 or 139) and ART 111 min. grade of "C-"
60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7

This is an exploration into various means for visualizing and communicating technical information. Students, using traditional drawing methods and computer software applications create graphics that are designed to inform, instruct and/or disclose. Course content covers axonometric and perspective drawing, product illustration, instructional graphics using technically based subject matter. This course is required for the GDT Illustration program and is a recommended elective for the GDT Design majors.

GDT 214: Advanced Photoshop 3 Credits

Level I Prerequisites: GDT 140 or GDT 142
40 lecture, 20 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 11 18

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. This course is an approved elective for Graphic Design Technology majors. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

GDT 220: Publication Design 4 Credits

Level I Prerequisites: GDT 100 and (GDT 126 or 127) and (GDT 140 or 142) min. grade of "C-"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 9 11 18 19

This is a computer-based design course focusing on layout and design of publications. Students incorporate the use of grids and other methodologies to design and produce a variety of single- and multi-page publications in black and white , spot and process color. This course is required for all GDT-Design majors.

GDT 222: Commercial Illustration 4 Credits

Level I Prerequisites: ART 111, GDT 112, and (GDT 138 or 139) min. grade of "C-"
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

Traditional rendering illustration methods and 3D Computer illustration software provide students with the basics used by professional illustrators and designers. Comparative techniques of rendering projects are explored using traditional tools and Macintosh computers. Emphasis is placed on developing a strong portfolio. This course is required for GDT-Illustration majors and is recommended as an elective for GDT-Design majors. Students provide supplies and computer disk.

GDT 230: Professional Practices 4 Credits

Level I Prerequisites: 48 credits completed in the GDT program
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 1 11 13

This class prepares students for seeking employment in graphic design/illustration. Topics covered include graphic design career options/specialties, job hunting skills/techniques, freelancing, resume preparation and portfolio preparation, and includes a professional review of student portfolios. This course should be taken during the final semester prior to graduation. Students in the Graphic Design Technology - Illustration Program (APGDTI) Program are required to take this course in the same semester as GDT 260.

GDT 236: Specialized Study 2-4 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements:None

This class provides an opportunity for independent study in a particular area of instruction with faculty supervision. This is a program requirement for Graphic Design Technology-Design (APGDTD) and Graphic Design Technology-Illustration (APGDTI) majors.

GDT 239: Imaging and Illustration 4 Credits

Level I Prerequisites: (GDT 140 or GDT 142 or PHO 127) and (GDT 138 or 139) min. grade of "C-"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 11 19

In this course students create industry related illustrations using vector and raster based software programs. Projects include: charts and graphs, technical renderings, and editorial and promotional illustrations. This is a required course for GDT-Design and GDT-Illustration majors.

GDT 245: Computer-Aided Painting 4 Credits

Level I Prerequisites: GDT 105
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 11 12

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 who have experience equivalent to GDT 105 may contact the instructor for permission to waive the pre-requisite.

GDT 252: Advanced Digital Studio 4 Credits

Level I Prerequisites: GDT 220
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 11 12 13 19

This course offers advanced techniques and applications in computer based imaging and publication design. Topics include design, illustration, and electronic file preparation for offset printing involving integration of several professional graphics software programs. Advanced techniques in software such as Adobe PhotoShop, Adobe Illustrator, and QuarkXpress emphasize creative, real-world applications for graphic design production.Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

GDT 259: Graphic Communication II 4 Credits

Level I Prerequisites: GDT 112, GDT 138, and GDT 142
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

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. This course is a required course for the GDT-Illustration (APGDTI) and a recommended course for GDT-Design (APGDTD) majors.

GDT 260: Animated Graphics 4 Credits

Level I Prerequisites: GDT 137, GDT 141, GDT 150, and GDT 201
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

In this course students create vector-based animated illustrations using an industry standard software application. Assignments cover the spectrum of basic animation techniques, cell animation, animated control functions for applications such as advertising banners, graphic designs, movies, and multimedia productions. Students work toward creating an animated Web site or CD ROM of their student portfolio. This course is a program requirement for GDT-Illustration program majors and should be taken in conjunction with GDT 230 Professional Practices.

GDT 274: GDT Co-op Education II 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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.

Health Science HSC

HSC 100: Basic Nursing Assistant Skills 4 Credits

Level I Prerequisites: Consent of Health Admissions required. Basic skills testing not required.
40 lecture, 24 lab, 0 clinical, 0 other, 64 total contact hours
Fulfills Core Elements:None

This course prepares students for employment in hospitals, long-term care facilities or home care as a Nursing Assistant, using classroom, laboratory and clinical methods for learning basic nursing skills. Students must be at least 17 years of age. Instructor consent is required to register for this course.

HSC 101: Healthcare Terminology 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course is designed to introduce healthcare professionals to terminology used in the workplace. Lecture material is supplemented by independent student computer assignments.

HSC 115: Medical Office and Laboratory Procedures 3 Credits

37.5 lecture, 22.5 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 16

This course consists of lecture on office examining room procedures, sterile techniques, medical emergencies, specimen collection and minor surgery. Laboratory experience applies course material from the lectures.

HSC 128: Therapeutic Nutrition 1 Credit

Level I Prerequisites: HSC 118
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course combines knowledge and application of nutrition in clinical practice. Various diseases and disorders of organ systems and the use of therapeutic nutrition in alleviating the symptoms of these illnesses are addressed. LPN's may have the pre-requisite waived with the permission of the instructor.

HSC 131: CPR/FPR and First Aid 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 16

This course teaches American Red Cross first aid and cardiopulmonary resuscitation for the professional rescuer (CPR/FPR). Students learn adult, child and infant CPR, use of resuscitation masks and how to treat choking emergencies. Additional skills taught include emergency care of sudden illnesses, bleeding, thermal injuries and injuries to muscles, bones and joints. Successful students earn ARC First Aid and CPR/FPR certification cards. This course is graded on a Pass/No Pass grading system.

HSC 131A: Adult, Child, Infant CPR/AED/First Aid 1 Credit

15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 7 16

This course prepares students to perform adult, child, and infant cardiopulmonary resuscitation (CPR). Course objectives follow the new American Red Cross guidelines, for using an automated external defibrillator (AED). The standard First Aid course gives individuals in the workplace the knowledge and skills necessary to recognize and provide basic care for injuries and sudden illness until the advanced medical personnel arrive andtake over. This course is graded using the Pass/No Pass grading system.

HSC 131B: CPR/FPR (for the Professional Rescuer) Review 0.5 Credit

7.5 lecture, 0 lab, 0 clinical, 0 other, 7.5 total contact hours
Fulfills Core Elements:None

This course provides the required annual update and skill practice for persons certified in American Red Cross cardiopulmonary resuscitation for the professional rescuer (CPR/FPR). This course is graded on a Pass/No Pass grading system. Students must have a current CPR/FPR card (1993 guidelines) to register for the course.

HSC 138: General and Therapeutic Nutrition 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: None

This course presents normal nutrition and its relationship to health. It includes a study of the nutrients and nutrition planning guides. Nutritional needs throughout the lifecycle are studied. Concepts of general nutrition are applied to various diet therapies prescribed for common disease states in clinical practice. This course was previously taught in two courses: HSC 118 (General Nutrition) and HSC 128 (Therapeutic Nutrition).

HSC 147: Growth and Development 4 Credits

Level I Prerequisites: ENG 111 with a "C" or better concurrency allowed
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 2 7 8 15 16 21

This course covers the physical, mental, psychological and social growth of the individual from birth to death. The role of the family and theories of death and mourning also are included. This course meets nursing program requirements and is also open to the general student population. This course may transfer to four-year institutions. Contact the transfer college to confirm course equivalency.

HSC 200: Advanced Nursing Assistant Skills 5 Credits

Level I Prerequisites: HSC 100, Basic Skills testing not required
60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours
Fulfills Core Elements: 16 18

This course builds on previously learned basic nursing assistant skills in the care of clients/patients/residents in a variety of health care settings. The course focuses on the acquisition of delegated technical skills required in the provision of treatments and procedures to clients/patients with more acute and/or complex health care needs. Emphasis is placed on the regular reporting and communication between the nursing assistant (delegatee) and registered nurse (delegator). This course is graded on a Pass/No Pass grading system. The pre-requisite may be waived with instructor permission.

HSC 200A: Advanced Nursing Assistant Skills Part I 3 Credits

Level I Prerequisites: HSC 100, Basic Skills testing not required
37 lecture, 33 lab, 0 clinical, 0 other, 70 total contact hours
Fulfills Core Elements: 16 18

This course builds on previously learned basic nursing assistant skills in the care of clients/patients/residents in a variety of health care settings. The course focuses on the acquisition of delegated technical skills required in the provision of treatments and procedures to clients/patients with more acute and/or complex health care needs. Emphasis is placed on the regular reporting and communication between the nursing assistant (delegatee) and registered nurse (delegator). This course is graded on a Pass/No Pass grading system. The pre-requisite may be waived with instructor permission.

HSC 220: Pathophysiology 4 Credits

Level I Prerequisites: BIO 111
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 9 16

The focus of this course is the study of 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. LPN's may have the pre-requisite waived with instructor permission.

Heating, Ventilation, and Air Conditioning HVA

HVA 101: Heating, Ventilation, and Air Conditioning I 4 Credits

Level I Prerequisites: (MTH 151 or COMPAlg=46) & (ACS 070 or COMPRead=70, may enroll concurrently) & (ENG 091 or COMPWrit=81, may enroll concurrently) all courses with min. grade of "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course introduces the concept of thermodynamics and principles of refrigeration. Major units covered include HVAC mathematics, refrigeration systems, refrigerants, refrigerant tables, refrigerant oils, contaminants, dryers, moisture in the air, food preservation, refrigerant components (i.e. compressors, condensers, cooling towers, evaporators, metering devices, motors and accessories), defrost systems, estimating heat loads and commercial refrigeration systems. An overview of domestic and commercial AC systems and components will be provided from an operation and service perspective.

HVA 103: Heating, Ventilation, and Air Conditioning II 4 Credits

Level I Prerequisites: HVA 101
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This is the second course in a series of four that covers basic electrical theory, OHM's law, voltage, amperage, and circuitry as applied to HVAC and refrigeration systems. This course also continues discussion of AC motors and controls and electrical calculations introduced in HVA 101. Common control systems and applications, wiring schematics, and diagrams for both high and low voltage systems are also discussed. Basic diagnostic skills are introduced. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisites.

HVA 105: Heating, Ventilation, and Air Conditioning III 4 Credits

Level I Prerequisites: HVA 103
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course covers common domestic heating systems including fuels and combustion characteristics, furnaces and furnace components and accessories, burner efficiency, and supply systems. Students use charts and mathematical calculations to determine heat load and system sizing principles. Control systems are covered and basic diagnostic skills are discussed. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisites.

HVA 107: Heating, Ventilation, and Air Conditioning IV 4 Credits

Level I Prerequisites: HVA 105
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This is the final course in this series that prepares students to successfully enter the HVAC industry as repair personnel, sales staff, maintenance staff, or apprenticeship. This capstone course provides learning experiences in design, application, and servicing techniques for a wide range of refrigeration and HVAC equipment commonly found in domestic and commercial applications. This course covers basic troubleshooting and diagnostic skill development in a laboratory setting. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisites.

History HST

HST 121: Western Civilization I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 13 20 21 24

This course analyzes the character and evolution of Western institutions and values from the ancient Near Eastern civilizations through the High Middle Ages.

HST 122: Western Civilization II 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 13 20 21 24

This course investigates the evolution and expansion of Western institutions and values from the breakdown of the medieval synthesis in the early fourteenth century through the Congress of Vienna in 1815.

HST 123: The Twentieth Century 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 13 20 21 24

This course focuses on twentieth century world history; that is, fundamental, historical changes within the last one hundred years. Particular attention is paid to the following four critical topics: political and social developments, economics, science and technology, and cultural trends.

HST 150: African American History 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 23

This course examines the history of African-Americans in the United States from 1619 to the present.

HST 201: United States History to 1877 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 10 22 23

This is the first half of the basic, introductory survey of American History. It deals with what happened in the part of North America that became the United States, from just before European contact to the end of the Civil War. Focal points are the interaction of Native, European, and African people, the emergence of political structures and cultural patterns under British colonial rule, the nature and impact of the American Revolution, the economic and social transformation of the United States after the Revolution, the origins and course of the Civil War and the impact of Reconstruction.

HST 202: United States History Since 1877 — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 10 22 23 24

This is the second half of the basic, introductory survey of American history. It examines the United States development into the world's leading economic, political, and military power. Focal points are the era's major political reform movements, the changing nature of American society and culture, the impact of war upon the nation's economy and society, and the increased role played by the United States in world affairs.

HST 215: History of U.S. Foreign Relations — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 23 24

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 8 10 23 24

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 3 8 10 23

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 21 24

This course investigates the origins, development, and legacies of the Nazi onslaught against the European Jews from 1933 to 1945.

HST 240: The History of the Modern Middle East, 1798-Presen — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 10 14 21 24

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.

Hotel-Restaurant Management — HRM

HRM 174: HRM Co-op Education I — 1-2 Credits

Level I Prerequisites: 15 credit hours in the Culinary Arts program, Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Students should contact supervising instructor for permission to register.

Human Services Worker — HSW

HSW 100: Introduction to Human Services — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 21

This course is an introduction to basic human services work including discussion of the various target populations, the types of professions and careers, social organizations and systems, history and ethics and legal considerations. Self-exploration of values is also included.

HSW 150: Helping Approaches for Groups — 3 Credits

Level I Prerequisites: HSW 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course introduces the beginning helper to using groups to promote change. The student learns how to screen candidates for groups, prepare potential members to use the group productively, use basic group techniques, attend to group process, and use specific activities and techniques to achieve desired outcomes. Students who have experience equivalent to HSW 100 may contact the instructor for permission to waive the pre-requisite.

HSW 200: Intro to Interviewing and Assessment Techniques — 3 Credits

Level I Prerequisites: HSW 100 and HSW 150
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 7 8 9 10 21

This course introduces students to basic interviewing skills and to the process of individual needs assessment. These form the basis of developing treatment strategies. Videotaped and/or audiotaped practice are used. Students with equivalent work experience may contact the instructor for permission to waive the prerequisites.

HSW 230: Field Internship and Seminar I **3 Credits**
Level I Prerequisites: HSW 100 and (HSW 200 may enroll concurrently) and 2.0 GPA in all HSW courses and consent required
15 lecture, 0 lab, 180 clinical, 0 other, 195 total contact hours
Fulfills Core Elements: 1 7 8 9

This course integrates students into the working world by having them complete field work in a human service agency. Students have the opportunity to progress from observation, to directly supervised client, to indirectly supervised client contact. The field work is 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. Students must have a GPA of 2.0 or better in all HSW courses and consent of the instructor to register for this course.

HSW 232: Field Internship and Seminar II **3 Credits**
Level I Prerequisites: HSW 100, HSW 200, and HSW 230 with a 2.0 GPA in all HSW courses and consent required
Corequisites: HSW 220
15 lecture, 0 lab, 180 clinical, 0 other, 195 total contact hours
Fulfills Core Elements: 7 8 9

This course integrates students into the working world by having them complete field work in a human service agency. Students complete this internship at a different agency from the internship held in HSW 230 or hold a significantly different role in the same agency. The field work is integrated with course work during a one hour per week seminar. Learning objectives are individualized according to the field placement and career goals of each student. Students must have a GPA of 2.0 or better in all HSW courses and consent of the instructor to enroll in this course.

Humanities HUM

HUM 101: Humanities I - Ancient to Medieval Times **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 14

This course explores the human experience in Western Culture expressed in art, literature, drama, music, and philosophy, from ancient times to the High Middle Ages.

HUM 102: Humanities II - Renaissance to Modern Times **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 14

This course explores the human experience in Western Culture expressed in art, literature, drama, music, and philosophy, from the Renaissance to the present.

HUM 103: Introduction to Humanities - 20th Century **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course focuses on the arts and cultural achievements of the 20th century in the Western World. It explores the political, social, and cultural ramifications of various events (i.e. World War I and II, Freud, technological advances etc.) on the arts. The student will understand the world around them by exploring the arts of the previous century.

HUM 140: Special Topics **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 2 7 10 13 14

Courses offered in this Special Topics series will provide a unique opportunity for alternative learning. Field work (trips to local museums), research projects, classroom discussions, slide lectures, and videos will be utilized to gather a wealth of materials which will allow a comprehensive understanding of a specific culture. Areas of study include the arts and architecture, religions, ways of life and thinking, cultural traditions and achievements and their implications for our contemporary world.

HUM 145: Comparative Religions **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 14 24

This course will examine the basic beliefs and practices of a variety of Eastern and Western religious traditions. During this examination, the similarities and differences between 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**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course presents myths from around the world and it explores the relationship between the development of a culture and its myth. The course also focuses on the similarities of the mythologies of all cultures, while touching on key points from other disciplines including psychology, science, and literature. Influences of these myths into our Western culture will also be traced.

HUM 150: International Cinema **3 Credits**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14

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**
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 3 13 14 18 20 21 22

The development of American cinema from its beginnings in 1896 to the present is studied. The films, viewed in class, are discussed in terms of technique as well as in terms of content. The course relates American cinema to themes in American culture.

HUM 170: Montreal World Film Festival **2 Credits**
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

This brief course is held at the Montreal World Film Festival in late August. Students travel to Montreal to attend screenings of films at the World Film Festival. The course appeals 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 covers round trip train fare from Windsor, dormitory accommodations in Montreal, passes to ten Festival films and the Festival program guide. Orientation sessions are held both on campus and in Montreal.

Industrial Drafting & Design IDD

IDD 111: Drafting Standards and Conventions 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements :None

This course reviews all engineering drawings used in an industrial setting. Students learn to read, sketch, and use various types of engineering documentation. They review and sketch machine drawings, sheet metal layouts, cast and forged drawings, hydraulic and pneumatic schematics, industrial-based electrical schematics and diagrams, piping layouts and schematics, and welding and fabrication drawings. Students learn the national drafting standards as they apply to each discipline and learn to apply any related mathematics as required on drawings.

IDD 113: Theory of Dies 2 Credits

Level I Prerequisites: CAD 113
30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is a survey course designed to introduce the students to four major types of dies and their design components.

IDD 211: Theory of Jigs and Fixtures 2 Credits

Level I Prerequisites: CAD 113
30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

The design and use of jigs and fixtures for purposes of workholding and quality control is studied and applied. Emphasis is placed on the students' ability to develop a practical design including proper locating and clamping principles for given parts. This course was previously IND 212.

IDD 251: Electrical CAD 2 Credits

Level I Prerequisites: ELE 111, ELE 137, and IND 216
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course provides the beginning engineering student with an overview of engineering design, based on a hands-on experience with a client-centered engineering design project. The project includes: 1) a team-based design project, 2) an introduction to the use of computer tools and lab techniques for a design project, and 3) a survey of engineering disciplines involved with concurrent engineering projects.

Internet Professional INP

INP 100: Introduction to the Internet 1 Credit

Level II Prerequisites: Computer literacy
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

In this course, students become familiar with using the Internet, including electronic mail and browsing and searching the World Wide Web. Students learn the finer points of "net etiquette" and understand Internet addresses. Students also discover how copyright law applies to use of the Internet and discover options on how to connect to the Internet from home or a small business. Students need to have computer literacy skills to be successful in this course. This course was previously INP 159.

INP 111: Web Searching 1 Credit

Level II Prerequisites: Computer literacy
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: None

This web searching course focuses on basic and intermediate research using the World Wide Web. Students learn to search various search engines, subject directories, electronic databases, and fee-based sites using basic and advanced search features, and common Internet functions including the web, web browsers, and listserves. In addition, the course includes searching for images on the web, generating a works cited list, attaching a file to e-mail, creating bookmarks, and application of copyright law.

INP 140: Web Site Management 2 Credits

Level I Prerequisites: INP 100 or INP 159 with minimum grade of "C-" or INP Placement Test = Pass
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course focuses on setting up and maintaining a World Wide Web site. Topics include selecting and dealing with an Internet Service Provider (ISP), overall design of Web sites, and putting pages on the site. The emphasis is on practical, efficient techniques for keeping information current using several software tools available for Microsoft Windows. Participants can set up personal or organizational Web sites for class credit. This course was previously CIS 260.

INP 150: Basic HTML 2 Credits

Level II Prerequisites: INP 100 or INP 159 with min. grade of C- or INP Placement Test = Pass
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course is an introduction to Hypertext Markup Language. Students create web pages using a text editor and publish them on a server using an FTP program. This course was previously offered as INP 165 and before that as CIS 165.

INP 152: Web Imaging I 3 Credits

Level II Prerequisites: INP 100 or INP 159 with minimum grade of C- or Pass on INP Placement Test
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is an introduction to the fundamentals, tools, and techniques of web imaging and web design software applications. Students will gain an in-depth understanding of imaging for the web including creating and manipulating images, and optimizing images for the web. Industry-standard software applications for web design will be used in a PC-based classroom. This course was previously offered as INP 143 and before that as GDT 143.

INP 153: Designing User Experience I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

In this course students will learn the principles and practices of user-centered design, as well as the fundamentals of information architecture and interface design for the Web, all of which are aspects of human-computer interaction. The focus will be on critical evaluation of existing websites 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, search, and site mapping.

INP 174: Internet Professional Co-op I 1-3 Credits

Level I Prerequisites: 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
Fulfills Core Elements: None

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 and a faculty co-op advisor's approval.

INP 210: Internet Professional I 3 Credits

Level I Prerequisites: INP 150 or INP 165 with minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

In this course students learn the basic principles involved in developing a web site from concept to completion. Students use existing content and imagery to design, construct, and publish a client web site. Emphasis is placed on preparing usable content for the web, developing an effective user interface, and developing effective navigation systems and page layout based on principles of information architecture. Students develop their HTML skills using both code and industry-standard web authoring software and learn local and global site management techniques. This course was previously offered as INP 200 and before that as GDT 200.

INP 212: Web Imaging II 3 Credits

Level I Prerequisites: INP 143 or INP 152 with minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This advanced course is an in-depth exploration into creating effective and attractive web site designs. Students learn advanced imaging techniques for the web, with a focus on user interface and navigation design. Industry-standard software applications for web design will be used in a computer-based classroom. This course was previously offered as INP 240.

INP 220: Internet Professional II 2 Credits

Level I Prerequisites: INP 100 or INP 159 with minimum grade of C- or INP Placement Test = Pass
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

In this course, students learn about the Internet and its history, core functions and components, standards approval processes, domain names, and IP addresses. Students analyze and validate Web sites; use browser options and plug-ins effectively; become acquainted with newsgroups, chat, FTP, and telnet; and explore options for organizations to connect to the Internet. Students learn about HTML, its strengths and weaknesses, and how to use email attachments and understand their types and limitations. This course was previously offered as INP 160 and before that as CIS 160.

INP 270: Internet Professional III 3 Credits

Level I Prerequisites: (INP 210 or 200) and (INP 220 or 160) min grade of C- or INP160 test = 70%
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is an advanced course in publishing for the Worldwide Web. The focus is on exploring and incorporating advanced technologies into web sites. Topics range from technical to design, including creating advanced tables, frames, and style sheets; troubleshooting code; utilizing and modifying interactive forms and scripts; and discussing and evaluating new and emerging web technologies. Students use both code and industry-standard software for creating and publishing web sites. This course was previously INP 230.

INP 272: Web Animation 3 Credits

Level I Prerequisites: (INP 200 or INP 210) and (INP 143 or INP 152) with minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course introduces students to effective use of animation for the web. Students learn a brief history of animation and how animation has become a growing trend in presenting information on the web. Macromedia Flash is used as the main tool to create web animations. Other forms of animation and software used on the web are also explored and discussed. Students learn when and why animation is used as well as when it should be avoided or minimized. All aspects of animating for the web from concept to storyboarding to final production and implementation is covered. Students gain a working knowledge of Flash as a design, animation, and drawing tool for web design and get valuable experience using the web as a resource tool to gain further animation knowledge, skills, and inspiration. This course was previously INP 255.

INP 274: Internet Professional Co-op II 1-3 Credits

Level I Prerequisites: INP 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 and a faculty co-op advisor's approval.

INP 275: Web Database 3 Credits

Level I Prerequisites: INP 230 or INP 270 with minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

Students learn to distinguish different types of databases and the software available to create them. They learn the principles of relational databases and how databases are connected to the World Wide Web. Students create both simple and relational databases using industry-standard software, put the databases on a Web server, and create the HTML code and scripts to link each database to the Web user. This course was previously offered as INP 283 and before that as CIS 283.

INP 276: Web Animation II 4 Credits

Level I Prerequisites: INP 272 min grade of "C-"
Level II Prerequisites: CPS 120 or CPS 171 min grade of "C-"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

In this course students will learn advanced animation techniques using Macromedia Flash, with a focus on creating effective interactive user interfaces. The class will combine both interface design concepts and basic programming using Actionscript. A major focus of the class will be on the concept of Interaction Design - the process of creating logical, intuitive and interactive user interfaces. This course is intended for students interested in enhancing their Flash skills and who already possess a basic knowledge of programming concepts.

INP 282: Web Audio-Video 3 Credits

Level I Prerequisites: (INP 143 or INP 152) and (INP 200 or INP 210) with a minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course focuses on incorporating audio and video into web sites. Topics covered include studying the following concepts as they relate to the web: capturing audio and video properly, editing audio and video, compression codecs required for optimization, and publishing compressed audio and video. Industry-standard hardware and software for manipulating, compressing and publishing audio and video for the web will be used. This course was previously offered as INP 250.

INP 285: Web Server Security 3 Credits

Level I Prerequisites: CIS 286 with minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course introduces students to Web server security. Using both Linux and Microsoft Windows NT, students learn how to identify security risks, how to configure servers to avoid unwanted access, where to find and how to read system log files, where to turn services on and off, and the basic theory of a firewall. Students also configure both Unix/Linux and NT servers to both allow and disallow various types of access, including password protecting directories, turning file transfer (FTP) on and off, and setting up file system permissions. This course has previously been offered as INP 287 and before that as CIS 287.

INP 290: Internet Professional IV 3 Credits

Level I Prerequisites: INP 270 or INP 230 with a minimum grade of C-
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the capstone course in the INP degree and certificate programs. The focus is on acquiring and applying skills at the site level such as adding elements to pages globally, creating pages dynamically, managing a site, and collecting and evaluating site statistics. Students demonstrate their ability to create and manage web sites by working as development teams to plan, produce, and implement a fully functional client web site throughout the semester. Students also prepare professional online portfolios and resumes for later use in industry. This course was previously offered as INP 260.

Machine Tool Technology MTT

MTT 101: Blueprint Reading and Computerized Drawings 2 Credits

30 lecture, 15 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 18

This course introduces students to mechanical blueprints in both the drafted and CAD versions. Sketching and clay modeling of three dimensional objects will help students interpret orthographic projection drawings. Exercises will include manipulating CAD drawings from a variety of softwares.

MTT 102: Machining for Auto Applications 2 Credits

30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is an introduction to basic machine tool operations. Much emphasis is placed on shop safety. Topics covered include the basic operation of band saws, vertical milling machines, lathes, drill presses, and surface grinders. Other topics include semi-precision and precision measurement tools, materials, heat treating principles, and use of the machinery handbook.

MTT 103: Introduction to Materials 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 18

This course includes an introduction to the basic terms, processes and structures of materials. Hardness testing, classification systems and demonstrations of testing equipment are studied. Principles of heat treatments are studied and demonstrated.

MTT 111: Machine Shop Theory and Practice 4 Credits

Level I Prerequisites: COMPASS Prealgebra=24 or MTH 039)
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 18 19

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: MTT 202 and consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 who have equivalent experience may contact the instructor for permission to waive the pre-requisites.

MTT 202: Machine Tool Operations and Set-Up I 4 Credits

Level I Prerequisites: MTT 111
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course is a continuation of MTT 111. More advanced techniques of measurement, blueprint reading, and tool grinding will be covered. In addition, the students will be introduced to the study of materials and the use of indicators. Also, machine accessories and special

attachments/operations are covered for each of the machine tools. The student's "hands-on" experience will include external and internal threading, surface grinding, E.D.M. machining, and producing a spur gear. Students who have experience equivalent to MTT 111 may contact the instructor for permission to waive the pre-requisite.

MTT 203: Machine Tool Operations and Set-Up II 4 Credits

Level I Prerequisites: MTT 202
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

This course is a continuation of MTT 202. The study of materials will be more advanced along with the techniques of measurement and blueprint reading. The technology of metal cutting, dimensional metrology, and special processes will also be introduced. The student's "hands-on" experience will include multiple lead threading, external grinding, E.D.M. machining, using the C.M.M., and producing a helical gear. Students who have experience equivalent to MTT 202 may contact the instructor for permission to waive the pre-requisite.

MTT 274: MTT Co-op Education II 1-3 Credits

Level I Prerequisites: MTT 174 and consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 010: Arithmetic 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is for students having difficulty with arithmetic. Topics include whole numbers, common fractions, decimal fractions, percents, and applications of arithmetic. Hand calculations are emphasized, however, work with calculators and computers is included. The course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculators.

MTH 011: Solving Equations 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is for students having difficulty solving mathematical equations. Topics include: properties of real numbers, signed numbers, simplifying algebraic expressions, and solving simple equations. Work with computers is used to enhance the understanding of these concepts. The course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculators.

MTH 012: Geometric Figures 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is for students needing to improve their skills with mathematics relates to basic geometric figures. Topics covered include: points, lines, rays, segments, descriptions of geometric figures, polygons, circles, perimeter, solids, area, and volumes. Work with computers is used to enhance the understanding of some of these concepts. This course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculator.

MTH 013: Graphs and Elementary Statistics 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is for students needing to improve their Graphing and Statistical skills. Topics covered include: ratio and proportions, circle graphs, bar graphs, mean mode median, and tabulation data. Work with computers is used to enhance the understanding of some of these concepts. The course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculators.

MTH 014: Interest and Taxes 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is for students needing to improve the application of mathematical skills to practical business situations. Topics covered include: use of formulas, simple and compound interest, notes, loans, installment contracts, taxes, and payroll. Work with computers is used to enhance the understanding of some of these concepts. The course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculator.

MTH 016: Right Triangles 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is for students needing to develop or improve mathematical skills in working with right triangles. Topics covered include: the similar triangle theorem, trigonometric ratios, and the solution of right triangles. Work with computers is used to enhance the understanding of some of these concepts. The course is offered only in an individualized format using a Satisfactory/Unsatisfactory grading system. This course may not be repeated for additional credit. Students are required to supply their own handheld calculators.

MTH 039: Basic Mathematics 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is a review of the basic arithmetic operations common in every-day situations. Topics covered include whole numbers, fractions, decimals, and percents. This course is offered both in a self-paced format and the standard lecture format. The lecture course includes an additional hour of computation guided by the instructor. This course uses the satisfactory/unsatisfactory grading system. Students who want to register for additional credits may take REA 050 and/or ENG 050 prior to or concurrently with this course.

MTH 054: Basic Math for Health Students 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

A study of whole numbers, fractions, decimals, and percentages with mental arithmetic and estimation development. Accuracy and speed of calculations are emphasized with timed tests. Ratio and proportion with applications to health are emphasized. This course is taught with a self-paced mode of instruction designed for students preparing for nursing and pharmacology courses. This course uses the satisfactory/unsatisfactory grading system. Students who want to register for additional credits may take REA 050 and/or ENG 050 prior to or concurrently with this course.

MTH 062: Prealgebra 3 Credits

Level I Prerequisites: MTH 039 or COMPASS Prealgebra=24
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

Prealgebra begins with a review of arithmetic including story problems. Topics include properties of whole numbers, signed numbers, variables, expressions, and equations. This course uses the satisfactory/unsatisfactory grading system. Students who want to register for additional credits may take REA 050 and/or ENG 050 prior to or concurrently with this course.

MTH 090: Occupational Mathematics 3 Credits

Level I Prerequisites: COMPASS Prealgebra = 24 or MTH 062 with min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course provides the computational skills needed to solve problems commonly encountered in various general occupational fields. Students with an interest in business should consider MTH 163, Business Mathematics. Students with an interest in health fields should consider MTH 165, Health Science Mathematics. Topics covered include: arithmetic review, sets, whole and integer number systems, practical algebra, geometry, measurements, the metric system, ratio and proportion problems, graphs, and statistics. This course is offered in a self-paced format and occasionally in the standard lecture format.

MTH 097: Introductory Algebra 5 Credits

Level I Prerequisites: COMPASS Prealgebra=37 or MTH 062 or 090 with min. grade of "C"
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 4 5 7 8 9

The scope and content of this course is equivalent to a first-year high school algebra course. Topics include the real number system, algebraic operations, solving equations, practical applications, inequalities, graphing, systems of equations, polynomial and rational expressions, roots and radicals, and quadratic equations. This is a standard lecture format course. The content of this course is offered in the self-paced format as MTH 097A and MTH 097B.

MTH 097A: Introductory Algebra (first half) 3 Credits

Level I Prerequisites: COMPASS Prealgebra = 37 or MTH 062 or 090 with min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course is the first half of MTH 097. Topics include the rational number system, algebraic operations, solving equations, ratio and proportion, and practical applications. This course is offered only in the self-paced format.

MTH 097B: Introductory Algebra (second half) 3 Credits

Level I Prerequisites: MTH 097A with min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course is the second half of MTH 097. Topics include inequalities, graphing, systems of equations, polynomials, rational expressions, roots and radicals, the real number system, and quadratic equations. This course is offered only in the self-paced format.

MTH 107: Triangle Trigonometry 3 Credits

Level I Prerequisites: COMPASS Algebra = 46 or MTH 097 with a min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course is an introduction to the trigonometric concepts of the triangle. Topics covered include triangles and the basic trigonometric ratios, solving right triangles, laws of sines and cosines, trigonometric ratios of any angle, degrees and radians, and vectors. This course is currently offered only in the self-paced format. Students with very limited math experience may wish to take this course in preparation for MTH 178.

MTH 148: Functional Mathematics for Elementary Teachers I 4 Credits

Level I Prerequisites: COMPASS Algebra = 46 or MTH 097 with min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course is the first of a two-semester 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 teachers of mathematics, rather, it provides the general mathematical background for teachers of all subjects. Topics covered include problem solving, sets, functions, numeration systems, number theory and number systems, applications, and an introduction to probability. This course transfers to EMU's Elementary Education Program.

MTH 149: Functional Math for Elementary School Teachers II 4 Credits

Level I Prerequisites: MTH 148 with min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course is the second of a two-semester 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 teachers of mathematics; rather, it provides the general mathematical background for teachers of all subjects. Topics covered include probability, an introduction to statistics, introductory geometry, congruence and similarity, and measurement concepts. This course transfers to EMU's Elementary Education Program.

MTH 151: Technical Algebra 4 Credits

Level I Prerequisites: COMPASS Prealgebra = 37 or MTH 062 or MTH 090 with min. grade of "C"
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course introduces algebraic and geometric concepts in an applied setting and is primarily for trade and technical students. Topics, which emphasize applications, include: mean, median, mode, percents, ratio and proportion, operating with algebraic expressions, formulas and equations, area, volume, and right triangle trigonometry. This course is offered in both a self-paced format and the standard lecture format.

MTH 152: Technical Geometry and Trigonometry 4 Credits

Level I Prerequisites: MTH 097 or MTH 151 with min. grade of "C" or COMPASS Algebra = 46
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course provides students with the geometric and trigonometric concepts needed to solve problems commonly encountered in technical and trade fields. Topics, which emphasize applications, include basic theorems of geometry, formulas for areas and volumes, trigonometric functions, solutions of right triangles, laws of sines and cosines, and the solution of oblique triangles. This course is offered in both a self-paced format and the standard lecture format.

MTH 160: Basic Statistics 4 Credits

Level I Prerequisites: MTH 097 with min. grade of "C" or COMPASS Algebra = 46
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9 10

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. This course transfers to many four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model.

MTH 163: Business Mathematics 3 Credits

Level I Prerequisites: MTH 062 or 090 with min. grade of "C" or COMPASS Prealgebra = 37
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course provides the mathematical skills needed to solve business application problems and satisfies the math requirements of several one- and two-year WCC business programs. The topics, which emphasize business applications, include operations with whole numbers, fractions, decimals, and percents; measurement or computer mathematics; the metric system; signed numbers; solving equations; ratio and proportion; percent applications; circle, bar, and line graphs; savings and loans; taxes and payroll; and an introduction to statistics. This course is offered in a self-paced format and occasionally in the standard lecture format.

MTH 165: Health Science Mathematics 3 Credits

Level I Prerequisites: MTH 062 or MTH 090 with min. grade of "C" or COMPASS Prealgebra = 37
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course provides the mathematical skills needed to solve problems encountered in health-related fields, and satisfies the math requirements of several one- and two-year WCC occupational programs. The topics, which emphasize health science applications, include basic mathematics; operations with percents; fractions and decimals; geometry; the metric system; the apothecary and household systems; signed numbers; solving equations; ratio and proportion; instrumentation; circle, bar, and line graphs; an introduction to statistics; and exponents and logarithms. This course is currently offered only in the self-paced format.

MTH 167: Math Applications for Health Science 3 Credits

Level I Prerequisites: COMP Algebra=46 or MTH 097 with min grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course provides the mathematical and algebraic skills required to solve calculations in health related fields. The topics which emphasize health science applications include: basic mathematics through algebra, the metric system, the apothecary system, the household system, solving algebraic equations, using proportions; circle, bar and line graphs; an introduction to statistics; mental arithmetic and estimation. Accuracy and speed of calculations are emphasized with timed tests.

MTH 167A: Math Applications for Health Science 2 Credits

Level I Prerequisites: COMP Algebra=46 or MTH 097 with min grade of "C"
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course provides the mathematical and algebraic skills required to solve calculations in health related fields. The topics which emphasize health science applications include; basic mathematics through algebra, the metric system, the apothecary system, the household system, solving algebraic equations, using proportions; mental arithmetic and estimation. Accuracy and speed of calculations are emphasized with timed tests. This is the first half of a two part course. A Compass Algebra score of 46 or better, or MTH 097 with a grade of "C" or better is the prerequisite. High school algebra is not enough to satisfy the prerequisite.

MTH 167B: Math Applications for Health Science 2 Credits

Level I Prerequisites: COMP Algebra=46 or MTH 097 with min grade of "C" and MTH 167A with min grade of "C"
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course provides the mathematical and algebraic skills required to solve calculations in health related fields. The topics which emphasize health science applications include; solving algebraic equations, using proportions; circle, bar and line graphs; an introduction to statistics; mental arithmetic and estimation. Accuracy and speed of calculations are emphasized with timed tests. This is the second half of a two part course. A grade of "C" or better in MTH 167A, in addition to a Compass Algebra score of 46 or better, or MTH 097 with a grade of "C" or better is the prerequisite. High school algebra is not enough to satisfy the prerequisite.

MTH 169: Intermediate Algebra 4 Credits

Level I Prerequisites: MTH 097 with min. grade of "C" or COMPASS Algebra = 46
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

The scope and content of this course is equivalent to a second-year high school algebra course. Topics include: descriptive statistics, the real number system, polynomials, linear equations, inequalities, absolute value, radicals and exponents, complex numbers, quadratic equations and inequalities, linear and quadratic functions, inverse functions, lines and linear systems, non-linear systems, systems of inequalities and determinants. This course is offered in the standard lecture format. The content of this course is offered in the self-paced format as MTH 169A and MTH 169B. See a counselor or advisor to confirm transfer equivalency at four-year institutions.

MTH 169A: Intermediate Algebra (first half) 3 Credits

Level I Prerequisites: MTH 097 with min. grade of "C" or COMPASS Algebra = 46
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course is the first half of MTH 169. Topics include descriptive statistics, the real number system, polynomials, linear equations, inequalities and absolute value. This course is offered only in the self-paced format. The combination of MTH 169A and MTH 169B transfers to some four-year institutions as MTH 169. See a counselor or advisor to confirm transfer equivalency.

MTH 169B: Intermediate Algebra (second half) 3 Credits

Level I Prerequisites: MTH 169A with min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course is the second half of MTH 169. Topics include radicals and exponents, complex numbers, quadratic equations and inequalities, linear and quadratic functions, inverse functions, lines and linear systems, non-linear systems, systems of inequalities, and determinants. This course is offered only in the self-paced format. The combination of MTH 169A and MTH 169B transfers to some four-year institutions as MTH 169.

MTH 176: College Algebra 4 Credits

Level I Prerequisites: MTH 169 with min. grade of "C" or COMPASS Algebra = 66
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course may serve as a terminal college algebra course or, together with MTH 178, provides the necessary background for calculus. Topics include: descriptive statistics, properties of real numbers, relations and functions, graphs, rational and non-rational functions, exponential and logarithmic functions, inverses, conic sections, sequences and series, and the binomial theorem. 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 the current brand and model. This course was formerly MTH 179.

MTH 178: General Trigonometry 3 Credits

Level I Prerequisites: COMPASS College Algebra=46 or MTH 169 with min. grade of "C"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course provides a rigorous background in trigonometry necessary for students intending to study calculus. Topics include: trigonometric functions, inverse trigonometric functions, trigonometric graphs and manipulations, identities, solutions of trigonometric equations, measurement of triangles and arc. This course transfers to many four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model. It is recommended that MTH 176 be taken before or concurrently with this course.)

MTH 180: Precalculus with Trigonometry 5 Credits

Level I Prerequisites: MTH 169 with min. grade of "C" or COMPASS College Algebra = 46
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This course provides the necessary background in college-level algebra and trigonometry for calculus for those with a previous background in the study of trigonometric functions. Those without a trigonometry background should elect MTH 176 and MTH 178 instead. Topics include descriptive statistics, properties of real numbers, relations and functions, graphs, rational and non-rational functions, exponential and logarithmic functions, trigonometric functions, inverses, conic sections, sequences and series, and the binomial theorem. Contact a counselor or check the web page of the college to which you are transferring to confirm course equivalency. A graphing calculator is required for this course. See the time schedule for the current brand and model.

MTH 181: Mathematical Analysis I 4 Credits

Level I Prerequisites: MTH 169 with a min. grade of "C" or COMPASS Algebra = 66
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

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: Mathematical Analysis II 4 Credits

Level I Prerequisites: MTH 176 or MTH 181with min grade of "C" or COMPASS College Algebra = 46
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This course teaches the elementary methods of calculus applied to social science and business. Topics covered include functions, differentiation of algebraic functions, optimization, exponential functions and logarithmic functions and their derivatives, integration, selected applications, and an introduction to multivariate calculus. Some four year institutions accept this course as the calculus requirement of certain of their business and social science programs. A graphing calculator is required for this course. Consult the time schedule for current brand and model.

MTH 191: Calculus I — 5 Credits

Level I Prerequisites: (MTH 176 and MTH 178) or MTH 180 with min. grade of "C" or COMPASS Trigonometry=46
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 4 5 6 7 8 9

This is first-semester college calculus of one variable. Topics include limits, continuity, derivatives, applications of derivatives, elementary integration, and applications of integration. 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. Consult the time schedule for current brand and model.

MTH 192: Calculus II — 4 Credits

Level I Prerequisites: MTH 191 with a min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This is second-semester college calculus of one variable. Topics include the calculus of transcendental functions, techniques of integration, indeterminate forms and improper integrals, sequences and series, parametric equations and polar coordinates. 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 197: Linear Algebra — 4 Credits

Level I Prerequisites: MTH 191 with a min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

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. This course transfers to four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model.

MTH 293: Calculus III — 4 Credits

Level I Prerequisites: MTH 192 with min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

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: MTH 197 and MTH 293 with min. grade of "C"
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 8 9

This is a first college course in elementary differential equations. Topics include techniques for solving ordinary differential equations of order one, techniques for solving linear equations, applications, the Laplace transform, and solving linear systems of equations using eigenvalues. 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.

Mechanical Engineering Technology — MET

MET 100: Presentation and Computer Aided Drawing — 4 Credits

Level I Prerequisites: MTH 152 or COMPASS Algebra = 66
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course is designed to increase the student's competence in using presentation and drawing tools. The principles and applications of computer-aided drafting systems and familiarity with presentation of technical information are emphasized. Use of interactive graphic software, development of input and output skills, and familiarity with software, languages and CAD systems hierarchy are covered. The student is also introduced to three-axis creation of parts and the drafting of auxiliary views, details, assemblies, and solid models. Also covered are AutoCAD and Microsoft Office software. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 110: Statics — 3 Credits

30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

This course represents an introductory, analytical, and practical approach to the principles and physical concepts of statics as they apply to timber construction. The emphasis is on the mastery of basic principles. AutoCAD will be featured as a practical approach to problem solving.

MET 174: MET Co-op Education I — 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 co-op courses. Instructor consent is required to register for this course.

MET 188: Introduction to Engineering Design — 4 Credits

Level I Prerequisites: MET 100
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: None

This course provides the beginning engineering student with an overview of engineering design, based on a ?hands-on? experience with a client-centered engineering design project which includes a team-based design project, an introduction to the use of computer tools and lab/manufacturing techniques, and a survey of engineering disciplines involved with concurrent engineering projects. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 211: Statics and Introduction to Solid Mechanics — 3 Credits

Level I Prerequisites: MET 100 and MTH 191
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 18

This course is an analytical and graphical study of the principles of statics including equilibrium and static equivalence. Also covered is determination of moment and force resultants in members, centroids, and moments of inertia. The course focuses on applications to engineering problems and the analysis of simple machines.

MET 220: Materials and Manufacturing — 4 Credits

Level I Prerequisites: CEM 111
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: None

This is an introduction to materials, material processes and equipment used in the job shop, tool room, or manufacturing facility. The engineering properties of metals, polymers, ceramics and composites are correlated with the internal structure of the materials and the service condition.

MET 221: Computer Aided Mechanical Design — 3 Credits

Level I Prerequisites: MET 100 and MTH 192
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

Basic mechanical design and basic manufacturing processes are used to complete a design/manufacturing project. This course also examines the principles of parametric and feature based three-dimensional CAD models including the applications of creating parts, creating assemblies, creating drawings, and good design practices. Agile design models are created using Pro-Engineer and SEER-DFM and are used to verify system build and test.

MET 239: Design of Machine Components — 3 Credits

Level I Prerequisites: MET 260 and MTH 192 and PHY 211
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

In this course students learn the methods of designing the common machine components applying the principles of mechanics of materials and other engineering sciences. The focus is on the safety, reliability and cost effective issues with emphasis on obtaining computer aided design criteria. Topics include load analysis and material strength overview, fatigue and failure theories, contact stress mechanics, hydrodynamic lubrication, and methods of design and performance analysis of machine members. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 241: Introduction to Dynamics — 3 Credits

Level I Prerequisites: MET 211 and MTH 192
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 18

This course is an analytical and graphic study of the motion of rigid bodies. Vector description of force, position, velocity, and acceleration in fixed and moving reference frames are covered. Also included are kinetics of particles, assemblies of particles and of rigid bodies, energy and momentum concepts, and Euler's equations. Applications to engineering problems with principles of linkages, cams, gears, and displacement, velocity and acceleration analysis of mechanisms are included. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisites.

MET 260: Strength of Materials — 3 Credits

Level I Prerequisites: MET 241 and MTH 192
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 6 18 19 20

In this course, students learn methods for calculation of shear, tensile, and compressive stresses in industrial materials. Topics include energy methods, buckling of columns, bending of beams, shear and torsion. The focus is on design of engineering structures with emphasis on problem solutions techniques, experimental analysis, and computer aided solutions. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 274: MET Co-op Education II — 1-3 Credits

Level I Prerequisites: MET 174 and Consent Required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

In this course students gain skills from a new experience in an approved, compensated position in the field of 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 second of two possible co-op experiences.

MET 278: Finite Element Modeling Fundamentals — 3 Credits

Level I Prerequisites: MET 100
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course provides a general introduction to Finite Element Modeling (FEM). The integration of finite element theory, principles, problem formulation, and computer analysis are introduced along with the use of commercially available finite element software. Emphasis is placed on practical modeling methods, understanding FEM and FEA concepts, interpreting results and obtaining realistic solutions. Attention is give throughout to the modeling of engineering problems. Pre and post processing concepts are discussed in conjunction with the HYPERMESH software. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 278A: Finite Element Modeling Fundamentals — 3 Credits

Level I Prerequisites: MET 100
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course is intended to provide a general introduction to Finite element Modeling (FEM). The integration of finite element theory, principles, problem formulation, and computer analysis are introduced along with the use of commercially available finite element software. Emphasis will be placed on practical modeling methods, understanding FEM and problems, Pre-and post-processing concepts are discussed in conjunction with the HYPERMESH software. Students who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

MET 293: Introduction to Computational Fluid Dynamics — 2 Credits

Level I Prerequisites: MET 100 and consent required
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

The aim of this course is to give students overall appreciation of computational fluid dynamics. The objective is to enable engineers to make informed use of CFD by appreciating the numerical, modeling, and computing issues associated with the current CFD codes. Aerodynamic, fluid dynamic, and thermodynamic examples are covered. FLUENT is used during the course. Students who have experience equivalent to MET 100 may contact the instructor to waive the pre-requisite.

Music MUS

MUS 103: WCC Community Jazz Orchestra — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 1 7 13

This course in performance is open to those who desire to read, improvise and perform. An audition is necessary for registration; the course may be repeated for credit up to a maximum of four times.

MUS 105: Basic Combo and Improvisation — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 7 13

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: Instrumental Combo — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

The Combo course is designed for the musician with some degree of competency to gain experience and skill in performance and improvisation of different styles of music. This is a performing group which offers concerts in the college community and community-at-large.

MUS 108: Musical Theater Performance — 1 Credit

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course provides the experience of participating in a production of a musical or musical revue. Students learn the basic vocal, acting and dance fundamentals necessary to learning their music, staging and choreography. Students receive experience in working with costumes, sets, lighting, props and sound in support of their performance. Students must audition for this course. The course can be repeated once for a total of 2 credits. This was previously MUS 208.

MUS 135: Chorus — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This is a course in performance of a wide variety of choral music. This group is open to all students. It may be repeated for credit up to a maximum of three times.

MUS 136: Gospel Chorus — 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course in gospel choral performance is open to all students. It may be repeated up to a maximum of six times.

MUS 140: Music Theory I — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13

This course is designed to give students, prospective teachers and others a foundation in music theory and reading, concepts of rhythm, tonality, music composition, and other techniques, with the aim of developing musical skills and understanding. No musical experience is necessary. Instructional assignments are adapted to student goals.

MUS 142: Music Theory II — 3 Credits

Level I Prerequisites: MUS 140
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13

This course includes an in-depth study of melodic, harmonic and rhythmic aspects of tonal music related to various styles: European, rock, jazz, ballads and the Blues. The course equips students with a theoretical knowledge to extend and cultivate musical understanding and creativity while giving primary emphasis to the harmonic aspects of music.

MUS 143: Music Composition and Arranging — 2 Credits

Level I Prerequisites: MUS 140
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 13

This class is designed to enable students to develop skills and techniques in music composition, orchestration and arranging for all musical mediums.Students who have experience equivalent to MUS 140 may contact the instructor for permission to waive the pre-requisites.

MUS 146: Songwriting and Creative Improvisation — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13

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

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 8 22

This is a music course for the serious music student and professional musician covering basic agreements, contracts, royalties, copyrights and other legal aspects in the music industry.

MUS 149: Ear Training 2 Credits

Level I Prerequisites: Basic skills testing not required
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7

This course provides an approach to listening to and reading music designed to develop composing and listening skills. It also offers an introduction in training the ear to identify intervals, chords, scales and chord progressions.

MUS 157: Jazz Improvisation 2 Credits

Level I Prerequisites: MUS 105, No basic skills prereqs
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 13

This course in jazz theory provides students with techniques of melody, harmony and rhythm that would excite spontaneous creativity in the jazz style. Students who have experience equivalent to MUS 105 may contact the instructor for permission to waive the pre-requisite.

MUS 170: Computer Applications in Music 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 11 18

This course uses computer applications to provide basic instruction in the theory of computer-aided composition and sequencing. Terminology and theory in midi, digital audio, keyboard synthesis, and sequencing as are covered. Students will apply themselves to basic assignments in the areas cited above and complete individual and group projects.

MUS 175: Audio Recording Technology I 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 18

This course is designed to provide students with the fundamentals necessary for a career-oriented study in creative audio recording. Audio-visual and hands-on experience (professional recording studio access) is provided, as is lecture and studio experience on multimedia recording and mixing techniques.

MUS 180: Music Appreciation 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 10 13 14 24

This introduction to music, using innovative techniques on how to listen to music after becoming acquainted with the socio-cultural values of people who produced the many kinds of music of our world. All music styles are covered. Presentations deal with the growth and development of musical forms and different styles through recording, demonstrations, instructor and student generated demonstrations and projects.

MUS 204: Voice I 3 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 13

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: Basic skills testing not required
Level II Prerequisites: MUS 204 with min. grade of C
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 13 14

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 pre-requisite.

MUS 207: Introduction to American Musical Theatre 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course is an introduction to the uniquely American art form, the Broadway musical. It traces the development of the musical from its roots in operetta, vaudeville and burlesque to the modern-day diversity of today's offerings. It also examines several musicals from different styles and periods, and provides background and resources for repertoire and song selection.

MUS 209: Musical Theatre Song Performance Seminar 1 Credit

Level I Prerequisites: MUS 204
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

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 who have experience equivalent to MUS 204 may contact the instructor for permission to waive the prerequisite. Course may be repeated up to three times.

MUS 210: Functional Piano I — 3 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 13

In this course, students who wish to learn the fundamentals of playing the piano develop the ability to read and execute keyboard music harmonically and melodically. The course covers basic musicianship, fundamentals of piano technique, elementary keyboard harmony, sight-reading, pedal technique, and keyboard facility for use in support of other music classes. The course also offers an introduction to how the piano works, its development, and composers and pianists in various styles.

MUS 211: Functional Piano II — 3 Credits

Level I Prerequisites: Basic skills testing not required
Level II Prerequisites: MUS 210 with min. grade of C
0 lecture, 0 lab, 0 clinical, 45 other, 45 total contact hours
Fulfills Core Elements: 13

This course is a continuation of MUS 210, providing studies beyond the beginning stage. The focus is on individual development in terms of technique, expression, and performance. The course also provides further keyboard skills and historical and theoretical background. This course was previously MUS 213.

MUS 216: Piano: Jazz & Blues — 2 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This piano course is designed to cover such styles as Blues and jazz techniques. Music theory in terms of scales, scale patterns, diatonic chords, available tensions, triads, seventh chords, improvisation, and some simple voicing techniques is covered. This course is for pianists and other instrumentalists who want to develop their keyboard skills.

MUS 225: Drums: Beginning Jazz/Rock — 2 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

Rudimentary skills in jazz drumming are learned; study includes historical styles such as Swing, Be-Bop, and South American and African rhythms.

MUS 233: Beginning Guitar — 2 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

Designed for those with limited or no experience playing the guitar, this course teaches basic chords and techniques as well as folk and Blues songs. Class is keyed to students' interests and needs.

MUS 236: Intermediate Guitar — 2 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course is for students with a basic knowledge of guitar playing. There are opportunities to learn more advanced techniques as well as learning about song arrangements and theory. Class is keyed to students' interests and needs.

MUS 239: Jazz Guitar — 2 Credits

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: 13

This course will focus on the styling if jazz guitar greats like Wes Montgomery, Kenny Burrell, and Joe Pass. Students will examine Montgomery's chord melody solos, the melodic content of his solos, and the use of playing with octaves. Students will learn the importance of Burrell's dynamics sensitivity, and will gain insight into Pass' playing of chords, walking bass lines, and improvising. Through the use of videotape these guitar masters will be introduced into the classroom.

MUS 275: Audio Recording Technology II — 3 Credits

Level I Prerequisites: MUS 175
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 18

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 285: Career Practices in the Performing Arts — 3 Credits

Level I Prerequisites: 8 credits of Performing Arts courses (MUS, DAN, DRA) and Consent required
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This is a career-oriented course for advanced audio technology recording. Students will apply basic theory and recording skills to progressive recording of solo instrumental, small group, and finally multi-track large ensembles. Students will be assigned projects to record such as student and professional groups within the college or externally. Instructor consent is required to register for this course.

MUS 290: Special Projects in Music — 3 Credits

Level I Prerequisites: Minimum of 4 credits in Music, and MUS 147 or MUS 275 or MUS 285
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course provides the student with the necessary skills in advanced production and management or recording technology beyond the basic to moderate levels. Each section of this course will be offered with a specific designation of the project or instruction focus such as: concert production and promotion, advanced audio editing, CD and media product development and marketing. This course is designed to provide professional training in music production and recording technology. Students may contact the instructor for permission to waive the pre-requisites.

Natural Resources NTR

NTR 110: Seasonal D.N.R. Park Off Training 8 Credits

Level I Prerequisites: Consent required
114 lecture, 12 lab, 0 clinical, 0 other, 126 total contact hours
Fulfills Core Elements:None

This is a short course for training Department of Natural Resources Seasonal Parks and Recreation Officers. Individuals must be employed by the DNR and be designated for this training to register for this course.

NTR 120: DNR Enforcement Off Training 11 Credits

Level I Prerequisites: Consent required
158 lecture, 34 lab, 0 clinical, 0 other, 192 total contact hours
Fulfills Core Elements: 22

This course provides training in law enforcement skills for Department of Natural Resources Park and Recreation/Forest Fire Officers. Individuals must be employed by the DNR and be designated for this training to register for this course.

Numerical Control NCT

NCT 112: Introduction to Computerized Machining (CNC) 4 Credits

Level II Prerequisites: MTT 111 min grade "C-", concurrent enrollment allowed
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 11 18

This course develops proficiency in setup and operation of CNC Machining and Turning Centers. Students master CNC machine tool controls through laboratory experiences and the manufacture of pre-programmed parts. Part holding techniques and alignment are included course material. Process planning, tooling for CNC Machine Tolls and inspection of machined products are included in the course.

NCT 121: Manual Programming and NC Tool Operation 5 Credits

Level I Prerequisites: MTT 111 and (NCT 112 concurrent enrollment allowed)
52.5 lecture, 67.5 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 4 5 7 9 11 18 19

This is the first in a two-course study of manual programming of CNC Machining and Turning Centers. Students experience the entire process of part manufacture by processing working drawings of sample parts, writing and editing of programs, set up and operation of CNC machine tools, and inspection of 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 equivalent experience may contact the instructor for permission to waive the pre-requisites.

NCT 174: NCT Co-op Education I 1-3 Credits

Level I Prerequisites: NCT 221 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

Students are placed in an approved industrial work experience to gain skills and knowledge and skills offered by the employer. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience.

NCT 221: Advanced Manual Programming and NC Tool Operation 5 Credits

Level I Prerequisites: NCT 121
52.5 lecture, 67.5 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

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. 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 pre-requisite.

NCT 236: SURFCAM CNC Programming 4 Credits

Level II Prerequisites: NCT 121 min grade of "C-" , concurrent enrollment allowed
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 11

Students learn to use SURFCAM CAD/CAM software to program CNC machine tools. Students will input 2-D geometry for tool path generation for drilling, contours and pocket machining. Students will also input 3-D geometry for the creation of all types of surfaces available within the software. Rough and finish machining is presented for 3 & 4 axis machining of surfaces. Some of the assigned class work is completed by using actual CNC machining for complex parts which contain multiple surfaces.

NCT 249: Mastercam CNC Programming 4 Credits

Level I Prerequisites: NCT 236
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 9 11 12 18 19

Students learn to use Mastercam 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 2-D geometry and 3-D wireframe geometry are practiced. All methods of surface creation are presented and practiced using Mastercam. CNC Machine Tool Programs are created for the manufacture of parts within the software. Drilling, Pocketing and Contour milling are typical 2-D machining applications presented. Students are provided time in the CNC Machine Tool laboratory. Students who have experience equivalent to NCT 236 may contact the instructor for permission to waive the pre-requisite.

Nursing NUR

NUR 039: State Board Preparation 1 Credit

Level I Prerequisites: Consent required
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course assists Nursing Program graduates in preparing for the State Board of Nursing Examination. Emphasis is placed on reviewing learned materials and on taking a national competitive examination. Grading uses the satisfactory/unsatisfactory system. Instructor consent is required for registration in this course.

NUR 101: Introduction to Nursing **1 Credit**

Level I Prerequisites: Admission to Registered Nursing Program (APNURS)
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 1 2

This is the first course in the nursing sequence. Information which provides a foundation for other nursing courses is introduced. Topics include the roles of nurses, personal philosophy of nursing, an overview of nursing history. The course emphasizes associate degree nursing, the Code of Ethics for Nurses, universal precautions, basic legal issues, and medical terminology. Students must gain admission to the Registered Nursing program (APNURS) before registering for this course.

NUR 102: Fundamentals of Nursing **2 Credits**

Level I Prerequisites: NUR 101, 104, 105, BIO 111, and HSC 147 with "C-" and consent required
Level II Prerequisites: Drug Dosage Calc Test = 90%
Corequisites: NUR 103
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9 16

Theory which provides a foundation for other nursing courses is introduced, including Modeling and Role Modeling and the nursing process. Teaching and learning and the concepts of pain, sleep and cultural issues are included.

NUR 103: Fundamentals of Nursing - Clinical Practice **3 Credits**

Level I Prerequisites: NUR 101, 104, 105, BIO 111, and HSC 147 with "C-" and consent required
Level II Prerequisites: Drug Dosage Calculation Test = 90%
Corequisites: NUR 102
0 lecture, 81 lab, 60 clinical, 0 other, 141 total contact hours
Fulfills Core Elements: 4 5 7 9 16

Students will develop skills basic to nursing care in the nursing laboratory. Clinical practice will be in acute and extended care facilities. Emphasis is on assessment skills and implementation of care using standard nursing care plans for commonly encountered nursing diagnoses. The role of the ADN on the health care team is included. This course is graded on a Pass/No Pass grading system. Students must have a current CPR card or pass HSC 131 to register for this course.

NUR 104: Nursing of the Older Adult **1 Credit**

Level I Prerequisites: Admission to Registered Nursing Program (APNURS)
Corequisites: NUR 105
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements: 10 16

This course uses the nursing process to promote self care for adults from mid-life to death. It focuses primarily on healthy, non-institutionalized older adults, their accommodations to normal changes, commonly encountered alterations in health maintenance, prevention and screening programs and national and state health systems. Students must gain admission to the Registered Nursing program (APNURS) before registering for this course.

NUR 105: Nursing of the Older Adult - Clinical Practice **1 Credit**

Level I Prerequisites: Admission to Registered Nursing Program (APNURS)
Corequisites: NUR 104
0 lecture, 0 lab, 45 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 10 13 16

Clinical practice in the nursing of the older adult is provided in community settings. Students explore community resources for the support of the older adult. Opportunities are provided for interaction with the healthy older adult to focus on psychosocial, nutritional, and mobility assessment. This course is graded on a Pass/No Pass grading system. Students must gain admission to the Registered Nursing program (APNURS) and must have a current CPR card or pass HSC 131 to register for this course.

NUR 115: Pharmacology **3 Credits**

Level I Prerequisites: MTH 165 with min. grade of "C" and consent required
Level II Prerequisites: Drug Dosage Calculation Test = 90%
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

The following principles of pharmacology are discussed: drug sources, preparations, and legislation. There is a focus on major drug classifications using a body system approach. Discussion is directed at general mechanisms of action, clinical indications for use, common adverse reactions, general nursing implications, and significant drug interactions. Students are exposed to representative drugs of each class that are frequently used in clinical practice. Students must demonstrate proficiency in calculating drug dosages.

NUR 122: Nursing as a Societal and Interpersonal Profession **4 Credits**

Level I Prerequisites: Admission to the Nursing Transfer Program
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

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. Only students admitted to the Nursing Transfer program (APNURT) may register for this course.

NUR 123: Acute Care Nursing I **3 Credits**

Level I Prerequisites: NUR 102, 103, 115, HSC 118, and (BIO 147 or 237) & (COM 101 or 102) min. grade of "C-" in all courses
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 124
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 8

Students are introduced to principles and skills related to the care of clients/patients with problems of fluid and electrolyte balance, gas transport, inflammation and the immune responses and disorders. Using the nursing process as a framework, students learn preoperative, intraoperative and postoperative nursing care. Various nursing approaches which support an individual's adaptation to stressors are examined.

NUR 124: Acute Care Nursing I - Clinical Practice 2 Credits

Level I Prerequisites: NUR 102, 103, 115, HSC 118, and (BIO 147 or 237) & (COM 101 or 102) min. grade of "C-" in all courses
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 123
0 lecture, 0 lab, 90 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 18

This course builds on and supports skills learned in NUR 103: Fundamentals of Nursing Clinical Practice, and NUR 105: Nursing of the Older Adult Clinical Practice. Students gain increased competence in assessment skills including the integration of diagnostic tests and procedures and their results. Planning individualized nursing care including discharge teaching, based on appropriate nursing diagnoses and collaborative problems will be introduced. This course is graded on a Pass/No Pass grading system.

NUR 131: Nursing of the Childbearing Family 3 Credits

Level I Prerequisites: NUR 102, 103, 115, HSC 118, and (BIO 147 or 237) & (COM 101 or 102) min. grade of "C-" in all courses
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 132
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 6 16

This course introduces basic nursing care of the family during the childbearing process, including the antepartum, intrapartum, postpartum, and normal newborn period. Topics of fertility, infertility, and deviations from the normal maternity and newborn cycle will be addressed. Modeling and Role Modeling (nursing theory), development and characteristics of the human reproductive system, and conception and fetal development knowledge gained in prerequisite courses is part of the foundation for the study of the childbearing family.

NUR 132: Nursing of the Childbearing Family - Clinical Practice 2 Credits

Level I Prerequisites: NUR 102, 103, 115, HSC 118, and (BIO 147 or 237) & (COM 101 or 102) min. grade of "C-" in all courses
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 131
0 lecture, 0 lab, 90 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9

Students use the nursing process to provide care for families in the childbearing cycle within the hospital setting. Use of family and wellness diagnoses is introduced. Emphasis is on health teaching to assist the family in adapting to parenting and recovery from childbirth. Some experience with high-risk mothers and newborns is provided. Students must have a current CPR card or pass HSC 131 before registering for this course.

NUR 201: Transition for LPNs 2 Credits

Level I Prerequisites: Advanced Standing Admission to nursing program and Consent required
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is limited to licensed practical nurses. The course content and competencies selected are those required for the first three semesters of the nursing program which are not generally covered in a practical nursing program. Guided laboratory experience will provide opportunity to demonstrate mastery of psychomotor skills with emphasis on physical assessment and application of the nursing process. Note: The English, Biology and Computer Science requirements in the nursing program must either be taken before or concurrently with NUR 201.

NUR 222: Health Assessment Throughout the Lifespan 4 Credits

Level I Prerequisites: Consent required
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 16

This course provides the beginning knowledge needed to assess the health status of individuals from infancy through old age, including physical, developmental, psychological, cultural and spiritual dimensions. The laboratory experience provides students the opportunity for skill acquisition in history taking, assessment skills, and documentation of findings, focused on the adult client.

NUR 223: Acute Care Nursing II 3 Credits

Level I Prerequisites: NUR 123, 131, HSC 128, & 220 with min. grade of "C-" and NUR 124 & 132 with grade of "P"
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 224
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 8 9 16 18

This course builds on principles and skills learned in NUR 123: Acute Care Nursing, in the areas of fluid and electrolyte balance, biologic defense mechanisms, metabolism/nutrition and elimination patterns. Additional principles introduced include disturbances in the functional patterns of activity/exercise, cognitive/perceptual and sexual/reproduction. Students learn holistic care of individuals with complex medical/surgical problems. The nursing process is used as the integrating framework.

NUR 224: Acute Care Nursing II - Clinical Practice 2 Credits

Level I Prerequisites: Admission to nursing program and NUR 123, 124, 131, 132, HSC 128 and 220 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency=90%
Corequisites: NUR 223
0 lecture, 0 lab, 90 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 8 9 16 18

This course builds on and supports skills learned in NUR 124: Acute Care Nursing I - Clinical Practice with emphasis on progressive development of technical skills. Students learn to care for clients/patients with complex medical-surgical problems in the acute care setting. Nursing process focuses on individualized care planning and evaluation. This course is graded on a Pass/No Pass grading system.

NUR 231: Nursing of Children 3 Credits

Level I Prerequisites: NUR 223, 224, 255, 256, and PSY 100 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency = 90%
Corequisites: NUR 232
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course focuses on the care of children and their families during health and illness. Concepts learned in the previous semesters are applied to develop nursing interventions to care for this population. Principles of nursing care for children of all age groups experiencing health deviations and their adaptation to the stressors of hospitalization are addressed. Promoting health and fostering normal growth and development are emphasized.

NUR 232: Nursing of Children - Clinical Practice 2 Credits
Level I Prerequisites: NUR 132, 223, 255, 256, PSY 100, and PHL 244 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency = 90%
Corequisites: NUR 231
0 lecture, 0 lab, 90 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

Clinical experience focuses on care of hospitalized children and support of their families in the acute care setting. Using the nursing process as a framework, 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 in community settings also is provided.

NUR 255: Mental Health Nursing 3 Credits
Level I Prerequisites: NUR 123, 124, 131, 132, HSC 128, and 220 with a min. grade of "C-" or "P"
Level II Prerequisites: Clin Calc. Competency=90%
Corequisites: NUR 256
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 13 21

This course develops an understanding of common mental health problems and skills necessary to provide basic mental health nursing care to selected clients in hospital or community settings. The central focus is to help the student become more sensitive to human behavior and to use him/herself in a therapeutic manner. Prevention of mental illness and maintenance and restoration of mental health are discussed.

NUR 256: Mental Health Nursing - Clinical Practice 2 Credits
Level I Prerequisites: NUR 123, 124, 131, 132, HSC 128, and 220 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency = 90%
Corequisites: NUR 255
0 lecture, 0 lab, 90 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 9 13 21

This is the clinical component of Mental Health Nursing and should be taken concurrently with NUR 255. Mental health nursing concepts are applied in hospital and community situations. Students gain experience with current methods of prevention, maintenance and treatment. This course is graded on a Pass/No Pass grading system.

NUR 261: Transition to Graduate Nurse Role 1 Credit
Level I Prerequisites: NUR 132, 223, 255, 256, PHL 244, and PSY 100 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency = 90%
Corequisites: NUR 262
15 lecture, 0 lab, 0 clinical, 0 other, 15 total contact hours
Fulfills Core Elements:None

This course assists students in planning the transition from the classroom to employment. Principles of management including delegation, quality assurance, cost effectiveness, and risk management are emphasized. Information useful in securing employment, membership in professional organizations, continuing education, and appropriate use of the Internet for the nursing professional will also be presented. This course meets two hours per week for half of the semester.

NUR 262: Transition to Graduate Nurse Role - Clinical Practice 4 Credits
Level I Prerequisites: NUR 132, 223, 255, 256, PHL 244, and PSY 100 with min. grade of "C-" or "P"
Level II Prerequisites: Clin. Calc. Competency = 90%
Corequisites: NUR 261
0 lecture, 0 lab, 180 clinical, 0 other, 180 total contact hours
Fulfills Core Elements: None

This course is intended to integrate students into the working role. Experience is provided for each student to function cooperatively with members of the health care team. Attendance at one continuing education program is required. Students will be introduced to delegation and the teamleading role.

Pharmacy Technology PHT

PHT 100: Introduction to Pharmacy and Health Care Systems 4 Credits
Level I Prerequisites: Admission to the Pharmacy Technology Program
Corequisites: PHT 101 and 103
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7

In this course students become familiar with health care systems and various pharmacy systems provided within those systems. The role of the pharmacist and technician in providing pharmaceutical care is studied. Students gain an understanding of the interrelationships between pharmacy and technological advances, pharmacy business practices and the clinical applications of pharmaceuticals in patient care. Discussion includes legal and ethical responsibilities.

PHT 101: Pharmacology for Pharmacy Technicians 4 Credits
Level I Prerequisites: Admission to the Pharmacy Technology Program
Corequisites: PHT 100 and 103
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 16

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: Admission to the Pharmacy Technology Program
Corequisites: PHT 100 and 101
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 4 5

Applications of pharmaceutical dosage calculation are presented in this course. Accuracy of calculations is stressed to assure that the patient receives the correct dose. This course prepares students for second semester laboratory and clinical course work.

PHT 140: Pharmacy Prescription Processing 2 Credits

Level I Prerequisites: (PHT 100, PHT 101, and PHT 103 with a 2.0)
Corequisites: PHT 150 and 198
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 11

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: PHT 100, PHT 101, and PHT 103 with a 2.0
Corequisites: PHT 140 and 198
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 8

In this course, students gain knowledge and experience in ambulatory pharmacy prescription processing, nonsterile compound product preparation and institutional pharmacy prescription processing. Discussion includes drug information resources, telephone communication skill, and parenteral and enteral nutrition. 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: PHT 100, PHT 101, PHT 103, PHT 140, PHT 150, and PHT 198 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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. Instructor consent is required to register for this course.

PHT 198: Pharmacy Experience 4 Credits

Level I Prerequisites: PHT 100, PHT 101, and PHT 103 with a 2.0 or higher
Corequisites: PHT 140 and 150
0 lecture, 0 lab, 360 clinical, 0 other, 360 total contact hours
Fulfills Core Elements:None

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 obtain experience with ambulatory care and acute care pharmacy skills that can be applied to a wide variety of pharmacy practice. This course is graded on a Pass/No Pass grading system.

PHT 274: PHT Co-op Education II 1-3 Credits

Level I Prerequisites: PHT 100, PHT 101, PHT 103, PHT 140, PHT 150, PHT 198, PHT 174
Level II Prerequisites: and consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 10 14

The course introduces the general nature of philosophical thought, its basic methods, problems and goals. It includes representative philosophers and such classic philosophical problems as the meaning of existence, the nature of reality, criteria of morality and the nature of the human mind. The class also uses philosophical concepts to help understand oneself, other people and the world around us, and focuses on formulating and defending individual viewpoints and developing personal skills in abstract thinking. An honors section is sometimes scheduled for this course.

PHL 102: History of Philosophy 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course emphasized the historical development of philosophy. It begins by examining the early roots of philosophy in ancient Greece, and proceeds through the medieval and modern periods, concluding in the work of contemporary philosophers. Special attention will be paid to the development of empiricist and rationalist thought during the modern period. The philosophers to be studied may include Plato, Aristotle, Anselm, Augustine, Locke, Hume, Berkeley, Descartes, Malebranche, Spinoza, Leibinitz, William James, Sartre, Wittgenstein, and Quine.

PHL 120: Philosophy of Work 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 10 13 14 22

The purpose of this course is to help students to explore all the philosophical dimensions of 'work;' to cultivate critical thinking about a number of work-related concepts; to lead students to an understanding of a myriad of traditional, contemporary, and challenging perspectives on the nature, meaning, origin, and value of work; and finally to help students to form their own work-related beliefs with which they can lead more meaningful lives.

PHL 123: Critical Thinking 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 10

This course focuses on the practical side of logic and critical thinking. Students are expected to develop the ability to recognize and construct arguments of all kinds, and to identify and then correct errors in their reasoning. If some formal logic is included, it is used primarily as a tool for critical thinking in everyday life. Other topics include: the difference between thinking objectively and subjectively (and between thinking and feeling), overcoming prejudices, and learning how to learn.

PHL 200: Existentialism 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 8 9 10 13 14

A general introduction to the existentialist tradition of philosophy is provided as it is presented in the works of such representative thinkers as Nietzche, Kierkegaard, Heidegger, Sartre and Camus. Special attention is paid to major existentialist themes; for example, authentic existence, integrity, freedom, anxiety, non-being, melancholy, death, guilt, conscience and values.

PHL 205: Ethics 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 8 9 10 14 22

This course provides an overview of the discipline of ethics. Theories used to assist in ethical decision-making will be discussed, as will the relationship between fact and value. To assist in the understanding of the concepts and theories examined, these will be applied to current ethical debates surrounding issues such as abortion, euthanasia and assisted suicide, capital punishment, sexuality, and affirmative action.

PHL 244: Ethical and Legal Issues in Health Care 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 14

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. These models will involve the use of philosophical concepts as well as values clarification exercises. This course also provides and overview of legal theory and responsibility as it applies to the health care context, with an emphasis on professional negligence, and an introduction to different aspects of moral psychology. Topics to be discussed will include patient rights, informed consent, confidentiality, experimentation procedures, genetics, treatment of impaired newborns, euthanasia and assisted suicide, and HIV/AIDS. Special issues surrounding moral and legal responsibilities toward colleagues will also be covered.

PHL 250: Logic 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 8 9 10 15

This course offers an introduction to the nature of logical reasoning, especially as found in examples of everyday thought, and studies the role of language in reasoning and communication, the influence of emotions on logical thinking and the nature of inductive as well as deductive reasoning. Emphasis is on developing habits of good reasoning, as well as the ability to recognize and avoid bad reasoning.

Photography PHO

PHO 090: General Photography 2 Credits

Level I Prerequisites: (COMPRead=70 or ACS 070 may enroll concurrently) and (COMPWrite=81 or ENG 091 may enroll concurrently)
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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 and Environment 3 Credits

Level I Prerequisites: (COMPRead=70 or ACS 070 may enroll concurrently) and (COMPWrite= 81 or ENG 091 may enroll concurrently)
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This is a study of the methods of documenting various types of environments with the camera. This includes the recording of current environmental situations as well as presenting suggestions for improving undesirable conditions. Students must have their own 35mm or roll film camera and previous photo experience.

PHO 103: History of Photography 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 13 14 20

This course is a study the chronology of photographic processes, the progression of social uses of the medium, and the history of photography as a technology and an art form.

PHO 111: Photography I 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 13

This is a first-term course in basic photography including darkroom work. Areas of study include: camera operation, lighting and composition, laboratory equipment and procedures, chemical mixing and handling, black and white film and print processing, and final presentation techniques. Students must have an adjustable camera and anticipate a cost of approximately $100 for course materials.

PHO 116: Studio Portraits 3 Credits

Level II Prerequisites: PHO 117
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 13

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 3 Credits

Level II Prerequisites: PHO 111
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course is a comprehensive, hands-on overview of student photography including medium-format cameras, tungsten lights, and electronic strobes. Students become acquainted with a variety of photographic media such as Polaroid type 669 instant film, tungsten and daylight E-9 color film emulsions, and high-end digital image capture.

PHO 122: Photography II — 4 Credits

Level II Prerequisites: PHO 111
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

This course builds on skills acquired in Photography I. Areas of study include medium format camera operation, advanced black and white film processing and printing techniques, and further investigation and control of lighting conditions. Emphasis is placed on using advanced photographic techniques for visual problem solving. Students will need to purchase film, paper, and other supplies.

PHO 124: Color Photography — 4 Credits

Level II Prerequisites: PHO 111 and PHO 127
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

This is a comprehensive overview of color photography, designed to teach students to create photographs with strong color, composition, and impact. Students become more proficient with the mechanical aspects of various cameras, as they simultaneously become acquainted with color photographic materials and color theory of light. Students utilize traditional color transparency and color negative films, film scanners, digital cameras, and ultimately print images by means of various digital output devices.

PHO 127: Digital Photo Imaging I — 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 11 12 18 19

This course is designed to provide photography majors with a thorough introduction to current digital imaging technology as it relates to the production of photographic imagery. Through the use of digital cameras, scanners, printers and photo imaging software, students explore the world of the electronic darkroom. Prior computer experience is recommended but not required. Students must purchase printing and data storage materials. This course is required of photography majors. It is recommended that students take PHO 111 prior to this course.

PHO 129: Black and White Digital Imaging — 3 Credits

Level II Prerequisites: PHO 127 or GDT 142
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course explores a variety of methods and strategies for making black and white and toned images using digital processes. Students learn to compare inkjet and silver prints, digitize film for monochrome processing, capture B&W images with digital cameras, convert color images to monochrome, and utilize a variety of printing technologies. Students should take PHO 127 or the equivalent experience prior to taking this course.

PHO 174: PHO Co-op Education I — 1-3 Credits

Level I Prerequisites: Consent required
Level II Prerequisites: PHO 111
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements:None

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 210: Alternative Processes — 3 Credits

Level II Prerequisites: PHO 122
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9 13

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 II Prerequisites: PHO 111
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5

This course introduces students to monorail and flatbed cameras in both 8x10 and 4x5 formats. Students learn to process the film in deep tanks, and to load and process Polaroid film. Other topics include the use of perspective and depth of field controls, correctly using shutter and aperture of a large format lens, the darkcloth, magnifier, film holder, tripod and filters. Also included is a discussion of color negative and positive films. Students are required to purchase a photographic loupe, film and paper.

PHO 212: Large Format Photography II — 3 Credits

Level II Prerequisites: PHO 211
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course continues the exploration of large format photography. Topics include formats other than 4x5 roll film, contact printing, advanced methods of focus and perspective control, zone system controls, and various film types. Students are expected to pursue individual projects.

PHO 216: Environmental Portraiture — 3 Credits

Level II Prerequisites: PHO 117
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

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 II Prerequisites: PHO 111
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 9 13

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 II Prerequisites: PHO 117 and PHO 127
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 7 8 9

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 225: Digital Cameras 3 Credits

Level II Prerequisites: PHO 127
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 11 18 19

This course explores the current technology in digital cameras and their applications to a variety of photographic areas. Topics include the features, operation, and application of amateur and professional digital cameras. Students learn proper lighting methods for digital capture, both with natural and artificial lighting. In addition, they learn to create QuickTime movies of still objects. Students with experience equivalent to PHO 127 may contact the instructor for permission to waive the pre-requisite.

PHO 227: Photojournalism 3 Credits

Level II Prerequisites: PHO 111
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

In this course students receive a variety of photographic assignments involving newsworthy events, contemporary social issues, and human interest stories. Students work with black and white negative and color transparency films. An introduction to digital imaging technologies as they relate to photojournalism is included in the course. Students must own a manual electronic flash.

PHO 228: Digital Photo Imaging II 4 Credits

Level II Prerequisites: PHO 127
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

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 pre-requisite.

PHO 230: Portfolio Projects 3 Credits

Level I Prerequisites: Instructor consent required
Level II Prerequisites: PHO 111, 117, 122, 124, and 127 with min. grade of "C-"
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 8

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. Permission of instructor required for registration.

PHO 231: Portfolio Seminar 4 Credits

Level II Prerequisites: PHO 122, PHO 127, and PHO 211
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: None

Students who are nearing completion of the program will develop a professional portfolio, resume, and query letter in this course. Contact is made with a potential employer, client or transfer school. Professional critiques will be conducted on individual portfolios. Students with equivalent experience may contact the instructor for permission to waive the pre-requisites.

PHO 274: PHO Co-op Education II 1-3 Credits

Level I Prerequisites: PHO 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 PEA

PEA 102: Cardiovascular Training 1 Credit

Level I Prerequisites: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements:Basic skills testing not required

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: None
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements:None

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: PEA 103, Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: None

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: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements:None

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: Basic skills testing not required
0 lecture, 0 lab, 0 clinical, 30 other, 30 total contact hours
Fulfills Core Elements: None

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.

Physics PHY

PHY 059: Fundamentals of Physics 3 Credits

Level I Prerequisites: College Level Entry Scores
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is a course for students with no previous physics background. The emphasis is on acquiring the basic conceptual understanding necessary to succeed in later courses. The course is recommended for those students wishing to improve their physics background before taking 100 level physics courses, or students desiring an exposure to physics. Physics topics focus on mechanics and include motion, force, momentum, energy, rotation, and gravity.

PHY 100: Physics for Elementary Teacher 4 Credits

60 lecture, 30 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements:None

In this course students study the basic laws governing the physical universe. This course helps prospective educators learn to explain everyday physical phenomena in terms elementary students can understand. Students also learn to provide materials and instructions for hands-on activities that help students construct their own picture of our physical universe.

PHY 105: Conceptual Physics 4 Credits

Level I Prerequisites: MTH 090 with min. grade of "C" or COMPASS Prealgebra score = 37
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 5 7 9 15 17 18

Designed for both transfer and vocational students with no physics experience, but desiring a working knowledge of physics, PHY 105 surveys the major topics of motion, heat, waves, electricity, magnetism, light, and atomic energy using a conceptual approach with a minimum of mathematics.

PHY 110: Applied Physics 4 Credits

Level I Prerequisites: MTH 090 with min. grade of "C" or COMPASS Prealgebra = 37
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 15 18

Technical-Vocational students with no previous experience with physics should take this course to fulfill their program requirements. Topics covered are: properties of matter, motion, force, energy, machines, fluids, and heat. Laboratory exercises give students an opportunity to test theoretical principles.

PHY 111: General Physics I 4 Credits

Level I Prerequisites: MTH 169 with min. grade of "C" or COMPASS Algebra = 66
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 11 15 18

The topics of mechanics, wave motion and heat are presented to preprofessional and liberal arts students using algebra and trigonometry. Open Physics Laboratory exercises supplement students' understanding of the topics covered. PHY 111 usually represents the first part of a two-semester sequence in algebra-based physics required by many programs.

PHY 122: General Physics II 4 Credits

Level I Prerequisites: PHY 111 min. grade "C"
45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 4 5 7 9 11 15 18

As the second part of a two-semester sequence in algebra-based physics, PHY 122 includes the topics of electricity, magnetism, light, and atomic physics. Open Physics Laboratory exercises are included to assist students' understanding of these topics.

PHY 211: Analytical Physics I 5 Credits

Level I Prerequisites: MTH 191 with "C" and (high school physics or PHY 105 or PHY 111 with "C")
60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours
Fulfills Core Elements: 4 5 7 9 15 17

The first of a two-course sequence in calculus-based physics for students intending to major in science or engineering, PHY 211 develops the concepts of mechanics, heat, and wave motion. Laboratory exercises are included to assist students' understanding of these topics.

PHY 222: Analytical Physics II 5 Credits

Level I Prerequisites: PHY 211 min grade of "C"
60 lecture, 45 lab, 0 clinical, 0 other, 105 total contact hours
Fulfills Core Elements: 5 7 9 15 18

This second part of a two-course sequence in calculus-based physics covers the concepts of electromagnetism, light, and modern physics extending the student's knowledge of physics learned in PHY 211.

Political Science PLS

PLS 112: Introduction to American Government 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 7 8 9 10 21 22 23 24

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

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 2 7 8 10 21 22 23 24

In the current political environment, many functions formerly performed by the national government are being shifted to the state and local governments examined in this course. Special emphasis on the governments of Michigan and Washtenaw County provide for an investigation of the challenges of making decisions and governing a society in response to the immediate needs of its citizens in a global society.

PLS 211: Introduction to Comparative Government — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 21 22 23 24

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.

Power Equipment Technology — PET

PET 100: Power Equipment Repair I — 3 Credits

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

Through a combination of classroom and hands-on skills training, students are introduced to the career of the power equipment technician. This course provides students with the skills to maintain and repair a variety of two and four cycle engines and the related components that re used on foreign and domestic engines including motorcycles, snowmobiles, chainsaws, personal watercraft, all-terrain vehicles, mopeds, generators, lawn and garden equipment, and dirt bikes.

PET 110: Power Equipment Repair II — 3 Credits

Level I Prerequisites: PET 100
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

Through a combination of classroom and hands-on skills training, students learn to repair and maintain the motorcycle engine, frame, and transmission. The course also emphasizes advanced power equipment electrical systems and troubleshooting techniques. Theory and testing of starting, charging, and ignition systems are presented. Theory and troubleshooting techniques used on the fuel injected, power equipment engine are introduced.

PET 120: Power Equipment Repair III — 3 Credits

Level I Prerequisites: PET 110
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

Through a combination of classroom and hands-on skills training, students learn to diagnosis and repair transmissions-hydrostatic and mechanical and drivetrains used on power equipment. The student will also learn the diagnosis and repair on outboard motors and chainsaws.

PET 130: Power Equipment Repair IV — 3 Credits

Level I Prerequisites: PET 120
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

The student will work in a shop-like setting and learn the skills necessary to troubleshoot and repair advanced power equipment problems. Projects will be assigned that will allow the students to utilize skills learned in previous courses and provide skills to successfully work in the power equipment business.

Psychology — PSY

PSY 100: Introductory Psychology — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 15 16 21

This class provides an introduction to the scientific study and interpretation of human behavior surveying such topics as psychological development, learning, thinking, motivation, emotion, perception, intelligence, aptitudes and personality. Basic principles and their practical application are discussed.

PSY 107: African-American Psychology — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 21

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 Black Americans. This is an attempt to build a conceptual model to help understand and explain the psychosocial behavior of Black Americans.

PSY 130: Alcoholism and Substance Abuse — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 21

This course is a presentation of information concerning most aspects of alcoholism and how it affects the afflicted physically, socially, psychologically, vocationally and spiritually. Also, its effect on the significant others in his/her life is discussed.

PSY 200: Child Psychology — 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 1 7 16 21

This course stresses the child as an individual, his or her original nature and temperament and position as part of the group. Introduction of social raw materials is considered. In addition, such topics as the conditioning and reconditioning of behavior patterns and the individuality and similarity of responses are developed.

PSY 206: Life Span Developmental Psychology — 4 Credits

60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 7 16 21

This course provides an overview of the biological, cognitive, social, and affective domains of human growth and development from the prenatal period until death. The course emphasizes the relationship of growth and development to behavior through the life span. Major theories of human development, as well as research methods, are reviewed and contrasted. The course is especially constructed and taught to be of value to those entering the fields of social work, elementary or secondary education, or nursing and various allied health fields.

PSY 207: Adolescent Psychology 3 Credits

Level I Prerequisites: PSY 100 with a min grade of "C-"
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course covers the full spectrum of introductory topics in adolescent psychology. The area of greatest emphasis is on the psychological development of the adolescent. Major topics covered also include peer and adult interactions, self-image, teenage suicide, drugs, and depression. Resolution of the child/adult conflict, which is the essence of this developmental stage, is also discussed.

PSY 209: Psychology of Adjustment 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 16 21

This course is a study of the processes involved in the adjustment of the individual to the problems of everyday living. Emphasis is given to the study of the development of techniques or adjustment to meet conflict situations in the social environment. It includes consideration of adjustment mechanisms of major societal institutions.

PSY 210: Behavior Modification 3 Credits

Level I Prerequisites: HSW 100 or PSY 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 21

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 psychoeducational groups.

PSY 220: Human Development & Learning 4 Credits

Level I Prerequisites: PSY 100
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course covers developmental topics including cognitive and psychosocial from birth through adolescence. Major emphasis is placed on the role of parents and teachers in fostering learning and development. The topics of readiness to learn, learning theory, and planning for and assessing learning outcomes are addressed.

PSY 251: Education of Exceptional Children 3 Credits

Level I Prerequisites: PSY 200
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course presents an overview of the major categories of exceptionality including the gifted, learning disabled, mentally, emotionally, speech and language, hearing, visually, physically and health impaired. Historical, philosophical, and organizational aspects of federal and state laws, rules, and regulations governing special education are addressed. This course will be first offered in Fall 2003.

PSY 257: Abnormal Psychology 3 Credits

Level I Prerequisites: PSY 100
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 15 16 21 23

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, of perception, memory, judgment, thought, disorders of mobility, speech, etc.; early symptoms of schizophrenia.

PSY 260: Introduction to Human Sexuality 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 15 16 21 23

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 Radiography 2 Credits

Level I Prerequisites: Admission to Radiography program
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 9

This course includes the history of radiography, medical specialties, health care delivery, organizational structure of a radiology department, professional development and ethics. It is an introductory course for the beginning radiographer with emphasis on acquainting students with the goals, philosophies and organizations of the radiography program and radiology department.

RAD 101: Methods in Patient Care 2 Credits

Level I Prerequisites: Admission to Radiography program
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: None

This course is designed to teach the radiographer how to interact with the patient, to provide for his or her physical and emotional needs and how to assist in moving patients by using various transfer methods. Included is some lab practice in basic techniques such as taking vital signs, blood pressure, venipuncture, and airway management.

RAD 110: Clinical Education 2 Credits

Level I Prerequisites: Admission to Radiography program
Corequisites: RAD 112
0 lecture, 0 lab, 240 clinical, 0 other, 240 total contact hours
Fulfills Core Elements: 7

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper extremity, chest, and abdomen. Students gain knowledge about professional ethics, courtesy, and empathy in handling patients, film processing, and radiographic equipment. Admission to the Radiography program is required to register for this course.

RAD 111: Fundamentals of Radiography 2 Credits

Level I Prerequisites: RAD 100
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 19

Imaging is the key to the primary responsibility of a radiographer. The intent of this course is to describe the various imaging modalities so that application of principles to produce optimum diagnostic radiographic images are understood.

RAD 112: Radiographic Positioning I 2 Credits

Corequisites: RAD 110
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course includes pertinent nomenclature for radiographic positioning, preliminary steps in radiography, operation of the radiographic control panel, processing the radiograph and positioning of the chest, abdomen and upper extremity.

RAD 113: Radiographic Processing 2 Credits
Level I Prerequisites: RAD 111
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 18 19

This course covers the principles of processing including discussion on darkroom design, radiographic film characteristics, processing chemistry, trouble shooting, maintenance, evaluation of radiographic films to determine diagnostic inadequacies resulting from artifacts and to correct or compensate for the cause.

RAD 120: Clinical Education 2 Credits
Level I Prerequisites: RAD 110
Corequisites: RAD 123
0 lecture, 0 lab, 240 clinical, 0 other, 240 total contact hours
Fulfills Core Elements: 7

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper and lower extremities, chest and abdomen, trunk, spine, and selected contrast studies. Students demonstrate their knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 123: Radiographic Positioning II 2 Credits
Level I Prerequisites: RAD 112
Corequisites: RAD 120
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course covers proper positions for radiography of the lower extremity, trunk and spine. Critiques on positioning and the anatomical appearance of structures on the radiograph are an essential function of the course.

RAD 124: Principles of Radiographic Exposure 3 Credits
Level I Prerequisites: Consent Required
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5 7 15 19

This course includes a comprehensive study of radiographic exposure techniques, radiographic quality, the use of radiographic accessories and how to select and apply this equipment to various situations.

RAD 125: Radiographic Procedures and Related Anatomy 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course covers radiographic procedures in which a contrast medium is used for demonstrating structures which are not well visualized on routine radiographs.

RAD 127: Principles of Radiographic Exposure Laboratory 1 Credit
Corequisites: RAD 124
7.5 lecture, 22.5 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 5

This course provides structured laboratory experience designed to illustrate film response to various exposure techniques. Emphasis is on evaluation of exposure techniques used in obtaining diagnostic information on x-ray film.

RAD 135: Pathology for Radiographers 2 Credits
Corequisites: RAD 200 and 225
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 16

This course is a survey of basic pathology and includes a study of the disease process and how various diseases alter the appearance and function of human organisms, including infectious diseases, tumors, chemical injuries and the conditions of illness involving the systems of the body.

RAD 150: Clinical Education 4 Credits
Level I Prerequisites: RAD 120
0 lecture, 0 lab, 360 clinical, 0 other, 360 total contact hours
Fulfills Core Elements: 7

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper extremity, chest and abdomen, trunk, spine and selected contrast studies.

RAD 200: Physical Foundations of Radiography 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 15

This course covers the theoretical and practical application of radiation physics with an emphasis on electromagnetic radiation, electricity, magnetism, x-ray circuitry, radiation production, and radiation's interaction with matter.

RAD 215: Radiography of the Skull 2 Credits
Corequisites: RAD 217
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7

Anatomy and radiography of the skull are studied so that students can correlate the relationship of external landmarks and positioning lines to specific internal structures. The course includes laboratory experience in skull positioning.

RAD 217: Clinical Education 3 Credits
Level I Prerequisites: RAD 150
Corequisites: RAD 215
0 lecture, 0 lab, 336 clinical, 0 other, 336 total contact hours
Fulfills Core Elements: 7

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper and lower extremities, chest, abdomen, spinal column, contrast studies, and skull. Students demonstrate their knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography. Students participate in surgical procedures that require diagnostic imaging and demonstrate competency in operating portable radiography units.

RAD 218: Radiation Biology and Protection 4 Credits
Level I Prerequisites: Admission to Program and Consent required
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 17 20

This course is designed to acquaint students with the effects of ionizing radiation on the cells which form human tissue. The interaction of radiation with matter and the effect of exposure factors on radiation dose, biological effects, unit of measurement, dose limiting recommendations and exposure monitoring are covered. Admission to the Radiography program and permission of the instructor is required to register for this course.

RAD 225: Clinical Education 3 Credits
Level I Prerequisites: RAD 217
Corequisites: RAD 135 and 200
0 lecture, 0 lab, 360 clinical, 0 other, 360 total contact hours
Fulfills Core Elements: 7

This course provides structured clinical experience in the application of knowledge and skills in positioning the upper and lower extremities, chest and abdomen, spinal column, contrast studies, and skull. Students demonstrate their knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 240: Clinical Education 2 Credits
Level I Prerequisites: RAD 225
0 lecture, 0 lab, 225 clinical, 0 other, 225 total contact hours
Fulfills Core Elements: 7

Structured clinical experience is provided in all areas of radiography. Electives in specialized areas are explored (i.e., ultrasound, computed tomography, magnetic resonance imaging, radiation therapy, and nuclear medicine).

RAD 260: CT Cross-sectional Anatomy 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course covers the study of cross-sectional anatomy of the pelvis, abdomen, thorax and great vessels, neck, maxillofacial region, brain and vertebral column. Related diseases, indications for CT imaging, patient preparation and scanning technique are discussed.

RAD 280: Radiographic Critique 2 Credits
Level I Prerequisites: RAD 112, RAD 123, RAD 124, and RAD 127
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements:None

This course identifies and examines the technical factors that contribute to the formation of the radiographic image. Through discussion and demonstration, student learn how to critically analyze a radiograph and to determine how to modify the technical factors used in order to improve the quality.

Reading REA

See Academic Skills (ACS) for additional reading courses

REA 040: Elements of Reading, Writing, and Numerical Reasoning I 6 Credits
90 lecture, 0 lab, 0 clinical, 90 other, 180 total contact hours
Fulfills Core Elements:None

This is an introductory reading course with writing and basic math exposure. This course is required for students who score below 36 on the COMPASS Reading test. This course uses the satisfactory/unsatisfactory grading system. For other reading courses, look under Academic Skills (ACS).

REA 050: Reading Comprehension 5 Credits
Level I Prerequisites: COMPASS Reading score less than 51
60 lecture, 0 lab, 0 clinical, 45 other, 105 total contact hours
Fulfills Core Elements:None

This is a low-intermediate reading course for comprehension. This course is required for students who score 36-50 on the COMPASS Reading test. Students who want to register for additional credits may take MTH 039, MTH 054, MTH 062, MTH 090, as appropriate, and/or ENG 050 concurrently with this course. For other reading courses, look under Academic Skills (ACS).

Real Estate RES

RES 100: Real Estate Principles and Prelicensure 4 Credits
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 11

This is an introductory survey course in real estate principles, practices, and concepts. Students see a broad overview of the real estate field including varieties of residential and commercial brokerage, property financing, appraisal, investment, property management, land planning, property description, legal documents and contracts, title insurance, construction, condominiums, fair housing, civil rights, Board of Realtor functions, and State licensure and regulation. The course can begin an academic foundation in real estate, provide information to homeowners and investors, determine a career interest in real estate, or meet the State course prerequisite to taking the State of Michigan exam for a Real Estate Salesperson's license. This course is approved by the State of Michigan.

RES 120: Real Estate Finance 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7

This course covers methods of financing residential, commercial, and income properties. Includes sources of funds, affordability issues, applications for loans, lender processing and risk analysis, creative financing, government programs, tax considerations, and secondary marketing. This course can help satisfy the State of Michigan education requirements for Real Estate Brokers. It is recommended, but not required, that RES 100 be taken before RES 120.

RES 130: Real Estate Appraisal 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7

This course covers the nature of value, foundations of appraisal, valuation processes (including cost, market, income approaches, capitalization theory, and discounted cash flow). Also covered are appraisal ethics and reporting, and uses of the computer in residential and commercial appraising and valuation consulting. This course helps satisfy the State of Michigan course requirements for Real Estate Broker and Real Estate Appraiser licenses. It is recommended, but not required, that RES 100 be taken before RES 130.

RES 140: Real Estate Law 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 22

This course covers the laws and legal principles involved in residential and commercial real estate. Topics include evidence of title, deeds, financing, sale contracts, legal position of brokers, leases, zoning, fair housing and real estate taxes. This course helps satisfy the State of Michigan requirements for Real Estate Appraiser and Real Estate Broker licenses. It is recommended, but not required, that RES 100 be taken before RES 140.

RES 150: Real Estate Investment 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course covers investment in and development of land, homes, apartments, office buildings retail centers, warehouses and hotels. Examples from the community and other states are used to illustrate the course objectives. Topics include financing, taxation and exchanges. This course helps satisfy the State of Michigan Real Estate Broker education prelicensure requirement. It is recommended, but not required, that RES 100 be taken before RES 150.

RES 160: Real Estate Property Management 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course provides an introduction to all the subfields of real estate property management including apartments, office, retail, and warehouse management. Materials used in this course are from the Institute for Real Estate Management (IREM), which is part of the National Association of Realtors (NAR) and other sources. This course helps satisfy the State of Michigan Real Estate Broker education prelicensure requirement. It is recommended, but not required, that RES 100 be taken before RES 160.

Robotics ROB

ROB 121: Robotics I 4 Credits

45 lecture, 45 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 10 18 19

This is the first course in a four-course series. This is a beginning level course exposing students to various aspects of industrial robots and automated manufacturing. This includes an introduction to hands-on programming. Emphasis is placed on application of flexible automation, types of programming, sensors, and types of robots. Field trips to local manufacturing firms using robotic equipment help the student understand and witness concepts presented in class.

ROB 174: ROB Co-op Education I 1-3 Credits

0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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: ROB 121
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 9 11 18 19

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 who have experience equivalent to ROB 121 may contact the instructor for permission to waive the pre-requisite.

ROB 222: Robotics Simulation 2 Credits

Corequisites: ROB 223
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

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. This course should be taken the same semester as ROB 223 Robotics III.

ROB 223: Robotics III 2 Credits

Level I Prerequisites: ROB 212
Corequisites: ROB 222
15 lecture, 30 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 9 11 18

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. This course should be taken the same semester as ROB 222 Robotic Simulation.

ROB 224: Robotics IV 4 Credits

Level I Prerequisites: ROB 223
30 lecture, 60 lab, 0 clinical, 0 other, 90 total contact hours
Fulfills Core Elements: 7 8 9 11 12 18 19

This course involved 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: ROB 174 and Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

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 100: Introduction to Natural Sciences 1 Credit
7.5 lecture, 22.5 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 15 16 17 18

This course is designed to allow students to acquire an appreciation of the importance of the natural sciences to everyday life, including facts and familiarity with general concepts of how science works. The focus is on physical and biological aspects of science. Students who take this course discover that scientists are people and that science can be fun. The course is designed primarily for students in technology programs and includes directed study in the experimental sciences.

SCI 101: The Nature of Science 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 15 16 17 18

This course is designed to allow students to acquire an appreciation of the importance of the natural sciences to everyday life, including facts and familiarity with general concepts of how science works. The focus is on physical and biological aspects of science. Students who take this course discover that scientists are people and that science can be fun. The course is designed primarily for students in technology programs and includes directed study in the experimental sciences. The course is offered using Interactive Television.

Sociology SOC

SOC 100: Principles of Sociology 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 10 15 20 21 23 24

This course examines human interaction and the products of that interaction which include social structure and institutions, culture, social order, conflict and change. Emphasis is placed on the connection between self and society: that we think, feel and act as we do largely because of social forces that pressure us to conform or to deviate from social expectations.

SOC 201: Medical Sociology 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 8 9 10 15 20 21 23 24

This course examines social and behavioral factors that account for the social differences in getting sick, getting care, getting well and staying well. Emphasis is placed on the socio-cultural definitions and distributions of illness, lifestyle, stress and illness, taking the sick role, seeking and using health care services, socialization of health workers, consumer-provider interaction, organization and distribution of services. Some issues which are examined pertain to the cost of care and health insurance, prevention, self-help movement, underserved groups, bio-medical technology and the quality of life.

SOC 202: Criminology 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 21 23

An examination is provided of the theories which attempt to explain criminal behavior. Punishment versus rehabilitation schools of thought is dealt with as well as capital punishment. Attention is also given to the functioning of police and court systems.

SOC 203: Aging & Society 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 8 10 21 24

This course examines social and social-psychological principles, practices, and problems of the aging process. Topics include the social and personal attitudes toward aging, ageism, role changes in mid-life to later life, and adaptive challenges of retirement: needs and problems relevant to housing, health care, finances, social support systems, and community services. Other issues such as political activity and cross-cultural differences are addressed.

SOC 205: Race & Ethnic Relations 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 10 21 22

This course provides an examination of the basic concepts of racial and ethnic relations and the concept of race. It examines and analyzes the course of oppression and suppression, superiority and inferiority, and majorities and minorities in racial subgroups.

SOC 207: Social Problems 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 6 7 9 10 15 21 23 24

This course examines how social forces can create and maintain or prevent major social problems that result from people's efforts to meet their growth and survival needs. Emphasis is placed on the structural, institutional, technological and social-psychological causes, consequences, and solutions of problems relevant to inequality, institutional crises, deviance and social control, population pressures and ecological problems.

SOC 230: Marriage and Family 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 8 9 10 15 20 21 23 24

This course examines the principles, practices, and problems of mate selection, marriage, family and singleness. Emphasis is placed on how Socio-cultural changes are reshaping lifestyle, choices, parenting, communication building and maintaining relationships.

SOC 250: Juvenile Delinquency 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 7 21

The growing-up process of late childhood and adolescence from a sociological and cultural viewpoint is a focus of this class. Problems of the individual in his/her social environment, group forces which lead to maladjustment and sociological principles for working with youth from the viewpoint of parent, teacher, police and youth organization leader are analyzed.

Spanish SPN

SPN 109: Beginning Conversational Spanish I 2 Credits
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

Conversational in approach, this course assumes that the student has no previous knowledge of the language. It is designed for those who want to practice the fundamentals of spoken Spanish to enhance their travel enjoyment in Spain and Latin America. The course also promotes an appreciation of the Hispanic world. This course does not satisfy four year college language requirements. This course was previously SPN 120.

SPN 110: Beginning Conversational Spanish II 2 Credits
Level I Prerequisites: SPN 109 or SPN 120 or one semester of college Spanish
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

This is a continuation of SPN 109. This course is designed to further develop the skills acquired in Spanish 109. It is for students interested in expanding their speaking and comprehension skills, and their knowledge of Spanish grammar and Hispanic culture. This course does not satisfy four year college language requirements. This course was previously SPN 121.

SPN 111: First Year Spanish I 5 Credits
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

This is a beginning and transferable course in Spanish which emphasizes the aural-oral approach. Classroom work and laboratory assignments assist the student in communicating effectively in the four language skills of listening, speaking, reading, and writing. Cultural aspects of the Spanish-speaking world are also highlighted.

SPN 119: Spanish Language Adventures 1-3 Credits
0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours
Fulfills Core Elements: 13 14 24

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: SPN 111
75 lecture, 0 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 13 14 24

A continuation of SPN 111. This is a transferable course which emphasizes basic conversation tools and grammatical structures. Classroom work and laboratory assignments assist the student in developing communicative competence in the target language. Cultural aspects of the Spanish-speaking world are also highlighted.

SPN 211: Intermediate Conversational Spanish 2 Credits
Level I Prerequisites: SPN 121
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 13 14 24

This flexibly-structured course provides vocabulary expansion and cultural insights through total student involvement in the conversation practice sessions. Students who have experience equivalent to SPN 121 may contact the instructor for permission to waive the pre-requisite.

SPN 213: Second Year Spanish I 3 Credits
Level I Prerequisites: SPN 122
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14 24

This is an intermediate course in Spanish that covers all of the basic grammar. Emphasis is on the written form through composition. Students who have experience equivalent to SPN 122 may contact the instructor for permission to waive the pre-requisite.

SPN 224: Second Year Spanish II 3 Credits
Level I Prerequisites: SPN 213
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 13 14 24

This is a continuation of SPN 213 with special attention to reading and translating modern Latin American short stories. Students who have experience equivalent to SPN 213 may contact the instructor for permission to waive the pre-requisite.

Tax TAX

TAX 101: Income Taxes for Individuals 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 5 7 9 11

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 163 or have a minimum Compass Algebra score of 46.

Trade Related Instruction TRI

TRI 103: Sheet Metal Blueprint Reading and Layout 4 Credits
Level I Prerequisites: MTH 151 min grade of "C" or COMPAlgebra = 46
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements:None

This course focuses on elementary sheet metal layout with an emphasis on developing sheet metal patterns by standard short-cut methods. Students gain hands-on experience fabricating the patterns into actual sheet metal locks, seams, clips, connectors, ducts, elbows, tees, and offsets.

TRI 115: Blueprint Facilities Maintenance 3 Credits
Level I Prerequisites: (MTH 039 or Compass Prealgebra = 24) and Compass Reading = 70
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course teaches the basics in reading engineering plans and drawings. Participants learn to understand electrical, mechanical, and fluid power systems through the use of schematic diagrams. Participants also learn the elements of machine drawings, hydraulics and pneumatics, building drawings, electrical drawings, sheet metal drawings, piping drawings, and welding processes and symbols.

TRI 131: Commercial Property Maintenance 3 Credits
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course is designed to increase the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial property. This includes institutions, hospitals, hotels, malls, residential rental property, both single and multifamily, resorts, and office buildings. This course was previously CON 121.

TRI 133: Commercial Property Maintenance II 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is the second in a series of four courses that addresses the skills and knowledge required to successfully maintain and repair commercial properties. This course was previously CON 123.

TRI 135: Commercial Property Maintenance III 3 Credits

45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This is the third in a series of four courses that addresses the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial properties. This course was previously CON 125.

TRI 137: Commercial Property Maintenance IV 3 Credits

Level I Prerequisites: consent required
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This is the fourth of four courses that addresses the knowledge and skills of individuals who are responsible for the maintenance and repair of commercial properties. This course was previously CON 127.

TRI 140: Millwright Theory 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 7 9

This course teaches millwright practices. The topics covered include millwright fundamentals, fiber and steel rope, hoisting, structural woods and steels, scaffolding, strengths of timber and metal beams, cranes and derricks, rigging, transporting heavy shop equipment, accident prevention, standards, laws, and codes. Participants also learn about the maintenance of bearings, belts, chain drives, and conveyors.

TRI 171: Woodworking Machines & Processes I 2 Credits

Level I Prerequisites: COMPASS Prealgebra = 24
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This course is the first of a two-part series that covers safe and productive use of common woodworking tools and equipment. The focus is on processes as opposed to product. This course was previously CON 171: Basic Woodworking.

TRI 174: TRI Co-op Education I 1-3 Credits

Level I Prerequisites: Consent required
0 lecture, 0 lab, 0 clinical, 120 other, 120 total contact hours
Fulfills Core Elements: None

Students gain skills from new experiences 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.

TRI 201: Plumbing and Pipefitting I 3 Credits

Level I Prerequisites: MTH 039 or Compass Prealgebra = 24
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

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.

TRI 202: Plumbing and Pipefitting II 4 Credits

Level I Prerequisites: TRI 201
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

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 who have equivalent experience may contact the instructor for permission to waive the pre-requisite.

TRI 240: Plant Layout and Material Handling Systems 4 Credits

Level I Prerequisites: TRI 140
0 lecture, 60 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 9

This course teaches blueprint reading and simplified drawing of typical free and power type conveyor systems. In addition, students learn plant layout drawing of machinery, foundations, exhaust systems, heat treat furnaces, hoists, catwalks and platforms.

TRI 271: Woodwork Machines/Processes II 2 Credits

Level I Prerequisites: TRI 171
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

This is the second of two courses that introduce the student to methods and processes used in woodworking. The focus of this course is on woodworking processes rather than products. This course was previously CON 271 Cabinetry.

United Association Supervision UAS

UAS 111: Introduction to Construction Supervision I 3 Credits

Level I Prerequisites: Admission to the Construction Supervision Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course concentrates on the management and supervisory skills needed by new first-line supervisors. The course has practical applications taken from common workplace situations. Because employees generally receive promotion to supervision based on their technical expertise, this course provides the new management and people skills that add to these technical abilities.

UAS 122: Construction Supervision II 3 Credits

Level I Prerequisites: Admission to the Construction Supervision Program and UAS 111
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This supervision course helps the student develop practical, operational management skills in the functional areas of planning, organizing, leading and controlling construction projects.

UAS 211: Construction Supervision III **3 Credits**
Level I Prerequisites: Admission to the Construction Supervision Program and UAS 111
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This class covers basic human resources activities applicable to the construction industry. It covers employment techniques, wages and hours, job evaluation, training, employee performance reviews, collective bargaining, employment counseling and collateral benefits such as pensions and fringe benefits. The course also focuses on skills required to manage work habits and a career. It offers a system of goal management and tools for development, refining, and building interpersonal skills.

UAS 222: Project Management in the Construction Industry **3 Credits**
Level I Prerequisites: Admission to the Construction Supervision Program, UAS 122, and UAS 211
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

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 226: Legal Aspects of Construction **3 Credits**
Level I Prerequisites: Admission to the Construction Supervision Program and UAS 111
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course provides an in-depth study of the legal aspects of the construction industry. Students explore contracts and the law of the of the contract at large, obligations of the parties, remedies under the contract, administration of the contract, warranties, bonds, payments, and subcontracting. Operational liabilities are also covered and include topics such as liabilities for defective structures, limitations of actions, claims processing, and dispute resolution.

United Association Training UAT

UAT 111: Apprentice Training **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course will focus on the principles of learning, elements of trade teaching and the methods of teaching an applied technical skill.

UAT 121: Apprentice Training II **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course will focus on developing instructional objectives, planning and presenting related information lessons and the methods of teaching a second applied technical skill.

UAT 131: Apprentice Training III **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This course will focus on the development of written tests, an elective professional skill, and a third teaching demonstration in a technical skill area.

UAT 141: Apprentice Training IV **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course will focus on discussion and interaction techniques, an elective professional skill and the teaching methods in a fourth technical skill area.

UAT 151: Apprentice Training V **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course will focus on innovations and problems in trade teaching, an elective professional skills, and methods of teaching in a fifth technical skill area.

UAT 161: Technical Seminar **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course will focus on the methods of teaching a technical skill area. Special approval required and will replace UAE 121, 131, 141, or 151.

UAT 171: Professional Seminar **3 Credits**
Level I Prerequisites: Admission to the Industrial Training Program
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course will focus on instructional methodology and practices for the trade-related instructor. Special approval required and will replace UAE 121, 131, 141, or 151.

UAT 201: Advanced Instructor Training I **3 Credits**
Level II Prerequisites: UAT 151
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 202: Advanced Instructor Training II **3 Credits**
Level II Prerequisites: UAT 151
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as

technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 203: Advanced Instructor Training III **3 Credits**
Level II Prerequisites: UAT 151
0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours
Fulfills Core Elements: None

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 204: Advanced Instructor Training IV **3 Credits**
Level II Prerequisites: UAT 151
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is designed for graduates of the 5-year UA instructor training program. Trade teachers will expand their skills and knowledge in teaching techniques and methodologies, as well as technological concepts. The student will select one 45 hour module or two 22 1/2 hour modules from unit one or unit two.

UAT 205: Advanced Instructor Training V **3 Credits**
Level II Prerequisites: UAT 151
0 lecture, 0 lab, 0 clinical, 0 other, 0 total contact hours
Fulfills Core Elements: None

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.

Video Production VID

VID 101: Video Production I **3 Credits**
Level I Prerequisites: GDT 105
Corequisites: VID 110
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements:None

This is an introductory course that teaches students the basics of video production. 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. Students who have completed a high school or college course in Mac Graphics or have equivalent work experience may contact the instructor for permission to waive the pre-requisite.

VID 102: Video Production II **3 Credits**
Level I Prerequisites: VID 101 and VID 110
Corequisites: VID 112
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course is designed to develop and expand skills learned in VID 101. More in-depth study of storyboarding, shot lists, scriptwriting, budgeting, videography, lighting, audio, and more advanced production techniques are covered. Through a combination of lecture and hands-on exercises, students develop skills to produce various styles of productions. Depending on the students' interest, they may produce a finished informational, public service, advertisement, narrative, or artistic video production.

VID 110: Digital Video Editing I **3 Credits**
Level I Prerequisites: GDT 105
Corequisites: VID 101
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

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. Students who have had a high school or college course in Mac Graphics or equivalent work experience may contact the instructor to waive the pre-requisite.

VID 112: Digital Video Editing II **4 Credits**
Level I Prerequisites: VID 101 and VID 110
Corequisites: VID 102
60 lecture, 0 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

Students learn advanced editing techniques using Final Cut Pro software on a Mac G4 computer. Students study and develop skills in system configuration and language, rough cut editing, editing for effect, match frame editing, printing to video/multimedia or web, as well as editing their own footage from VID 102. A combination of lecture and hands-on experience are combined to develop editing skills.

VID 299: Advanced Video Graphics **3 Credits**
Level II Prerequisites: VID 112 or GDT 140 with min "C-" in either course or instructor permission
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: None

This course introduces students to motion graphics composition for film/video and internet distribution. Students learn the role of motion graphics in these media. Adobe After Effects is used as the main tool to create motion graphics compositions. Students learn the basics of visual effects terminology, effect keying and transparency, keyframing, synchronizing compositions to music, compression codecs required for optimization, and saving the finished composition to a variety of film/video and internet ready formats such as Apple QuickTime. Lecture and hands-on experience are combined to develop motion graphics composting skills. Students gain a working knowledge of After Effects and are exposed to examples of work from industry professionals for inspiration.

Welding & Fabrication WAF

WAF 100: Fundamentals of Welding **2 Credits**
Level I Prerequisites: (COMPRead=70 or ACS 070 may enroll concurrently) & (COMPWrite=81 or ENG 091 may enroll concurrently)
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 17 18 19

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: (COMPASS Reading = 70 or ACS 070 concurrent enrollment allowed) and (COMPASS Writing = 81 or ENG 091 concurrent enrollment allowed)
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 18 19

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
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 17 18 19

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
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 17 18 19

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 & Brazing 2 Credits
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 5 7 17 18 19

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 & Engineering 2 Credits
15 lecture, 45 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 1 5 18 19

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
45 lecture, 0 lab, 0 clinical, 0 other, 45 total contact hours
Fulfills Core Elements: 4 5

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
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 5 7 17 18 19

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
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 5 17 18 19

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
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 1 5 7 18 19

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
30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 5 7 17 18 19

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
30 lecture, 45 lab, 0 clinical, 0 other, 75 total contact hours
Fulfills Core Elements: 4 5 18 19

This course involves layout problem solving for the welder including techniques using layout die, combination squares, protractors, center heads, trammel points, dividers, and straightedges. 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 4 Credits
Level I Prerequisites: WAF 105 or WAF 111 or WAF 112 or WAF 227
0 lecture, 0 lab, 15 clinical, 120 other, 135 total contact hours
Fulfills Core Elements: None

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 210: Welding Metallurgy 3 Credits
45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 5 7 18 19

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 is included.

WAF 215: Welding V Advanced GTAW & GMAW 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 5 18 19

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

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements: 5 7 18 19

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. Instructor consent is required to register for this course.

WAF 227: Basic Fabrication 3 Credits

Level I Prerequisites: WAF 105
30 lecture, 30 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: 4 5 7 18 19

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

45 lecture, 15 lab, 0 clinical, 0 other, 60 total contact hours
Fulfills Core Elements: None

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. Instructor consent is required to register for this course.

WAF 289: MIG Welding 4 Credits

30 lecture, 90 lab, 0 clinical, 0 other, 120 total contact hours
Fulfills Core Elements:None

This course focuses on the use of MIG equipment to perform such operations as BUTT, LAP, and fillet welds. The course emphasizes all weld positions using solid and flux cored wires.

Yoga YOG

YOG 101: Introduction to Hatha Yoga 2 Credits

30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 16

This course provides an introduction to the philosophy and practice of Hatha Yoga.

YOG 102: Philosophy and Practice of Yoga 2 Credits

Level I Prerequisites: YOG 101
30 lecture, 0 lab, 0 clinical, 0 other, 30 total contact hours
Fulfills Core Elements: 14 16

This course is a continuation of Yoga 101, Introduction to Hatha Yoga.

Curriculum Changes for Fall 2002

Course Changes: Code, Title, and Credit Changes

WAS			IS NOW		
Course	**Title**	**Credit**	**Course**	**Title**	**Credit**
Course	Title	Credit	Course	Title	Credit
ABR 115	Classic Auto Restoration I	4	**ARF 115**	Classic Auto Restoration I	4
ABR 117	Classic Auto Restoration II	4	**ARF 117**	Classic Auto Restoration II	4
ABR 130	Custom Painting	3	ABR 130	Custom Painting	**4**
ABR 215	Classic Auto Restoration III	4	**ARF 215**	Classic Auto Restoration III	4
ABR 217	Classic Auto Restoration IV	4	**ARF 217**	Classic Auto Restoration IV	4
ASV 112	Vintage Automobile Engine Rebuilding	4	**ARF 112**	**Classic Engine**	4
ASV 120	Engine Performance	1	ASV 120	**Engine Performance Recertification**	1
BIO 215	Intro to Cell Physiology	3	BIO 215	Cell and Molecular Biology	**4**
BIO 227	Zoology	4	BIO 227	**Animal Physiology**	4
BIO 228	Botany	4	BIO 228	**Plant Physiology**	4
BMG 209	Writing the Business Plan	3	BMG 209	**Business Planning for Entrepreneurs**	3
BMG 292	Operating a Small Business: An Experience	3	BMG 292	**Market Planning for Entrepreneurs**	3
BOS 208	Desktop Publishing for the Office	3	BOS 208	Desktop Publishing for the Office	**2**
BOS 210	Medical Transcription	3	BOS 210	**Medical Transcription I**	3
CIS 282	Small Systems Database	3	CIS 282	**Relational Database Concepts & Applications**	3
CNT 201	Managing Microsoft Workstations	2	CNT 201	**Administering MS Windows 2000 Professional**	**3**
CNT 211	Administering Microsoft Windows Networks	3	CNT 211	Administering Microsoft Windows 2000 Server	4
CNT 231	Implementing a MS Windows Directory Services Infrastructure	3	CNT 231	**Administering MS Windows 2000 Directory**	**4**
CNT 241	Designing a MS Windows Directory Services Infrastructure	4	CNT 241	Designing a Windows 2000 Directory Services Infrastructure	**2**
CNT 251	Microsoft Network Security	3	CNT 251	**Designing Windows Security**	3
CNT 261	Designing a Microsoft Network Infrastructure	3	CNT 261	**Designing a Windows Network Infrastructure**	**4**
CON 104A	Construction I	4	CON 104A	Construction I	3
CON 121	Commercial Property Maintenance	3	**TRI 131**	Commercial Property Maintenance I	3
CON 123	Commercial Property Maintenance II	3	**TRI 133**	Commercial Property Maintenance II	3
CON 125	Commercial Property Maintenance III	3	**TRI 135**	Commercial Property Maintenance III	3
CON 127	Commercial Property Maintenance IV	3	**TRI 137**	Commercial Property Maintenance IV	3
CON 171	Basic Woodworking	2	**TRI 171**	**Woodworking Machines & Processes I**	2
CON 271	Cabinetry	2	**TRI 271**	**Woodwork Machines/Processes II**	2
CPS 276	Web Programming & Oracle Database	4	CPS 276	**Web Programming Using Apache, MySQL, and PHP**	4
CPS 293	Visual C++ Windows Programming	4	CPS 293	**Windows Programming with C++ and C#**	4
FRN 111	First Year French I	4	FRN 111	First Year French I	5
FRN 120	Beginning Conversational French	2	**FRN 109**	Beginning Conversational French	2
FRN 121	Intermediate Conversational French	2	**FRN 110**	Intermediate Conversational French	2
FRN 122	First Year French II	4	FRN 122	First Year French II	5
GDT 112	Graphic Communication	4	GDT 112	**Graphic Communication I**	4
GDT 259	Information Graphics	4	GDT 259	**Graphic Communication II**	4
GRM 111	First Year German I	4	GRM 111	First Year German I	5
GRM 120	Conversational German	2	**GRM 109**	Beginning Conversational German	2
GRM 121	Intermediate Conversational German	2	**GRM 110**	Intermediate Conversational German	2
GRM 122	First Year German II	4	GRM 122	First Year German II	5
MTT 101	Blueprint Reading for Manufacturing	3	MTT 101	**Blueprint Reading and Computerized Drawings**	**2**
MTT 111	Machine Shop Theory and Practice	5	MTT 111	Machine Shop Theory and Practice	4
NCT 112	Introduction to CNC Machining	5	NCT 112	**Introduction to Computerized Machining**	**4**

Course Changes continued

WAS			IS NOW		
Course	**Title**	**Credit**	**Course**	**Title**	**Credit**
NCT 236	SURFCAM 2 Axis CNC Programming	4	NCT 236	**SURFCAM CNC Programming**	4
PHO 230	Specialized Study	3	PHO 230	**Portfolio Projects**	3
SPN 111	First Year Spanish I	4	SPN 111	First Year Spanish I	**5**
SPN 120	Beginning Conversational Spanish I	2	**SPN 109**	Beginning Conversational Spanish I	2
SPN 121	Beginning Conversational Spanish II	2	**SPN 110**	Beginning Conversational Spanish II	2
SPN 122	First Year Spanish II	4	SPN 122	First Year Spanish II	**5**
TRI 103	Sheet Metal Blueprint Reading and Layout	3	TRI 103	Sheet Metal Blueprint Reading and Layout	**4**

New Courses

Course	Title	Credit	Course	Title	Credit
BOS 220	Medical Transcription II	4	HUM 103	Introduction to Humanities - 20th Century	3
CIS 099	Computer Literacy	1	HUM 146	Mythology	3
CIS 175	Beginning Java Programming	4	INP 153	Designing User Experience I	3
CIS 269	Java Certification Preparation	4	INP 276	Web Animation II	4
CMG 130	Construction Site Safety and MIOSHA Regulations	3	MTH 167	Math Applications for Health Science	3
CMG 150	Introduction to Construction Management	3	MTH 167A	Math Applications for Health Science	2
CMG 170	Construction Graphics	4	MTH 167B	Math Applications for Health Science	2
CMG 200	Construction Systems	4	MTT 102	Machining for Auto Applications	2
CNT 222	Managing a Microsoft Windows 2000 Network Environment	4	PET 100	Power Equipment Repair I	3
			PET 110	Power Equipment Repair II	3
CON 124	Introduction to Painting & Decorating	3	PET 120	Power Equipment Repair III	3
CON 128	Wall Covering and Decorating Techniques	3	PET 130	Power Equipment Repair IV	4
EDU 201	Field Experience in Teaching and Learning	1	PSY 207	Adolescent Psychology	3
ENG 023	High Beginning ESL Reading & Listening	4	PSY 220	Human Development & Learning	4
ENG 024	High Beginning ESL Grammar & Communication	4	PSY 251	Education of Exceptional Children	3
ENG 064	Advanced ESL Reading	4	UAT 201	Advanced Instructor Training I	3
ENG 067	Advanced ESL Writing	4	UAT 202	Advanced Instructor Training II	3
ENG 242	Multicultural Literature for Youth	3	UAT 203	Advanced Instructor Training III	3
GDT 127	QuarkXPress - Print Publishing	4	UAT 204	Advanced Instructor Training IV	3
GDT 139	Illustrator Graphics	4	UAT 205	Advanced Instructor Training V	3
GDT 140	Photoshop Graphics	4	VID 299	Advanced Video Graphics	3
GLG 289	Dinosaurs for Educators	3	WAF 201	Special Topics in Welding	4
HSC 138	General and Therapeutic Nutrition	2	WAF 289	MIG Welding	4

Discontinued Courses

Course	Title	Credit
ABR 129	Auto Restoration-Final Paint and Assembly to Show	4
ABR 131	Advanced Custom Painting	2
ABR 230	Adv Auto Body V: Adv. Auto Refinish Applications	4
ACS 102	Spelling Power	2
ASV 097	Automotive Service Fundamentals	2
ASV 114	Vintage Auto Engine - Final Assembly & Initial Operation	2
ASV 126	Electrical Systems	2
ASV 141A	Automobile Restoration IA-Fundamentals	2
ASV 142A	Auto Restoration IB-Fundamentals	2
ASV 145	Automotive Mechanics V	4
ASV 160	Small Engine Repair	2
ASV 161	Small Engine Diagnosis and Repair I	2
ASV 162	Small Engine Diagnosis and Repair II	2
BIO 216	Cell Physiology Lab	1
CIS 090	Computers for Novices	2
CON 071	Basic Boiler and Heating Systems	2
CON 073	Basic Refrigeration Systems	2
CON 075	Basic Air Handling Systems	2
CON 077	Building Control Systems	2
CON 079	Electrical Systems and Illumination	2
CON 089	Home Repair and Improvement	2
CON 104A	Construction I	3
CON 104B	Construction IB - Fastrak	3
CON 107	Basic Soil Mechanics	3
CON 111	Introduction to Construction Supervision I	3
CON 112	Blueprint Reading for Construction—Commercial	3
CON 115	Construction Site Safety	3
CON 122	Construction Supervision II	3
ECO 120	Making of Economic Society	3
ELE 104	Electronic Soldering	1
ELE 105	Introduction to Telecommunications	3
ELE 139	Microprocessors	4
ELE 140	Software Concepts	4
ELE 205	Basic Telephony	4
ELE 209	Operational Amplifiers	2
ELE 216B	Data Communications Hardware Standards, Configuration	2
ELE 225B	Advanced Networking Concepts	2
ELE 230	Computer System Fundamentals	4
ELE 235	Computer System Troubleshooting	4
ELE 244	Motion Control	1-4
ELE 245	Transmission Systems	4
ELE 250	Microprocessor Interfacing	1-4
ENG 105	Bridge ESL Written Communication	8
ENG 278	Magazine Publication	3
FRN 112	French Laboratory I	1
FRN 123	French Laboratory II	1
HRM 104	Front Office Procedures	3
HRM 222	Lodging Marketing and Promotion	3
HSC 180	Simulated Scenarios in Health Care	1
HSC 210	Rehabilitation Assistant Skills	3
HST 160	American Film	3
HTG 100A	Boiler Operations I	3
HTG 100B	Boiler Operations II	3
HTG 101	Boiler Accessories	3
HTG 102	Boiler Auxiliaries	3
HTG 103	Power Plant Engines and Turbines	3
HTG 104	Power Plant Refrigeration	3
HTG 105	Power Plant Air Conditioning Systems	3
HTG 106	Power Plant Electricity I	3
HTG 107	Power Plant Electricity II	3
HTG 109	Review for Boiler/Refrigeration Examination	3
HTG 174	HTG Co-op Education I	1-3
HTG 274	HTG Co-op Education II	1-3
MTT 100	Machine Shop Theory	4
MTT 210	Machine Tool Technology	4
NCT 122	Adv Manual Programming and NC Tool Operation	5
NCT 247	SURFCAM 3 Axis CNC Programming	4
QCT 100	SPC Charting Techniques	2
QCT 101	Process Quality Control	3
QCT 122	Sampling Quality Control	3
QCT 174	QCT Co-op Education I	1-3
QCT 201	Quality Of Service	3
QCT 213	Quality Control by Statistical Methods	3
QCT 224	Quality Control Problem Solving	3
QCT 225	Quality Control Management	3
QCT 226	Dimensional Metrology and Testing	3
QCT 274	QCT Co-op Education II	1-3
RAD 262	Principles of Computed Tomography	2
RTH 201	Specialty Clinical Practice	2
RTH 202	Pediatric Clinical Practice	2
RTH 217	Seminar in Respiratory Therapy	2
RTH 222	Pulmonary Function Testing and Rehabilitation	2
SPN 112	Spanish Laboratory I	1
SPN 123	Spanish Laboratory II	1
SPN 225	Introduction to Business Spanish	3
SUR 097	Sterile Processing and Distribution Theory	4
SUR 098	Sterile Processing and Distribution Clinical	2
SUR 100	Surgical Technology I Theory	3
SUR 105	Surgical Technology I Lab	1
SUR 120	Surgical Technology II Theory	3
SUR 125	Surgical Technology II Lab	1
SUR 135	Surgical Technology II Clinical	2
SUR 140	Surgical Technology Pharmacology	2

Discontinued Courses continued

Course	Title	Credit
SUR 150	Surgical Technology III Theory	3
SUR 155	Surgical Technology III Clinical Practice	4
SUR 160	Surgical Technology Seminar	1
TRI 092	Review for Apprentice Test	4
TRI 092A	Review for Apprenticeship Training Test	3
TRI 099	Skilled Trades Industrial Safety	2
TRI 105	Advanced Sheet Metal Layout	3
TRI 111	Introduction to Code Enforcement	3
TRI 199	On The Job Training	1-6
TRI 220	Electrical Grounding	3
TRI 222	Electrical Wiring Industrial	3
TRI 274	TRI Co-op Education II	1-3

Program Changes: changes in title, code, and degree/certificate awarded

This list does not include changes in program requirements.

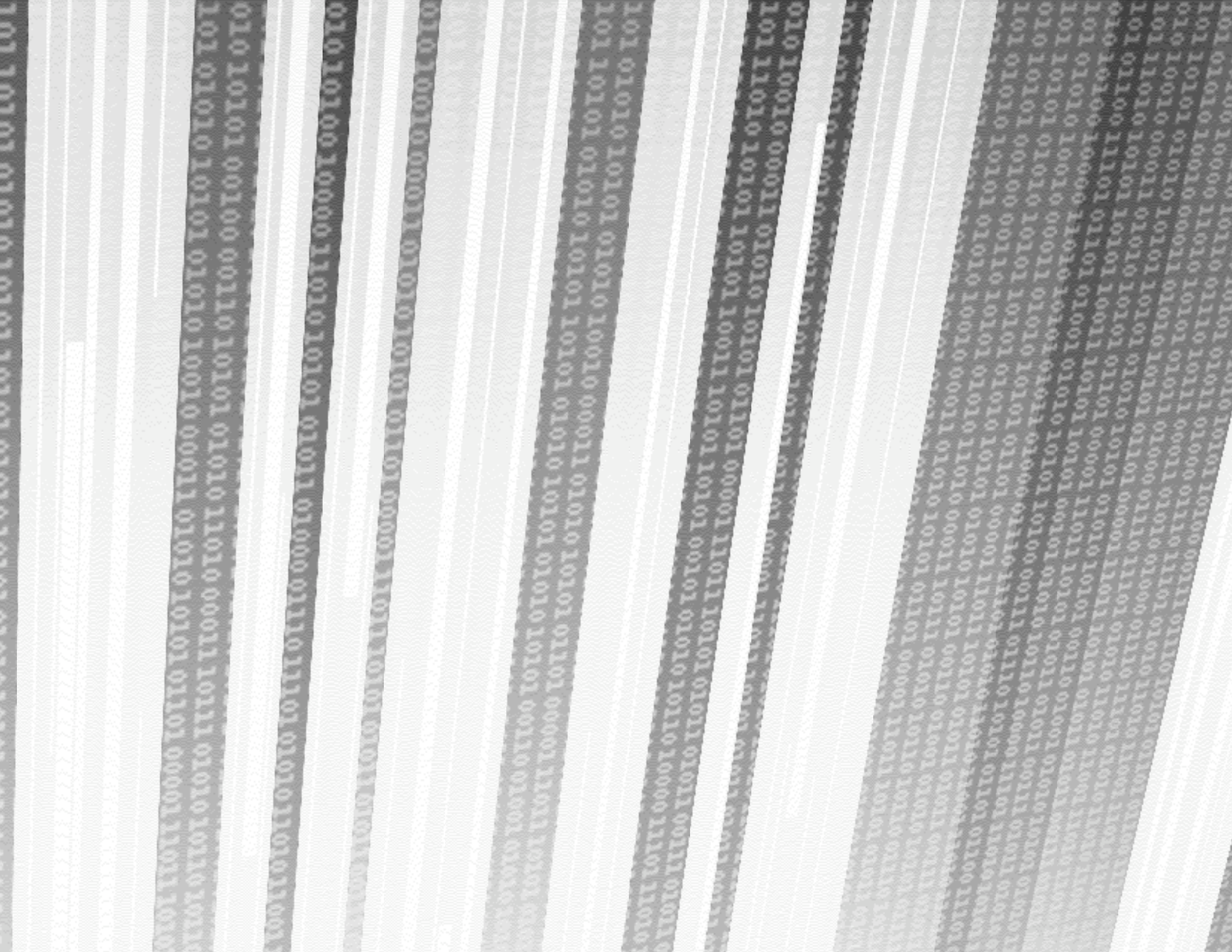
WAS			IS NOW		
Program Title	**Code**	**Deg/Cert**	**Program Title**	**Code**	**Deg/Cert**
This list does not include changes in program requirements.					
Automotive Technology	CTATC	Certificate	Automotive Mechanics	CFAM	Certificate
Auto Body Refinishing & Repair	CTABR	Certificate	Collision Repair	CFCR	Certificate
Classic Auto Restoration	CTCAR	Certificate	Auto Restoration and Hot Rod Fabrication	CFAR	Certificate
Computer Networking Operating Systems	CVCNOS	Adv Certificate	Computer Networking Operating Systems I	CVCNO	Adv Certificate
Construction Management	APCONM	AAS Degree	Construction Management	AACMG	AA Degree
Electronics Technology	CTELE	Certificate	Industrial Electronics Technology	CFIET	Certificate
General Studies in Applied Science	APGSAS	AAS Degree	Occupational Studies	APOST	AAS Degree
Robotics	CTROB	Certificate	Manufacturing and Industrial Computing	CTMIC	Certificate

New Programs

Program Title	Code	Deg/Cert
Computer Networking Operating Systems II	CVCNOP	Advanced Certificate
Power Equipment Technology	CTPET	Certificate
Elementary Education	AAELEM	AA Degree
Secondary Education	AASEC	AA Degree

Discontinued Programs

Program Title	Code	Deg/Cert
Automotive Mechanics	CVAMA	Advanced Certificate
Automotive Mechanics	APAUTM	AAS Degree
Collision Repair	APCOLM	AAS Degree
Collision Repair	CVCOLR	Advanced Certificate
Fluid Power	CTFLPC	Certificate
Machine Operator	CTMOC	Certificate
Sterile Processing and Distribution	CCSPDC	Certificate of Completion
Surgical Technology	CFSURC	Certificate



Personnel

Personnel

This is a partial list. For a comprehensive list of personnel, refer to the WCC Staff Directory.

Board of Trustees

Member	Term Expires
David Rutledge, Chair	December 31, 2002
Harry Konschuh, Vice Chair	December 31, 2002
Mary Schroer, Secretary	December 31, 2004
Mary Branch, Treasurer	December 31, 2004
Richard W. Bailey, Trustee	December 31, 2002
Richard J. Landau, Trustee	December 31, 2006
Diana McKnight-Morton, Trustee	December 31, 2006

Executive Officers

Whitworth, Larry L. 1998
President
B.A. - Adrian College
M.B.A. - Duquesne University
Ed.D. - University of Pittsburgh

Palay, Roger.....1975
Interim Executive Vice President for Instruction
B.S. - University of Chicago
M.S. - University of Wisconsin

Wojnowski, Judith L. 1978
Vice President of Administration and Finance
B.S. - Canisius College
C.P.A. - State of Michigan

Flowers, Damon 1994
Associate Vice President of Facilities Development and Operations
B.S. - Lawrence Technological University
M.S. - Central Michigan University

Kruzel, Douglas P. 2001
Associate Vice President of Human Resources
B.S. - University of Toledo
M.B.A. - University of Toledo

Ladha, Aminmohamed J. 1995
Chief Information Officer
B.S. - Eastern Michigan University
M.B.A. - Eastern Michigan University

Williams, Calvin 1969
Associate Vice President of Student Services
A.B.- Western Michigan University
A.M. - The University of Michigan
Ph.D. - The University of Michigan

Deans

Abernethy, Bill 1993
Dean of Humanities and Social Sciences
B.A. - University of Oregon
M.A. - University of Oregon
Ph.D. - University of Wisconsin

Blain, Adella M. 1975
Dean of Learning Resources
B.A. - The University of Michigan
M.A.L.S. - The University of Michigan

Blakey, Linda S. 1988
Dean of Enrollment Services
B.S. - The University of Michigan
M.S. - The University of Nevada at Las Vegas
M.A. - The University of Michigan

Dries, Cathie 1989
Dean of Continuing Education and Community Services
A.A. - Delta Community College
B.A. - Michigan State University
M.A. - Central Michigan University

Lee, Granville W. 1990
Dean of Health and Applied Technologies
B.S. - New York University
M.B.A. - University of Dayton
Ed. Spec. - Wayne State University

Showalter, Martha.....1980
Dean of Math, Natural and Behavioral Sciences
B.S. - Ohio State University
B.A. - Ohio State University
M.Ed. - University of Houston

Wilson, Rosemary 1986
Dean of Business and Computer Technologies
B.S. - Milligan College
M.B.A. - University of Notre Dame

Faculty and Professional Staff

Abella, Mohammed 1999
Faculty: Mathematics
Ph.D. - University of Miami
M.S. - University of Miami
B.S. - University of Bradford, England

Abrams, Terry 1990
Faculty / Department Chair: Visual Arts
E.D.M. - Boston University
B.F.A. - Maryland Institute College of Art and Design
Certificate - Agfa-Gevaert

Adler, Sally 1993
Faculty: Public Service Careers
B.S. - Pennsylvania State University
M.S. - Pennsylvania State University
Certificate - PA Dept of Education

Aeilts, Larry 1999
Director of Enrollment: Enrollment Services
B.B.A. - Cleary College
M.S. - Walsh College

Allison, Lynn M. 1988
Faculty: Business Office Systems
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University
M.B.E. - Eastern Michigan University

Anders, Derek F.....1999
Specialist: Information Systems
Certificate - Washtenaw Community College
A.D. - Livonia Career Center

Anderson, Laurice A. 1998
Faculty: Performing Arts
B.A. - Butler University
M.F.A. - The University of Michigan

Andi, Kimberly M. 1995
Coordinator: Health / Public Services Programs
A.D. - Washtenaw Community College
B.A. - Eastern Michigan University

Atkinson, John H. 1997
Faculty: Public Service Training
B.A - The University of Michigan
J.D. - Detroit College of Law
M.P.A. - Eastern Michigan University

Avinger, Charles 1992
Faculty: English / Writing
B.S. - University of Alabama
M.A. - University of Alabama

Babcock, H. Lind 1994
Faculty: Visual Arts Technology
B.F.A. - Michigan State University
M.A. - Central Michigan University
M.F.A. - Kent State University

Baker, Gerald A. 1975
Faculty: Allied Health / Radiography
A.A.S. - Wayne County Community College
B.S. - Ferris State University
R.T. - The American Registry of Radiologic Technologists
M.Ed. - The University of Michigan

Baker, Jennifer L. 1995
Faculty: Visual Arts Technology
A.D. - Washtenaw Community College
A.B. - The University of Michigan
M.F.A. - Rhode Island School of Design

Baker, Mark E. 1994
Firearms Range Master: Public Service Training
A.D. - Henry Ford Community College

Batell, Mark F. 1984
Faculty: Mathematics
B.A. - Knox College
M.A. - The University of Michigan
M.A. - The University of Michigan

Bayer, Deborah K. 1994
Faculty: English / Writing
B.A. - Michigan State University
M.A. - Michigan State University

Beauchamp, Jillaine.....1976
Faculty: Culinary and Hospitality Management
B.S. - Eastern Michigan University
M.S. - The University of Michigan

Bellers, Clifford 1968
Faculty / Department Chair: Business / Accounting
B.B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Bhattacharyya, Nilotpal 1999
Unix Administrator: Information Services
B.M.S. - University of Gaubati

Biederman, Rosalyn L. 1967
Faculty / Department Chair: Foreign Languages
B.A. - Ohio State University
M.A. - Ohio State University

Bila, Dennis W. 1969
Faculty: Mathematics

B.S. - Central Michigan University
M.A. - Wayne State University

Bogue, Robert A. 1984
Instructional Lab Assistant: Automotive Services
A.D. - Washtenaw Community College
Certificate - State of Michigan
B.S.Ed. - The University of Michigan
Certificate - A.S.E.

Bracco, Patrick..... 2000
Systems Analyst III: Information Services
B.S.E. - The University of Michigan
M.S.E. - The University of Michigan

Brandenburg, Elaine M. 1997
Director: Contract Training Project
B.S. - Michigan State University

Brown, Kate M. 1988
Specialist: Student Resources / Women's Center
A.D. - Washtenaw Community College
B.S.W. - Eastern Michigan University

Jennifer Brunt.....2000
Assistant: Human Resources Management
A.D. - Washtenaw Community College

Burgen, Clarence 1997
Manager: Mechanical Systems

Burke, Starr 2000
Faculty: Behavioral Sciences
B.A. - Wayne State University
M.A. - Eastern Michigan University
Ph.D - California Coast University

Butcher, Kathleen 1989
Faculty: Physical Science
B.S. - St. Mary's College
M.S. - Wayne State University

Byrne, Heather 2000
Director of Student Development and Activities
B.A. - The University of Michigan
M.B.A. - Goldengate University

Charlton, Eleanor 1966
Faculty / Department Chair: Business Office Systems
B.S. - Central Michigan University
M.A. - Central Michigan University

Chatas, Kristin 2001
Faculty: Mathematics
B.A. Ed. - University of Michigan
M.A. - University of Notre Dame

Chisholm, Arnett 1988
Associate Counselor: Counseling, Career Planning and Placement
B.S. - The University of Michigan
M.A. - Eastern Michigan University

Clark, Diana 1989
Counselor: Humanities and Social Services
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Cleary, William T., Jr. 1983
Faculty: Electricity / Electronics
A.S.E.E.T. - University of Maine
B.E.E.T. - University of Maine
M.B.A. - University of Maine

Cocco, Richard 2000
Classroom Technical Coordinator: Media Services
A.D. - Washtenaw Community College

Crane, Elizabeth 2000
Faculty: Internet Professional
B.S. - Williamette University
M.S. - The University of Michigan

Crean, Patricia K. 1996
Director of Lifelong Education: Continuing Education and Community Services
M.A. - Michigan State University
B.A. - Western Michigan University

Crider, Patricia.....1997
Coordinator: Technical Education and Construction Institute
A.D. - Washtenaw Community College
J.M.N. - United States Department of Labor
B.A. - Concordia College

Croake, Edith M. 1966
Faculty: English / Writing
B.A. - The University of Michigan
M.A.T. - Northwestern University
M.A. - Northwestern University
D.A. - The University of Michigan

Cullen, Kathy A. 1996
Director: Customized Training Projects
B.A. - State University of New York, Albany

Culver, Rosalyn 1989
Faculty: Business Office Systems
B.S. - Michigan State University
M.A. - Michigan State University

Currie, Kathy 1989
Coordinator: Enrollment Services
A.D. - Washtenaw Community College

Cygnar, Patricia 1989
Director: Curriculum and Articulation Services

B.F.A. - University of Illinois
M.Ed. - University of Illinois

Czinski, Margo **1999**
Faculty: English / Writing
B.A. - Michigan State University
M.A. - The University of Michigan

Daniels, Cheryl **1990**
Employment Specialist: Human Resource Management
A.A. - Schoolcraft College

DeCamp, JoAnna **1996**
Director: Cool Project
M.S.W. - The University of Michigan
B.A. - Brooklyn College

Dedhia, Hiralal **1987**
Clinical Instructor: Respiratory Therapy
A.D. - Washtenaw Community College
B.S. - University of Poona
M.S. - Madonna College

Deinzer, Carol **1999**
Faculty: Culinary & Hospitality Management
A.C. - Monroe County Community College

DeMerrill, Diane J. **1990**
Coordinator, Eastern Extension Center: Adult Transitions

Dick, Roger **1979**
Faculty: Industrial Technology
A.S. - Ferris State College
B.S. - Western Michigan University
M.A. - Eastern Michigan University

Diehl, Margaret **2001**
Systems Analyst III: Information Systems

Donahey, Jeffrey **1984**
Faculty: Industrial Technology
B.S. - The University of Michigan

Downen, Gary W. **1983**
Faculty / Department Chair: Electricity / Electronics
B.G.S. - The University of Michigan
M.A. - Eastern Michigan University

Downey, Patrick **1994**
Manager: Conference Services

Eby, David **1999**
IT Support Specialist: Information Systems
A.S. - Northwestern Michigan College
B.S. - Lake Superior State University

Egan, James **1989**
Faculty: Mathematics
B.A. - Case Western Reserve University
B.S. - Case Western Reserve University
M.S. - The University of Michigan
M.S. - The University of Michigan

Ellen, Kim **1998**
Coordinator, Northern Extension Center: Regional Services
B.A. - Michigan State University

Ennes, Steven M. **1987**
Faculty / Department Chair: Business / Accounting
A.A.S. - Macomb Community College
B.S. - Western Michigan University

Everin, William J. **1997**
Research Analyst: Institutional Research
B.S. - Northwestern University
M.S. - Purdue University

Farrackand, Jamall **1997**
Security Patrol Officer: Campus Security
A.D. - Washtenaw Community College

Faulkner, Mary K. **1983**
Administrative Assistant to the Board of Trustees
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Fauri, Greta **1977**
Student Services Advisor: Children's Center
B.A. - Adrian College

Fayaz, Amir **2000**
Faculty: Physics
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Fenty, Joseph **1999**
Manager: Academic Testing, Entry Assessment, and Faculty Support Services
B.B.A. - Pace University
M.A. - The University of Michigan
M.A. - University of Northern Iowa

Ferguson, Russell **2000**
Faculty: Automotive Services

Fielding, Elaine **2000**
Statistical Analyst: Institutional Research
B.A. - Smith College
M.S. - University of Wisconsin
Ph.E. - University of Wisconsin

Fillinger, Barbara **2001**
Budget Director, Financial Analyst: Finacial Services
B.S. - Oakland University
M.S. - Walsh College

Figg, William **1972**

Faculty / Department Chair: Welding and Fabrication
A.D. - Washtenaw Community College

Finkbeiner, Betty Ladley 1969
Faculty: Allied Health / Dental Assisting
A.A. - Grand Rapids Junior College
C.D.A. - Dental Assistance National Board
R.D.A. - Michigante Board of Dentistry
B.S. - The University of Michigan
M.S. - The University of Michigan

Finkbeiner, Charles A. 1975
Faculty: Computer Information Systems
A.D. - Washtenaw Community College
B.S. - The University of Michigan
M.S. - The University of Michigan

Fitzpatrick, David J. 1996
Faculty: Social Science
Ph.D - The University of Michigan
A.M. - The University of Michigan
B.S. - United States Military Academy

Flack Jr., Joseph L. 1990
Faculty: Business / Accounting
B.A. - Eastern Michigan University
M.B.A. - University of Detroit
J.D. - Detroit College of Law

Foster, Brenda 1997
Faculty: Mathematics
A.A. - Seattle Central Community College
B.A. - The University of Washington
M.A. - The University of California

Foster, Connie S. 1990
Faculty / Department Chair: Allied Health / Radiography
A.D. - Washtenaw Community College
B.S. - Central Michigan University
M.A. - Eastern Michigan University

Fracker, Ronald 1999
Faculty / Productions Director / Department Chair: Performing Arts
B.A. - The University of Michigan
M.A. - The University of Michigan

Frye, Iota H. 1975
Counselor: Counseling, Career Planning and Placement
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Galant, Richard.....1978
Administrator: Grants and Accreditation
A.B. - The University of Michigan
A.M. - The University of Michigan
Ph.D. - The University of Michigan

Galea, Michael 1998
Faculty / Department Chair: Computer Information Systems
B.S. - Wayne State University
M.A. - Wayne State University

Galvin, Ralph H. 1984
Director: Public Service Training
B.S. - Nazareth College

Garey, Michelle.....2001
Faculty: Foreign Languages

Gerhardt, Laura 1985
Counselor: Business and Computer Technologies
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Gerlitz, Frank 1991
Faculty: Drafting
B.S. - University of Wisconsin
M.S. - University of Wisconsin
Ph.D. - University of Wisconsin

Geyer, Philip 1998
Faculty: Computer Information Systems
B.S. - The University of Michigan
M.S. - The University of Michigan

Ghrist, William 1996
Manager: Maintenance
A.D. - Washtenaw Community College

Gibson, Maxine.....1990
Faculty: English / Writing
B.S. - Eastern Michigan University
M.A. - The University of Michigan

Gilgenbach, Catharine H. 1998
Specialist: Student Resources / Women's Center
B.S. - Wisconsin State University
M.A. - Eastern Michigan University

Glass, Michael K. 1991
Student Services Advisor: Club Sports
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University
M.S. - Eastern Michigan University

Glowski, Susan K. 1988
Faculty: English / Writing
B.A. - Beloit College
M.A. - San Francisco State University

Glushyn, Diana R. 1979
Supervisor: Clerical Services

Goldberg, David.....1977
Faculty: Mathematics
B.S. - The University of Michigan

Goodkin, Barbara H.....1975
Faculty: Nursing

B.S.N. - The University of Michigan
M.S. - The University of Michigan

Gracie, Cheryl D. 1989
Faculty: Business/Accounting
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University
J.D. - University of Oregon
C.P.A. - The State of Michigan

Greashaber, Anne L. 1997
Professional Services Instructor: Adult Transitions
B.A. - The University of Michigan
M.A. - The University of Michigan

Green, Margaret 2001
Faculty: English/Writing

Griffith, Michael 2000
Coordinator, UA/Target Marketing: Admissions
B.A. - University of Toledo

Grimes, William L. 1991
Faculty: Business/Accounting
B.A. - University of Southern California
M.A. - The University of Michigan
M.B.A. - University of California - L.A.

Groce, Kimberly.....1999
Specialist: Student Resources/Women's Center
L.L - State of Michigan
B.S.W. - University of Detroit
M.A. - Eastern Michigan University

Grossman, Esta 1975
Faculty/Department Chair: Life Sciences
B.A. - Pembroke College in Brown University
M.A. - The City College of New York
M.S.W. - The University of Michigan

Grotrian, Paulette 1980
Faculty: Humanities
B.A. - Valparaiso University
M.A. - Valparaiso University
M.A. - Eastern Michigan University

Grzegorczyk, Phyllis.....1978
Faculty: Nursing
B.S. - The University of Michigan
M.S. - The University of Michigan
S. A. - The University of Michigan
Ph.D. - The University of Michigan

Guastella, C. Dennis 1980
Faculty: Visual Arts Technology
A.A. - Macomb County Community College
B.F.A. - Wayne State University
M.F.A. - Eastern Michigan University

Gudsen, Neil.....2000
Program Manager: CIS/BOS
J.D. - University of Detroit

Hackmann, Bruce 1999
Faculty: Humanities
Certificate - Pennsylvania Department of Education
B.A. - Adrian College

Hageman, Rebecca.....2000
Information Systems Support Specialist: Information Systems
A.A.S. - Washtenaw Community College
B. B. A. - Cleary College

Hagood, Robert M. 1997
Faculty/Department Chair: Physical Science
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Hall, Clyde 1978
Faculty: Welding and Fabrication
A.D. - Washtenaw Community College
B.S. - The University of Michigan
A.W.S. - Certified Welding Inspector

Halliday, Geoffrey B. 1997
Network Administrator: Information Systems
A.D. - Washtenaw Community College

Hammond, Linda.....1987
Director of Business and Industry Services: Continuing Education/Community Services
B.A - The University of Michigan
M.A. - The University of Michigan

Hann, David F. 1986
Director of Accounting Services: Financial Services
B.S. - Brigham Young University
M.A. - Eastern Michigan University

Hardy, Steven.....2001
Controller: Financial Services
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University

Hargrave, Ralph.....1995
Counselor: Health and Applied Technology
B.D. - Payne Seminary University
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Harris, Sally D. 1981
Associate Counselor: Counseling/Career Planning
A.D. - Washtenaw Community College
B.A. - Concordia College
M.A. - Eastern Michigan University

Harrison, Venita 1994
Office Coordinator: Human Resources Management
A.D. - Washtenaw Community College

Hasselbach, Clarence 2000
Faculty: Computer Information Systems
B.W. - Michigan State University
M.S. - University of South Carolina
M.A. - University of California - Berkeley

Hatcher, Robert.....2000
Faculty: Mathematics
B.A. - The University of Michigan

Hatcher, Ruth 1981
Faculty: English / Writing
A.B. - Earlham College
M.A. - The University of Michigan

Hawkins, Janet L. 1977
Coordinator, Public Information: Public Relations and Marketing Services
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Hayes, Catherine 2000
Faculty: Internet Professional
B.A. - The University of Michigan

Heidebrink, Gregg S. 1995
Faculty: Social Science
B.A. - Iowa State University
M.A. - Southern Methodist University

Heise, Anne E. 1993
Faculty: Life Sciences
B.A. - Swarthmore College
M.S. - University of Vermont

Helwig, Lauren 2001
Academic Advising Coordinator: Academic Placement, Counseling and Support Services
B.A. - The University of Michigan
M.A. - The University of Michigan

Hemsteger, Thomas 1991
Faculty: Automotive Services
A.A.S.- Ferris State University
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Hill, Birgitte 1986
Accountant for Cash Management: Financial Services
B.A. - The University of Michigan
CCM - Treasury Management Association

Hommel, Judith C. 1992
Executive Associate to the President
A.A. - Cottey Junior College
B.S. - University of Oklahoma
B.F.A. - Eastern Michigan University

Horne, Beth 1997
Laboratory Assistant: Culinary & Hospitality Management
A.A.B. - University of Toledo
Certificate - University of Toledo

Horowitz, Frederick A. 1968
Faculty: Humanities
B.A. - Yale University
B.F.A. - Yale University
M.F.A. - The University of Michigan

Hosier, Deborah 2000
Manager of Student Accounting: Financial Services
B.B.A. - Cleary College

Hoth, Bradley.....1987
Student Advisor: Career Planning and Placement
A.A. - Henry Ford Community College
B.A. - Michigan State University
M.A. - Eastern Michigan University

Hower, Guy W. 1966
Director: Financial Aid
B.B.A. - The University of Michigan
M.A. - The University of Michigan

Hower, Laura 2000
Graphic Services Specialist: Public Relations and Marketing Services
A.T. S. - Washtenaw Community College

Hughes, Patrick 2000
Manager of Network / Communications: Information Systems
A.S. - Henry Ford Community College
B.S. - Madonna College

Hunt, Barbara 1968
Faculty: English / Writing
B.A. - University of Toledo
M.A. - The University of Michigan
D.A. - The University of Michigan

Iler, Joanne L. 1994
Coordinator: Financial Aid
A.A. - Concordia College
B.A. - Concordia College
M. Ed. - University of Toledo

Jackson, Lawrence 1998
Laboratory Instructor: Public Service Training
Certificate - State of Michigan
B.S. - Wayne State University

James, William E. 1994

Faculty: English / Writing
B.A. - The University of Michigan
M.A. - Wayne State University

Jenkins, Joyce 1998
SCT End User Trainer: Information Systems
B.S. - Michigan State University

Jett, Sukanya J. 1992
Associate Director: Enrollement Services
A.A. - Cottey Junior College
B.A. - Radford University
M.S.A. - Central Michigan University

Ji, Shiping 1999
Systems Analyst III: Information Systems
B.S. - Eastern Michigan University

Jindal, Usha R. 1982
Faculty: Internet Professional
B.S. - Delhi University
B.S. - Pennsylvania State University
M.S. - Pennsylvania State University

Johnson, Charles 1998
Faculty: Humanities
B.A. - Oakland University
M.A. - Michigan State University
Ph.D. - Michigan State University

Johnston, Mark 1990
Faculty: Business / Accounting
B.B.A. - Eastern Michigan University
M.S. - Walsh College

Jones, Katherine L. 1992
Administrative Associate: Business and Computer Technology
B.F.A. - Denison University
M.A. - Eastern Michigan University

Jordan, Cole L. 1978
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.A. - Wayne State University
M.A. - Eastern Michigan University

Jordan, Lester 1979
Faculty: Automotive Services
B.A. - Eastern Michigan University
M.Ed. - Wayne State University

Jozwik, Deborah L. 1998
Support Specialist: Information Systems
A.D. - Washtenaw Community College

Kalmbach, John 2000
Director of Media Services: Learning Technologies
B.A. - University of Toledo
M.Ed. - University of Toledo
Ed.D. - University of Toledo

Kapp, George 1970
Faculty: Physical Science
A.D. - Washtenaw Community College
B.S.E. - The University of Michigan

Kasischke, Laura 1992
Faculty: English / Writing
B.A. - The University of Michigan
M.F.A. - The University of Michigan

Kenyon, Barbara H. 2000
Coordinator of Basic Skills: Instructional Administration
B.A. - Rutgers University
M.A. - University of California at Los Angeles

Kerans, Ellen 1991
Director of Development: WCC Foundation
B.A. - The University of Michigan

Kerr, John 1993
Faculty: Social Science
B.S.Ed. - Central Michigan University
M.A. - Western Michigan University
M.A. - Western Michigan University

Kibens, Maija 1976
Faculty: Humanities
B.A. - Mount Holyoke College
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Kier, G. Daniel 2001
Faculty: Visual Arts Technology
B.A. - Michigan State University
M.A. - Eastern Michigan University

King, Linda 1998
Director: Adult Transitions
A.B. - The University of Michigan
A.M. - The University of Michigan

Kinney, Nancy 1995
Faculty: Social Science
B.A. - University of Maine
M.A. - University of Maine
M.A. - The University of Michigan

Kirkland, Robert W. 1988
Faculty: Humanities
B.A. - The University of Michigan
M.A. - The University of Michigan

Komarmy, Tracy L. 1993
Faculty / Department Chair: Performing Arts
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Krantz - Fischer, Carrie 1992
Faculty / Department Chair: English / Writing
B.S.- Edinboro University Pennsylvania
M.A.- Bowling Green State University

Krieg, Laurence J. 1983
Faculty / Department Chair: Internet Professional
B.A. - College of Wooster
M.A. - The University of Michigan
Ph.D. - The University of Michigan

LaHote, Randy.....1992
Faculty / Department Chair: Social Science
B.A. - University of Toledo
M.A. - University of Toledo

Laycock, Gregory 2001
Scheduling / Database Analyst: Educational Services
B.S. - The University of Michigan

Lee, Michael N. 1998
Coordinator of Computer Labs: Business Division
A.A. - Washtenaw Community College

Lee, Sherry S. 1994
Faculty: Nursing
B.S.N. - The University of Michigan
M.S.N. - Wayne State University
D.I.P. - Henry Ford Hospital School of Nursing

Levy, Mary L.....1981
Systems Development Manger: Information Systems
B.A. - College of Wooster
M.A. - The University of Michigan

Lewis, James.....2000
Faculty: Electronics
B.S. - Southern Illinois University
M.A. - Eastern Michigan University

Lippens, Joan.....1993
Faculty / Department Chair: Academic Skills
B.A. - Queen's University, Kingston
B. Ed - Queen's University, Kingston
M.A. - Eastern Michigan University

Liu, Victor.....1991
Director of Library Systems: Learning Resources Center
B.A. - University of South Carolina
M.A. - Michigan State University
M.I.L.S. - The University of Michigan

Lockard, John M.....1970
Faculty: Humanities

Longino, Charlene 1994
Director: Children's Center
B.A. - Northern Illinois University
M.A. - Eastern Michigan University

Lu, Yin 1994
Faculty: Mathematics
B.S. - National Taiwan University
M.S. - National Taiwan Normal University
Ph.D. - State University of New York, Buffalo

Lukiewski, Linda 2000
Faculty: Nursing
A.D.N. - Henry Ford Community College
R.N.C. - State of Michigan

Lutz, Geoffrey A. 1986
Systems Analyst II: Information Systems
B.S. - The University of Michigan

Lyjak, Laura A. 2000
Editor: Public Relations and Marketing Services
B.A. - The University of Michigan
M.A. - Eastern Michigan University

Mancy, Nicholas 2000
Director of Labor Relations: Human Resources Management
B.S. - Ohio State University
J.D. - University of Toledo

Mann, John B. 1971
Faculty / Department Chair: Automotive Service
B.S. - Eastern Michigan University
M.A. - The University of Michigan
A.S.E. - National Auto Technical Certification

Mansour, Khaled 2000
Faculty: Computer Information Systems
M.S. - Western Michigan University
B.S. - Yarmouk University

Marinkovski, Elizabeta 1999
Associate: Human Resources
A.D. - Washtenaw Community College

McCarthy, Sandra 1999
Associate Librarian: Learning Technologies
B.A. - Wayne State University
M.L.S. - Wayne State University
M.A. - Mercy College of Detroit

McCracken, Alexandra 2000
Coordinator: MTIES
A.D. - Washtenaw Community College
B.B.A. - The University of Michigan, Flint

McGraw, Michael 1993
Faculty: Drafting
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

McGuire, Belinda G. 1988

Faculty: Drafting
A.S. - Monroe County Community College
B.F.A. - Eastern Michigan University
M.Ed. - The University of Toledo

McPherson, Paul D. 1990
Faculty/Department Chair: Culinary and Hospitality Management
B.A. - Madonna College
M.S.A. - Central Michigan University
Certificate - American Culinary Federation

Meade, Roland 1990
Faculty: Computer Information Systems
B.S. - Northern Michigan University
M.A. - Western Michigan University
Ph.D. - Western Michigan University

Miller, Jean 1989
Faculty: English/Writing
B.A. - Marygrove College
M.A. - University of Tulsa

Moulton, Maxine 1989
Faculty: Nursing
B.S.N. - The University of Michigan
REGIS - State of Michigan
M.S.N. - Eastern Michigan University

Mourad, Roger.....1996
Director: Institutional Research
B.A. - The University of Michigan
J.D. - The University of Michigan
M.S. - The University of Michigan
Ph.D. - The University of Michigan

Moy, William 1968
Faculty: Behavioral Sciences
B.A. - Valparaiso University

Mullen, Marjorie 1980
Manager of Payroll: Financial Services

Murphy, Vivian A. 1993
Faculty: Allied Health/Pharmacy and Surgical Technology
A.S. - Clark State College
B.S. - Oakland University

Naylor, Michael L. 1994
Faculty: Performing Arts
B.M. - The University of Miami
M.M. - The University of Miami
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Nelson, Lisa 2002
Curriculum Development Specialist: Curriculum and Articulation Services
B.A. Marygrove College

Nelson, William H. 1992
Clinical Instructor: Allied Health/Radiography
A.D. - Washtenaw Community College
B.S. - Western Michigan University
M.A. - The University of Michigan

Nestorak, Theresa 1989
Faculty: Nursing
B.S.N. - The University of Michigan
REGIS - State of Michigan
M.S.N. - Eastern Michigan University

Nevers, William B. 1975
Faculty: Life Sciences
B.S. - Wayne State University
D.D.S. - The University of Michigan School of Dentistry

Niedson, Roberta 2000
Employment Manager/Recruiter: Human Resource Management
A.A. - Henry Ford Community College
B.S. - The University of Michigan

Norwood, Mimi Y. 1993
Faculty: Human Services
A.D. - Washtenaw Community College
B.S. - Wayne State University
M.S.W. - The University of Michigan
M.A. - Morehead State University

Nwokeji, Linda 1999
Director of Compensation and Benefits: Human Resource Management
B.A. - Florida State University
M.B.A. - Butler University

Odeleye, Carol 2000
Compensation/Benefits Analyst: Human Resource Management
B.B.A. - Eastern Michigan University

Ong, Boon Neo Julianna.....1992
Systems Analyst II: Information Systems
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University

Ortega, Maria.....1992
Faculty/Department Chair: Behavioral Sciences
B.S. - Central Michigan University
M.A. - Michigan State University

Paas, Cecilia 1998
Counselor: Counseling/Career Planning and Placement
A.D. - Washtenaw Community College
License - State of Michigan
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Parker, Karen J. 1989
Other Funds Accountant: Financial Services
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Pawloski, Judith A. 1994
Faculty: Nursing
B.S.N. - Wayne State University
M.S.N. - Wayne State University
D.I.P. - Mercy School of Nursing - Detroit

Peck, Joshua P. 1996
Hardware Network Specialist: Information Systems
A.D. - Washtenaw Community College
A.D. - Washtenaw Community College

Penird, Thomas 2000
Faculty: Industrial Technology
A.T.S. - Washtenaw Community College

Penner, Charles A. 2002
Director of Small Business Development
B.A. - Hampshire College
M.P.P.M. - Yale University

Perez, Laura 1993
Faculty: Mathematics
B.S. - Bowling Green State University
M.A. - Bowling Green State University

Petty, Dale....1994
Faculty: Electricity/Electronics
B.S.E.E. - State University of New York at Buffalo
MS.C.E. - Case Western Reserve

Phibbs, John 1969
Manager of Reprographics
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Phillips, Robert J....1998
Information Technologies Support Specialist: Information Systems
A.D. - Washtenaw Community College

Pierce, Les 1984
Director: Technical Education
A.A. - Polk Community College
B.A. - University of Florida-Gainesville
B.A.E. - University of Florida-Gainesville
M.Ed. - University of Florida-Gainesville

Pinchock, Sally....1996
Small Business Development Specialist: Washtenaw County Small Business Development Center
B.B.A. - St. Bonaventure University
M.A. - Siena Heights College

Pinnamaneni, Jagadeesh 1999
Systems Analyst II: Information Systems
B.A. - Nagarjuna University, India
B.S. - The University of Michigan

Pleitner, Peter....2001
Faculty: Automotive Services
B.S. - The University of Michigan
M.A. - The University of Michigan

Popovich, James 1999
Faculty: Industrial Technology
B.S. - LeTourneau College
M.S. - Ferris State University

Quail, Michael E....1994
Faculty: Mathematics
B.A. - Wayne State University
M.A. - Eastern Michigan University
M.S.W. - The University of Michigan

Rader, Rosemary....1994
Faculty: Physical Science
B.S. - The University of Wisconsin-Oshkosh
Ph.D. - Purdue University

Redondo, Juan C....1994
Faculty: Humanities
M.A. - University Complutense - Madrid
M.A. - University of California at Berkeley
M.A. - The University of Wisconsin

Reed, Tom 2000
Director of Web Services
B.A. - Kansas State University
M.S. - University of Kansas
Ph.D. - The University of Michigan

Remen, Janet M. 1982
Faculty: Mathematics
B.Sc. - University of Durham
M.S. - The University of Michigan

Rice, Sheila J. 1997
Director of Access Services: Learning Resource Center
A.M.L.S. - The University of Michigan
B.A. - The University of Michigan

Rinke, John 1992
Director: Counseling, Career Planning and Placement
B.S.Ed. - Central Michigan University
M.A. - Michigan State University
Ed.S. - Central Michigan University
Ed.D. - Western Michigan University

Rinn, John 1980

Faculty: Computer Information Systems
A.A. - Port Huron Junior College
A.B. - The University of Michigan
M.S. - The University of Michigan

Ripepe, Suzette D. 1997
Faculty: Allied Health/Pharmacy Technology
Regis - Board of Pharmacy
B.S. - Ferris State University
M.S. - Wayne State University
J.D. - Wayne State University

Robinson, Todd.....1996
Manager: Custodial Services
Certificate - U.S. Air Force

Roof, Rex 2000
Unix Administrator: Information Systems

Roome, Lori 1999
Specialist: Conference Services
B.S. - Michigan State University

Roque, Francisco 1999
Unix Administrator: Information Systems

Rutley, Lillie 2001
Supervisor: Custodial Services
A.A. - Washtenaw Community College

Salter, Vickie 1999
Faculty: Nursing
A.S.N. - Wayne County Community College
B.S.N. - Wayne State University
M.S.N. - University of Phoenix
R.N. - State of Michigan

Schebil, Ronald 2001
Director: Safety and Security

Scheiblauer, Nick.....2001
Web Programmer: Web Services

Schultz, Gary L. 1984
Faculty/Department Chair: Industrial Technology
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Schuster, William 1989
Faculty: Automotive Services
B.A. - Wayne State University
M.A. - Eastern Michigan University

Scott, Kathleen 1971
Librarian: Learning Resource Center
B.A. - University of Iowa
M.A. - University of Iowa

Shier, David 1990
Faculty: Life Sciences
B.S. - Cornell University
Ph.D. - The University of Michigan

Siehl, Chris 1995
Faculty: Behavioral Sciences
B.A. - Wittenburg University
M.A. - Northwestern University
M.S.W. - Michigan State University

Smillie, Catherine.....2001
Director: Public Relations and Marketing Services
B.A. - The University of Michigan
M.A. - The University of Michigan

Stadtfeld, Kathleen A. 1982
Director: Educational Services
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Stafford, Kathryn 2001
Information Officer: Enrollment Services
A.A. - Kellogg Community College
A.B. - University of Michigan
M.B.A. - Michigan State University

Stanford, Adrian 1987
Student Services Advisor: Club Sports
B.S. - Eastern Michigan University

Stempky, Elise 2000
Systems Analyst II: Information Systems
B.B.A. - Eastern Michigan University

Storie, Catherine W. 1992
Faculty: Electricity/Electronics
E.E.T. - USAF Cryptographic School
B.S. - The University of Michigan
M.S. - The University of Michigan

Strayer, Ross 1989
Faculty: Life Sciences
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Strnad, Kathleen B. 1998
Counselor: Math, Natural and Behavioral Sciences
A.B. - Mercy College of Detroit
M.A. - The Fielding Institute
M.A. - Goddard College

Susnick, Stuart B. 1969
Faculty: Social Science
B.A. - Brooklyn College, CUNY

Swan, Barry 1994
Faculty: Drafting
A.A.S. - Oakland Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Swan, Judith 1989
Director: Extension Services and Distance Learning
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Talley, Dana L. 1993
Specialist: Human Resource Management

Tanguay-Hoover, Julie 1994
Graphic Services Coordinator: Public Relations and Marketing Services
B.A. - Center for Creative Studies

Taylor, Daniel.....2000
Coordinator of Public Computing: Learning Resource Center
B.S. - Eastern Michigan University
M.L.S. - Eastern Michigan University

Taylor, Patricia A. 2002
Dean of Academic Placement, Counseling, and Support Services
B.A. - Central Michigan University
M.A. - Central Michigan University
Ed. D. - Eastern Michigan University

Teevens, James 1989
Faculty/Department Chair: Drafting
A.A.S. - Schoolcraft College
B.Arch. - University of Detroit
M.Ind.Ed. - Eastern Michigan University

Tepley, Philip 2000
Intake/Administrative Assistant: Small Business Development Center

Tew, Bonnie E. 1994
Faculty: Humanities
A.A. - Kellogg Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Thoburn, Elisabeth 1995
Faculty/Department Chair: Humanities
B.A. - The University of Michigan
M.A. - The University of Michigan

Thomas, David.....1980
Faculty: Physical Sciences
A.S. - Macomb Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Thomas, Martin.....1995
Manager: Warehouse Services

Thompson, Doreen.....1975
Faculty: Behavioral Sciences
A.B. - Atlantic Union College
Licence es Lettres - University of Paris
M.Ph. - The University of Michigan

Thompson, Dosye.....1993
Faculty: Business Office Systems
B.S. - Wayne State University
M.B.E. - Eastern Michigan University

Tom, Kimberly 1988
Manager, User Support Services: Information Systems
A.D. - Washtenaw Community College
B.A. - The University of Michigan

Townsend, Henry.....1991
Faculty: Public Service Careers
B.A. - The University of Michigan, Flint
M.A. - Eastern Michigan University

Trame, John 1989
Faculty: Electricity/Electronics
B.S. - University of Houston
M.S. - University of Houston
Sp.A. - Eastern Michigan University

Tran, Michael D......1998
IT Support Specialist: Information Systems
B.B.A - Eastern Michigan University

Trapp, Lori J. 1996
Coordinator: Financial Aid
B.A. - Michigan State University

Trosch, Diane J. 1979
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.A. - Concordia College
M.A. - Eastern Michigan University

Turelli, Diane 2001
Faculty: Mathematics
B.S. - Purdue University
M.A. - Purdue University

VanderVeen, Sister Judith 1976
Faculty: Nursing
S.A. - Wayne State University
S.A. - The University of Michigan
Diploma - Mercy Central School of Nursing
REGIS - State of Michigan
B.S.N. - Mercy College of Detroit
M.A. - The University of Michigan

VanGenderen, Gary L. 1982
Faculty: Physical Sciences
B.S. - The University of Michigan
M.S. - Eastern Michigan University

Veasey, Lisa K. 1999
Faculty: English/Writing
B.A. - Eastern Michigan University
M.L.S. - Eastern Michigan University

Velarde, Gloria A. 1990
Faculty/Department Chair: Nursing
B.S.N. - Eastern Michigan University
M.S.N. - Wayne State University

Wagner, Robin L. 1995
Financial Systems Analyst: Financial Services
B.A. - Siena Heights College

Wagner, Sandra L. 1997
Help Desk Specialist: Information Systems
Certificate - Washtenaw Community College
Certificate - Brockton Institute
A.D. - Washtenaw Community College

Wahab, Hanan A. 2000
Faculty: Mathematics

Walline, Cynthia 1987
Student Advisor: Orientation
B.A. - Eastern Michigan University

Walsh, Ruth Anne 1987
Faculty/Department Chair: Public Service Careers
B.A. - University of Toledo
J.D. - University of Toledo

Warkoczeski, Brian 2000
Coordinator: Web Services
B.B.A. - Grand Valley State University

Warner, Elizabeth 1988
Faculty: Academic Skills
B.A. - The University of Michigan
M.A. - San Francisco State University

Warsinske, Thomas G. 1998
Database Analyst/Administrator: Information Systems
B.S. - The University of Michigan
B.S. - Eastern Michigan University

Webster, Brenda J. 1987
Clinical Instructor: Nursing
B.S. - The University of Michigan

Wegrzyn, Nancy D. 1985
Purchasing Coordinator/Buyer: Purchasing/Auxiliary Services
B.S. - Eastern Michigan University
Certificate- - Eastern Michigan University

Welch, Daniel J. 1997
Director: Distance Learning
B.A. - University of Detroit
M.Ed - Wayne State University

Werthmann, Donald 2000
Faculty: Visual Arts Technology
B.F.A. - Wayne State University

Westcott, Richard 1984
Manager: Grounds Maintenance

Westrick, James H. 1997
Supervisor: Campus Security Services
Certificate - Northwestern University

Wilkins, Barry L. 1982
Director: Facilities Management
A.D. - Washtenaw Community College

Willimann, Kristine 1999
Faculty: Visual Arts Technology
B.A. - Michigan State University

Withrow, Jason 2001
Faculty: Internet Professional
B.A. - Capital University
M.A. - University of Akron
M.S.I. - University of Michigan

Woehlke, Laura A. 1993
Director: Purchasing and Auxiliary Services
A.D. - Davenport College of Business
B.S. - Aquinas College
M.S. - Ferris State University

Wood, John D. 1984
Student Advisor: Career Development
B.S. - Michigan State University

Worrell, Sandra M. 1998
Associate Professional Services Faculty: Workplace Learning Center
B.S. - New York State University
M.Ed. - Northeastern University

Wurster, Allen J. 1995
Technician: Testing Center
A.D. - Washtenaw Community College

Young, Colette 1987
Faculty: Business
B.A. - Michigan State University
M.A. - Michigan State University

Young, Mary Etta 1975
Counselor: Counseling, Career Planning and Placement
B.R.E. - Detroit Bible College
B.A. - Eastern Kentucky University
M.A. - Eastern Kentucky University

Program Advisory Committees

Working closely with the faculty to improve the curriculum, keeping instructors current on market trends, and providing advice for updating equipment and facilities are some of the major contributions of program advisory committees. Members of advisory committees, 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 2001-2002

Accounting

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Kathy Gram	Mechtron Engineering Company, Inc.
Steve Schneider	Weidmayer Schneider Raham & Bennet CPA
Judy Walker	Cleary College
Alan Young	Alan Young & Associates

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Anne Cox	Ann Arbor Architects Collaborative
Rick DeTroyer	Pioneer High School
David Pacifico	Pacifico Architects, Inc.
Ken Perkins	Hobbs & Black Architects
Hardy Richardson	Ypsilanti Construction & Maintenance
Ibrahim Vaid	I & Z Design
Justin Wagoner	Student, WCC
Lee Yaros	Henry Ford Community College

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Colleen Holder	Washtenaw County Treasurer's Office
Richard King	Small Business Development Center
Vicky Matthews	Reinhart Realtors
Jennie Needleman	IRI Consultants to Management
Michael O'Rear	Ford Motor Company, Retired
Cecilia Paas	Washtenaw Community College
David Stine	Visteon, Inc.
Sarah Stitt	Washtenaw Community College
Joyce Suber	AAA Michian
Joan Williams	Alcoa FujiKura-Ltd.

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Christine Hitchcock	ALTARUM
Darcelle White	Eastern Michigan University
Jan Wiseman	Catherine McAuley Health System

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Dennis Carmichael	Cimulus
Joyce Girdis	Crystallize
Cathie Gourlay	Net-Linx Publishing Solutions, Inc.
Roy Schmidt	Fry Multimedia
Patricia Schumaker	Schumaker and Company
Victor Volkman	SDRC Imageware

Computer Systems Technology & Computer Networking

Debbie Steiner	University of Michigan
Kim Tom	Washtenaw Community College
Randy Storie	Net Systems Group Design Labs
Vickie Banks Gaynor	Merit Network
Cindy Heilveil	Consultant
Ron Murphree	Network Two
Frank Carlesimo	Ops

Construction Code Advisory Committee

Charles Boulard	City of Ypsilanti
Sue Dodson	Building Director - Westland
Jack Donaldson	Consultant
Harry Hutchinson	City of Ypsilanti
Steve Lindemyer	Consultant
Scott McDonald	Washtenaw County
Tom Miller	Chelsea Area Construction Agency
Larry Pickel	City of Ann Arbor
James Teevens	Washtenaw Community College
Tom Yurkunas	Ypsilanti Township

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Brian Clinette	Comfort Inn
Andy Dahlmann	Bell Tower Hotel
David Doyle	Main Street Ventures
Joni Eastworth	New Directions
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Debbie Hanchett	HDS Services
Kevin Hill	Howell High School
Dan Huntsbarger	Danielson Liberty
David Kabat	Haabs Restaurant
Debbie Locke-Daniel	Ypsilanti Convention Bureau
Jeff Mitchell	Student, WCC
P.J. Moffet	Real Estate One
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Cindy Simonelli	Clarion Hotel
Scott Storbeck	Mediterrano Restaurant
Ann Tirapani	Regional Career Technical Center
Traci Watts	Ann Arbor Convention Bureau
Bill Wright	Barton Hills Country Club
Janna Wyrick	David J. Stantion Associates

Dental Assistant Advisory Committee

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Jed Jacobson, DDS	VP, Delta Dental
Kimberly Rice, DDS	Private Practioner
Tina V. Rich	
Thomas A. Slade, DDS, PC	Private Practioner
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Daniel Lawrence	University of Michigan

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Nicole Hammer	Community Corrections
Shannon Heffner	Student, WCC
Nan Holmes	Retired, WCC
Margaret O'Hare	Student, WCC
John Rinke	Washtenaw Community College

Internet Professional Advisory Committee

Steve Beyer	Student, WCC
Jeff Callender	Q LTD
Jamie Frech	Beyond Interactive
Steve Glauberman	Enlighten
Jacques Habra	Web Elite
Mark Haupschtein	Michigan Live
Julie Kimber	Graduate, WCC
Anna Lu	Graduate, WCC
Peter Morville	Semantic Studios, LLC

Nursing Advisory Committee

Tracy Bevier	Glacier Hills
Brenda Denham	Evangelical Home - Saline
Drew Kenya	Heartland Health Center
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Pam McCoy	Veteran's Affairs Medical Center
Cathy Mitchell	U of M School of Nursing
Michael Murphy	Graduate, WCC
Angela Poppe	Washtenaw Community College
Todd Roark	Graduate, WCC
Rachel Rush	Saline Hospital
Jennifer Schultz	St. Joseph Mercy Hospital
Rebecca Thomason	Graduate, WCC

Pharmacy Technology Advisory Committee

Jamie Curry	Daimler Chrysler
Dennis Delonnay	VA Medical Center
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Ronald Lukasiewicz	Oakland Community College
Cari Marshall	U of M Pharmacy Services
Kiela Samuels	K-Mart Corporation
Deb Sizemore	Home Med
Leza Taylor	U of M Pharmacy Services
Beth Weaver	McKesson HBOC Pharmacy Systems

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Jim Oehl	Big George's Appliance
Bob Foran	Commercial Photographer
Mat Strum	Foto 1 Photographic & Digital Imaging
Ken Owen	Jobo Fototechnic, Inc.

Police Academy Advisory Committee

George Basar	Chief, Ypsilanti Police Department
William Bess	Director U of M Department of Public Safety
Paul Bunten	Chief, Saline Police Department
Brian Mackie	Washtenaw County Prosecutor
Dan Minzey	Sheriff, Washtenaw County Sheriff's Department
Daniel Oates	Chief, Ann Arbor Police Department
John Phillips	Director, Pittsfield Township Department of Public Safety
Lynn Reid	Michigan Commission on Law Enforcement Standards

Radiography Advisory Committee

Betty Allen	Veterans Administration Hospital
Susan Aris	Chelsea Community Hospital
Tim Baker	Veterans Administration Hospital
Cindy Corredine	St. Mary Mercy Hospital
Jody Dennison	Wyandotte General Hospital
Gary Ferow	Bixby Medical Center
Darla Gere	Monroe Mercy Memorial Hospital
Peggy Goodman	Chelsea Community Hospital
Karen Hartman	St. Joseph Mercy Hospital
Susan Love	Saline Community Hospital
Bernadette Makah	Wyandotte General Hospital
Willie McLaughlin	Veterans Administration Hospital
Cathy Rayl	Foote Hospital
Dianna Redman	Monroe Mercy Memorial Hospital
Dorene Stegink	U of M Health Services
Athlious Tinsley	St. Joseph Mercy Hospital

Residential Construction Advisory Committee

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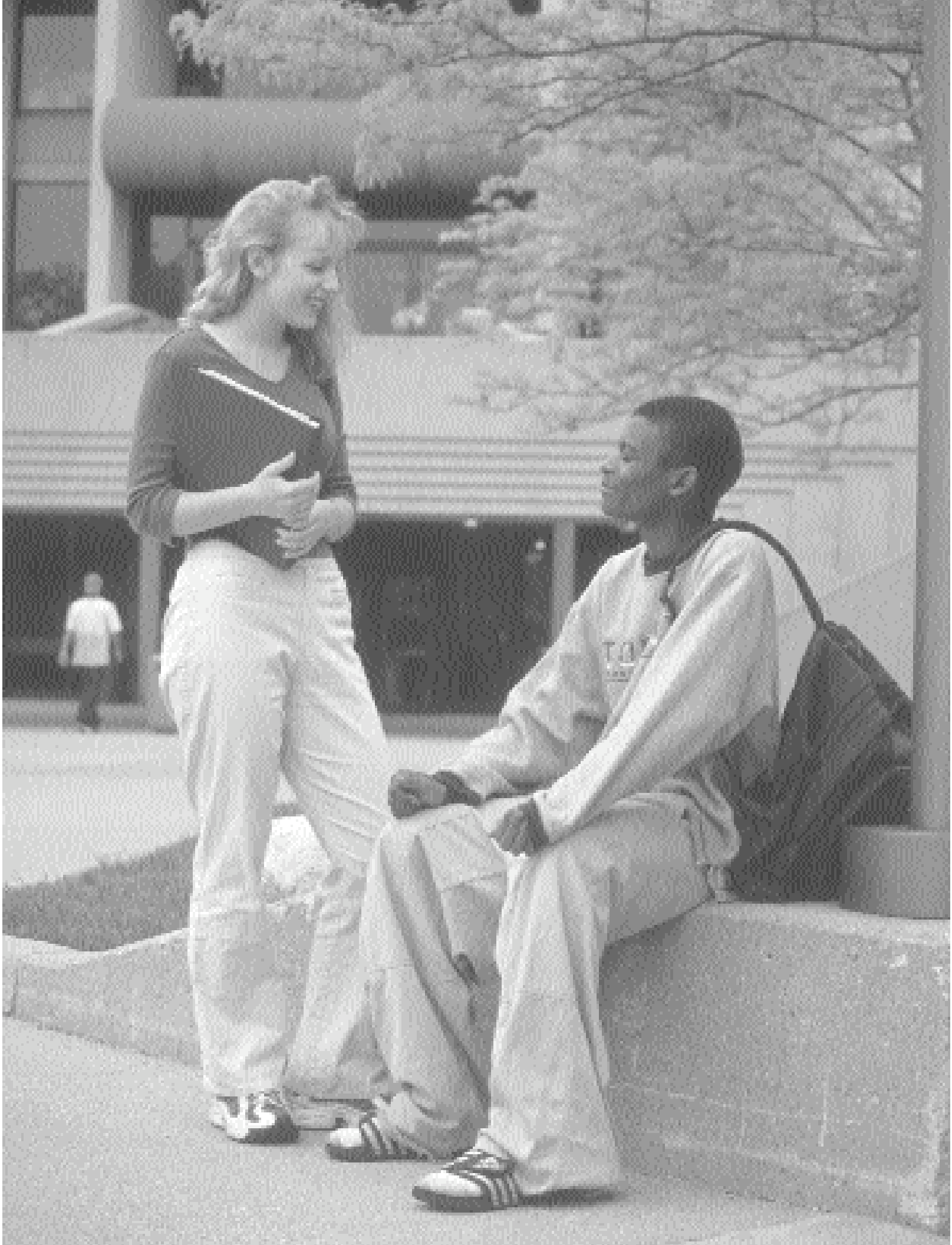
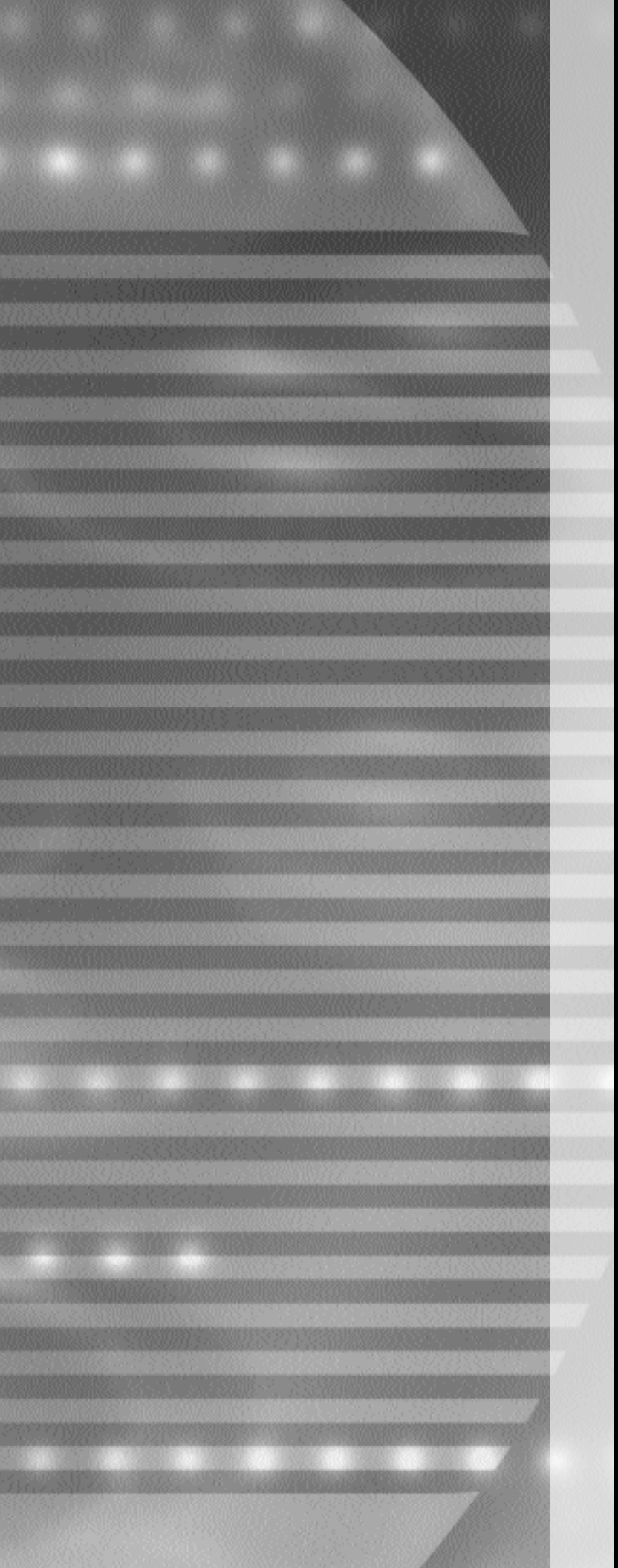
Patricia Harroun	Cardea Construction Company
Allen Lutes	Alpha Contacting, Inc.
Jeff McCabe	Duco Home Services
Larry Salliotte	Salliotte Building Co, Inc.
Maureen Sloan	Washtenaw County Homebuilders Assoc.

Scientific & Technical Communication Committee

Nancy Allen	Eastern Michigan University
Ann Blakeslee	Eastern Michigan University
Ruth Blough	Open Door Communications, Inc.
Maryann Bowen	Independent Contractor
Alison Buno	Pfizer
Mary Carabello	Student, Eastern Michigan University
Michael Dailey	Independent Contractor
Andrea Frazier	Creative Solutions, Inc.
Karen Gilbert	
Catherine Juon	Westpole
Laurie Kantner	Tec-Ed, Inc.
Heather Keeler	Skipping Stones
Tony McReynolds	Student, Eastern Michigan University
Sally Paul	Creative Solutions, Inc.
Gray Reynolds	Compuware
Deb Stacy	Creative Solutions, Inc.
Catherine Titta	Crystallize, Inc.





Glossary

Glossary of terms used at WCC

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 (Dean's Honor Roll) or for cumulative performance at the time of graduation (Graduation Honors).

Accreditation
Recognition that the College or a College program has met standards or requirements set up by an external organization.

Admission
Acceptance of an applicant for enrollment in the College.

Articulation
The process of arranging instructional programs so that students may progress from one educational level to another without loss of credit.

Assessment
The process of determining a student's interests or level of competence.

Audit
To enroll in a College academic credit-bearing course on a non-credit basis. Such credits as the course normally carries are not included as part of the total credit load, however, tuition is assessed like a credit registration. An auditor ("AU") grade is issued and posted to the transcript.

College Withdrawal
The process by which a student discontinues enrollment in all courses.

College Work-study
An award of employment (i.e., an opportunity to work for paid wages on the campus) given to a student based on financial need.

Continuing Education Units (CEU's)
A nationally recognized recording device for substantive non-credit learning experiences. One CEU is defined as ten contact hours of participation in an organized continuing education experience with responsible sponsorship, capable direction, and qualified instruction.

Co-requisite
An additional course which is required to be taken during the same semester with another course.

Course Load/Overload
The total number of credit hours a student is officially registered for in a given semester. A Full-time Student is one who enrolls in 12 or more credit hours per semester; a Part-time Student is one who enrolls in less than 12 credit hours per semester; a Half-time Student is a Part-time student enrolled in at least 6 credit hours per semester. Students enrolling in more than 18 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.

Educational Goal
A student's statement of the goal he/she intends to achieve by attending WCC.

Elective Course
A course which a student may choose to take from a number of alternative courses in order to fulfill a program requirement (see Open Elective and Restricted Elective).

Emeritus Program
A program for county residents who are at least sixty-five years of age which offers tuition-free participation in WCC credit and credit-free courses, workshops and seminars.

Fees
Charges assessed to students other than tuition charges.

Financial Hold
Students are placed on financial hold when they have not met their financial obligations to the College. Students placed on financial hold are not allowed to register for courses, cannot receive their College Certificate, Associate Degree or transcript and are not eligible to receive College services of any kind.

Freshman/First Year Student
A student who has completed fewer than 31 credit hours.

GED Examination
The General Education Development examination is a comprehensive test used to appraise the educational development of adults who have not completed a high school education. By achieving satisfactory scores on the

GED adults may earn a high school equivalency certificate.

General Education Requirements
A body of learning areas which are incorporated into every WCC degree program of study. At WCC these areas include writing, speech, mathematics, natural sciences, social and behavioral sciences, arts and humanities, and computer information literacy.

Grade Point Average
The number of grade points earned divided by the semester hours of credit attempted.

Grant
An award of money given to a student based on financial need. Grants do not need to be repaid.

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 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
A presentation 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 committe 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.

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-District, Out-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.

Self-paced Instruction
Instruction using a workbook, textbook, or computer, which helps the student attain a specified level of performance. Students proceed at their own pace through a series of steps, working with the instructor, as he/she finds necessary.

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 Student Records Office.

Tuition
The monetary charge a student must pay at the time of registration for each semester hour of academic credit. 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.

Appendices and Index

Appendices

Appendix A

■ MACRAO Transfer Agreement

The Michigan Association of Collegiate Registrars and Admissions Officers has developed an agreement to facilitate transfer from Michigan community colleges to baccalaureate colleges and universities. The agreement provides for transfer of up to 30 semester credit hours to meet many (in some cases all) of the General Education Requirements at participating Michigan four-year colleges and universities. 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.

How the Agreement Works

The MACRAO Transfer Agreement stipulates that 30 semester credit hours of 100-level and above, compatible, college-level coursework completed at one Michigan college or university 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 are included below. The institution offering the courses (the college you start with) determines the specific courses in each category. Once you have completed the course requirements for meeting MACRAO, you must request that your transcript be certified as "MACRAO Agreement Satisfied". You can do this in the Office of Student Records before having your transcript sent to the college to which you are transferring.

MACRAO Transfer Requirements

I. English Composition (6 credits)

Composition (ENG) 111, 122, 225

II. Social Science
(8-9 credits in more than one subject area)

Anthropology (ANT).....201, 202
Economics (ECO).....211, 222, 280
Geography (GEO).....101, 103
History (HST).....121, 122, 123, 150, 201, 202, 215, 216
Political Science (PLS).....112, 150, 211
Psychology (PSY) 100, 107, 130, 200, 206, 209, 210, 257, 260
Sociology (SOC) 100, 201, 202, 203, 205, 207, 230, 250

III. Science and Math (8-9 credits in more than one discipline, one must be a laboratory course)

Astronomy (AST).....111
Biology (BIO) 101, 102, 103, 107, 200, 208, 215, 220, 227, 228, 237
Chemistry (CEM) 105, 111, 122, 140, 211, 218, 222
Geology (GLG).....100, 103, 104, 109, 114, 125
Mathematics (MTH).....149*, 160, 169, 176, 178, 180, 181, 182, 191, 192, 197, 293, 295
Physics (PHY) 100*, 105, 111, 122, 211, 222

**Only for students in Elementary or Early Childhood Education*

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

Art (ART) 101, 111, 112, 114, 120, 122, 125, 130, 143, 150
Communication (COM) 101, 102, 130, 142, 183, 200
Dance (DAN) 180
Drama (DRA) 152, 208, 220
French (FRN) 111, 122, 213, 224
German (GRM) 111, 122
Humanities (HUM).....101, 102, 145, 160
Literature (ENG).....160, 170, 181, 200, 211, 212, 213, 214, 222, 223, 224, 240
Music (MUS) 140, 142, 180
Philosophy (PHL).....101, 102, 120, 123, 200, 205, 244, 250
Spanish (SPN) 111, 122, 213, 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. Frequently, these programs were designed to meet MACRAO requirements and should be followed carefully so as not to lose the benefits of MACRAO. If a program meets MACRAO, it will be noted under "Articulation" in the program description. Copies of articulation agreements can be obtained in the counseling office.

Four-Year Colleges that accept MACRAO

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

The Colleges listed below accept the Macrao transfer agreement

Adrian College*	Ferris State University	Northern Michigan University*
Albion College	Grand Valley State University*	Northwood University
Alma College*	Great Lakes College	Oakland University*
Aquinas College	Hope College*	Olivet College
Baker College	Kalamazoo College *	Saginaw Valley State University*
Calvin College	Lake Superior State University*	Sienna Heights College*
Central Michigan University	Lawrence Technological University*	Spring Arbor College
Cleary College*	Madonna University*	St. Mary's College
Davenport College	Michigan Christian College	University of Detroit Mercy
Detroit College of Business	Michigan State University*	Wayne State University*
Eastern Michigan University*	Michigan Technological University*	Western Michigan University

Appendix B

■ Courses That Meet Core Elements 13 and 14

Programs that were offered from Fall 1993 through Spring/Summer 2000, frequently required students to select a course that meets Core Curriculum Elements 13 and 14. Below is a list of courses that currently meet this requirement. You may choose any of these courses to fulfill core elements 13 and 14.

Course Number	Course Title	Credit Hours
ANT 201	Introduction to Cultural Anthropology	3
ART 130	Art Appreciation	3
ART 143	Art and Culture of Afro-America	3
ART 150	Monuments from Around the World	3
COM 142	Oral Interpretation of Literature	3
DAN 110	Afro-American Dance I	1
DAN 180	Dance Appreciation: The World of Dance	3
DAN 210	Afro-American Dance II	1
DRA 167	Theatre Production	2
DRA 170	Stratford Theatre Festival	2
ENG 140	Horror and Science Fiction	3
ENG 160	Intro to Literature: Poetry & Drama	3
ENG 170	Intro to Literature: Short Story & Novel	3
ENG 181	African American Literature	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
FRN 109	Beginning Conversational French	2
FRN 110	Intermediate Conversational French	2
FRN 111	First Year French I	5
FRN 122	First Year French II	5

Course Number	Course Title	Credit Hours
FRN 213	Second Year French I	3
FRN 224	Second Year French II	3
GRM 109	Conversational German	2
GRM 110	Intermediate Conversational German	2
GRM 111	First Year German I	5
GRM 122	First Year German II	5
HUM 101	Humanities I-Ancient to Medieval Times	3
HUM 102	Humanities II-Renaissance to Modern	3
HUM 140	Special Topics	3
HUM 150	International Cinema	3
HUM 170	Montreal World Film Festival	2
MUS 180	Music Appreciation	3
MUS 205	Voice II	3
PHL 120	Philosophy of Work	3
PHL 200	Existentialism	3
PHO 103	History of Photography	3
SPN 109	Beginning Conversational Spanish I	2
SPN 110	Beginning Conversational Spanish II	2
SPN 111	First Year Spanish I	4
SPN 119	Spanish Language Adventures	Var
SPN 122	First Year Spanish II	4
SPN 211	Intermediate Conversational Spanish	2
SPN 213	Second Year Spanish I	3
SPN 224	Second Year Spanish II	3

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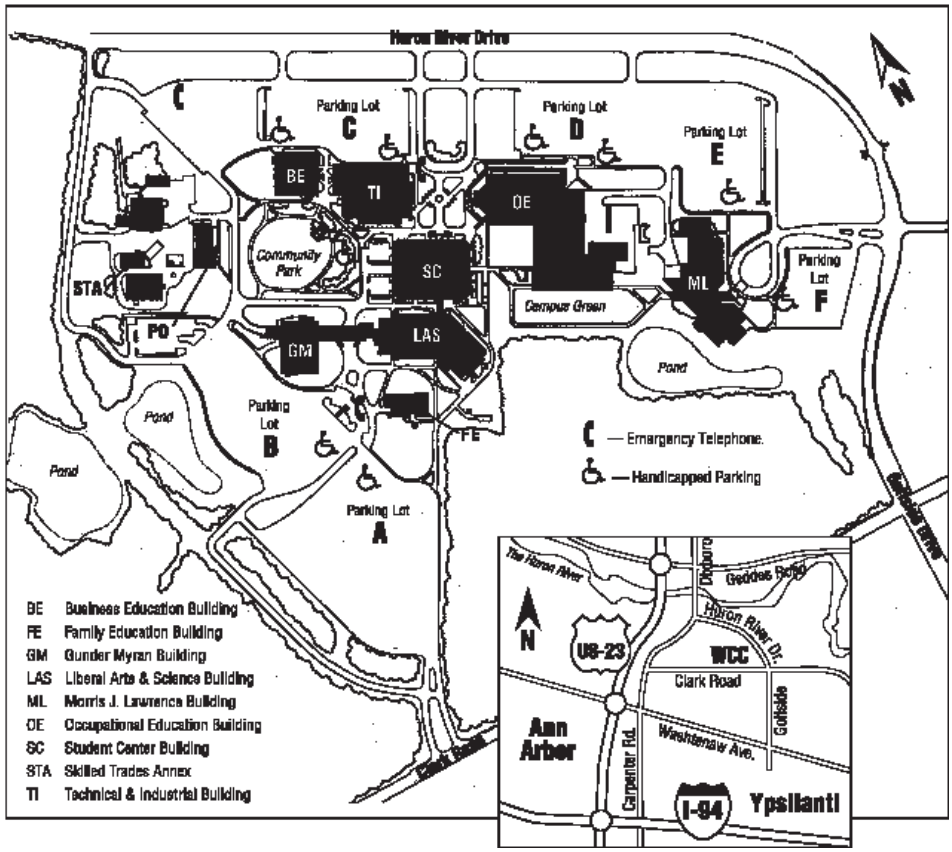
Campus Map



Disclaimers

a. *This document is for informational purposes only and is not to be construed as a binding offer or contract between the College and the student. This document was prepared in June, 2002 and is subject to change without prior notice.*
b. *This document is intended to be used with the Academic Class Schedule, which provides the latest information on courses offered for each semester and academic calendars for future semester.*

ADA/EEO/Title IX/Section 504
Compliance Statements

Washtenaw Community College does not discriminate on the basis of race, sex, color, religion, national origin, age, disability, height, weight, marital status, or veteran status in provision of its educational programs and services or in employment opportunities and benefits. WCC is committed to compliance in all of its activities and services with the requirements of Title IX of the Educational Amendments of 1972, Public Act 453, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964 as amended, Public Act 220, and the Americans with Disabilities Act of 1990.

Inquiries concerning programs and services under Title IX and Section 504, and the Americans with Disabilities Act should be directed to the Office of the Dean of Student Services; Room 225A, Student Center Building, (734) 973-3536. Inquiries regarding compliance in employment should be directed to the College Affirmative Action Officer in the Office of Human Resource Management, Room 120, Buisness and Education Building, (734) 973-3497. Inquiries concerning access to facilities should be directed to the Director of Plant Operations, Plant Operations Building, (734) 677-5300.

Title II Student Right to Know and Campus Security Act
Compliance Statement

The Student Right to Know and Campus Security Act of 1990 is a federal law that mandates the disclosure by all institutions of higher education of the rates of graduation, the number of incidents of certain criminal offenses, and the default rate for student loans. The law also mandates that information be provided on the type of security provided on campus, the pertinent policies regarding security on campus, and policies that record and deal with alcohol and drug abuse. Washtenaw Community College is in full compliance with these provisions and provides the required information annually through college publications. Inquiries concerning the Student Right to Know and Campus Security Act should be directed to Washtenaw Community College, Office of the Dean of Student Services, Room 221B, Student Center Building, Ann Arbor, MI 48106 (telephone (734) 973-3536.